CITY OF REDDING
GENERAL PLAN

DRAFT ENVIRONMENTAL IMPACT REPORT

for the City of Redding
2023-2045 General Plan

SCH# 2022050300 • July 2023

PLACEWORKS

Table of Contents

1. EXECUTIVE SUMMARY 1-1
   - 1.1 Introduction 1-1
   - 1.2 Environmental Procedures 1-2
   - 1.3 Project Location 1-2
   - 1.4 Project Summary 1-5
   - 1.5 Summary of Project Alternatives 1-9
   - 1.6 Areas of Controversy 1-9
   - 1.7 Summary of Environmental Impacts, Mitigation Measures, and Levels of Significance After Mitigation 1-9

2. INTRODUCTION 2-1
   - 2.1 Purpose of the Environmental Impact Report 2-1
   - 2.2 Notice of Preparation 2-2
   - 2.3 Scope of this DEIR 2-4
   - 2.4 Incorporation by Reference 2-5
   - 2.5 Final EIR Certification 2-5

3. PROJECT DESCRIPTION 3-1
   - 3.1 Project Location 3-1
   - 3.2 Project Objectives 3-1
   - 3.3 Project Characteristics 3-2
   - 3.4 References 3-21

4. ENVIRONMENTAL SETTING 4-1
   - 4.1 Introduction 4-1
   - 4.2 Regional Environmental Setting 4-1
   - 4.3 Local Environmental Setting 4-4
   - 4.4 Assumptions Regarding Cumulative Impacts 4-10
   - 4.5 References 4-13

5. ENVIRONMENTAL ANALYSIS 5-1
   - 5.1 Aesthetics 5.1-1
   - 5.2 Agriculture and Forestry Resources 5.2-1
   - 5.3 Air Quality 5.3-1
   - 5.4 Biological Resources 5.4-1
   - 5.5 Cultural and Tribal CUltural Resources 5.5-1
   - 5.6 Energy 5.6-1
   - 5.7 Geology and Soils 5.7-1

TABLE OF CONTENTS

5.8 Greenhouse Gases 5.8-1
5.9 Hazards and Hazardous Materials 5.9-1
5.10 Hydrology and Water Quality 5.10-1
5.11 Land Use and Planning 5.11-1
5.12 Mineral Resources 5.12-1
5.13 Noise 5.13-1
5.14 Population and Housing 5.14-1
5.15 Public Services 5.15-1
5.16 Transportation 5.16-1
5.17 Utilities and Service Systems 5.17-1
5.18 Wildfire 5.18-1

6. OTHER CEQA ASSESSMENT 6-1
6.1 Significant Environmental Effects of the Proposed Project 6-1
6.2 Significant Environmental Effects Which Cannot be Avoided if the Proposed Project is Implemented 6-1
6.3 Significant Irreversible Environmental Changes Which Would be Involved in the Proposed Project Should it be Implemented 6-3
6.4 Growth-Inducing Impact of the Proposed Project 6-4
6.5 Environmental Justice Element 6-5
6.6 The Mitigation Measures Proposed to Minimize the Significant Effects 6-6

7. ALTERNATIVES 7-1
7.1 Introduction 7-1
7.2 Alternatives Considered AND REJECTED DURING THE SCOPING/PROJECT PLANNING PROCESS 7-4
7.3 ALTERNATIVES SELECTED FOR FURTHER ANALYSIS 7-6
7.4 NO PROJECT/EXISTING GENERAL PLAN ALTERNATIVE 7-7
7.5 No Annexation 7-13
7.6 INcreased INTENSITY ALTERNATIVE 7-19
7.7 Environmentally Superior Alternative 7-24

8. PERSONS AND ORGANIZATIONS CONSULTED/ LIST OF PREPARERS 8-1
Placeworks 8-2
Contributing EIR Consultants 8-3

APPENDICES
Appendix 2-1: Notice of Preparation (NOP) and NOP Comments
Appendix 3-1: Redding 2023-2045 General Plan Public Review Draft
Appendix 3-2: Redding 2023-2045 General Plan Buildout Forecast Model Output
Appendix 5.3-1: AQGHG Data
Appendix 5.4-1: Biological Resources Technical Memorandum
Appendix 5.5-1: Cultural Resources Inventory Report
Appendix 5.13-1: Noise Appendix
Appendix 5.15-1: Service Provider Questionnaire

LIST OF FIGURES

Figure 1-1 Regional Location 1-3
Figure 1-2 Citywide Aerial 1-4
Figure 1-3 Existing Land Use Plan 1-7
Figure 3-1 Existing Planning and Growth Areas 3-3
Figure 3-2 Proposed Planning and Growth Areas 3-4
Figure 3-3 Opportunity Areas 3-7
Figure 3-4 Focus Areas 3-9
Figure 3-5 Circulation Plan 3-15
Figure 4-1 Existing Zoning 4-5
Figure 5.2-1 Designated Farmland within the City of Redding 5.2-7
Figure 5.2-2 Designated Farmland in the Planning Area 5.2-8
Figure 5.4-1 CalVeg – Land Cover 5.4-13
Figure 5.4-2 California Aquatic Resources Inventory 5.4-17
Figure 5.4-3 Sensitive Natural Communities 5.4-23
Figure 5.7-1 Natural Resource Conservation Service Soil Types 5.7-7
Figure 5.7-2 Regional Fault Map 5.7-11
Figure 5.7-3 Landslide Susceptibility Areas in Redding 5.7-17
Figure 5.9-1 Fire Hazards Zones within City Limits, SOI, and Planning Area 5.9-17
Figure 5.9-2 Public Airports in the City of Redding 5.9-18
Figure 5.10-1 Lower Sacramento Watershed and Clear Creek-Sacramento River Subbasin 5.10-13
Figure 5.10-2 Redding Groundwater Basin and Subbasins 5.10-14
Figure 5.10-3 Flood Zones Map 5.10-17
Figure 5.12-1 Locally Designated Mineral Resources in Redding 5.12-5
Figure 5.13-1 Approximate Noise Monitoring Locations 5.13-9
Figure 5.13-2 Redding Regional Airport Noise Contours 5.13-17
Figure 5.13-3 Benton Airpark Noise Contours 5.13-19
Figure 5.15-1 Fire Stations in the Vicinity of Redding 5.15-9
Figure 5.15-2 Elementary Schools and School Districts in Redding 5.15-33
Figure 5.15-3 High Schools and Schools Districts in Redding 5.15-37
Figure 5.15-4a Parks and Recreation Facilities in Redding 5.15-55
Figure 5.15-4b Parks and Recreation Facilities in Redding 5.15-56
Figure 5.15-4c Parks and Recreation Facilities in Redding 5.15-57
Figure 5.15-4d Parks and Recreation Facilities in Redding 5.15-58
Figure 5.16-1 Redding Circulation System 5.16-21
Figure 5.16-2 Bicycle Network in Redding 5.16-22
Figure 5.16-3 Pedestrian Facilities in Redding 5.16-23
Figure 5.16-4 Redding Area Bus Authority Routes, Stops, and Service Area 5.16-24
Figure 5.17-1 City of Redding Wastewater Treatment and Collection 5.17-7
Figure 5.17-2 Water Pipes 5.17-21
Figure 5.17-3 Stormwater Pipes 5.17-37
Figure 5.18-1 Wildland Urban Interface Areas 5.18-17
Figure 5.18-2 Fire Hazard Severity Zones 5.18-18

Figure 5.18-3 Residential Uses in Fire Hazard Severity Zones 5.18-19
Figure 5.18-4 CPUC Fire Threat Levels 5.18-20
Figure 5.18-5 Fire Perimeters Through 2021 Near Redding 5.18-23

LIST OF TABLES

Table 1-1 Summary of Environmental Impacts, Mitigation Measures, and Levels of Significance after Mitigation 1-11
Table 2-1 Notice of Preparation Comments 2-2
Table 3-1 Planning Boundaries 3-4
Table 3-2 2045 General Plan Planning Horizon Forecast 3-18
Table 4-1 Summary of Existing Land Uses 4-7
Table 4-2 Land Use Designations in the City under Current General Plan 4-8
Table 5.2-1 Farmland Acreage in Redding (Acres) 5.2-5
Table 5.2-2 Forestland Acreage in Redding SOI 5.2-6
Table 5.3-1 Criteria Air Pollutant Health Effects Summary 5.3-2
Table 5.3-2 CARB Recommendations for Siting New Sensitive Land Uses 5.3-6
Table 5.3-3 Ambient Air Quality Standards for Criteria Pollutants 5.3-8
Table 5.3-4 Thresholds of Significance for Criteria Pollutants of Concern 5.3-13
Table 5.3-5 Federal and State Ambient Air Quality Attainment Status for Shasta County 5.3-13
Table 5.3-6 Recommended Standard Mitigation Measures for All Projects 5.3-18
Table 5.3-7 Recommended BAMMs for Residential Projects 5.3-19
Table 5.3-8 Recommended BAMMs for Commercial/Industrial Projects 5.3-20
Table 5.3-9 Ambient Air Quality Monitoring Data 5.3-22
Table 5.3-10 Comparison of NSVPA and 2023-2045 General Plan Ozone Precursor Emissions – Areawide and Mobile Sources 5.3-33
Table 5.3-11 Proposed Project Criteria Air Pollutant Emissions Forecast 5.3-41
Table 5.4-1 CalVeg Land Cover Types and acreage within Redding Sphere of Influence 5.4-12
Table 5.6-1 Electricity Consumption in Redding 2019-2021 ..... 5.6-10
Table 5.6-2 Natural Gas Consumption in Redding 2019-2021 ..... 5.6-12
Table 5.6-3 Year 2045 Forecast Electricity Consumption 5.6-25
Table 5.6-4 Year 2045 Forecast Natural Gas and Propane Consumption 5.6-26
Table 5.7-1 List of NRCS soil types within the Planning Area 5.7-9
Table 5.7-2 Distances and Directions to Relevant Faults 5.7-10
Table 5.8-1 GHG Emissions and Their Relative Global Warming Potential Compared to CO_2 ..... 5.8-3
Table 5.8-2 Summary of GHG Emissions Risk to California 5.8-5
Table 5.8-3 Priority Strategies for Local Government Climate Action Plans 5.8-11
Table 5.8-4 Existing City of Redding GHG Emissions Inventory 5.8-23
Table 5.8-5 City of Redding GHG Emissions Forecast 5.8-37
Table 5.8-6 RTP/SCS Consistency Analysis 5.8-43
Table 5.9-1 Geotracker Sites in the City of Redding 5.9-14
Table 5.9-2 Envirostor Sites in the City of Redding 5.9-15

TABLE OF CONTENTS

Table 5.10-1 Construction BMPs 5.10-9
Table 5.13-1 FTA Groundborne Vibration Criteria: Human Annoyance 5.13-2
Table 5.13-2 FTA Groundborne Vibration Criteria: Architectural Damage 5.13-3
Table 5.13-3 Requirements for an Acoustical Analysis 5.13-5
Table 5.13-4 Redding Exterior Noise Standards 5.13-6
Table 5.13-5 Long-Term Noise Measurement Summary (dBA) 5.13-11
Table 5.13-6 Short-Term Noise Measurement Summary (dBA) 5.13-15
Table 5.13-7 Existing Railroad Noise Levels 5.13-21
Table 5.13-8 Construction equipment Noise Emission Levels 5.13-26
Table 5.13-9 Traffic Noise Increases in the Planning Area 5.13-30
Table 5.13-10 Vibration Levels for Construction Equipment 5.13-37
Table 5.14-1 Population Trends in the City of Redding and Shasta County 2012 - 2023 ..... 5.14-8
Table 5.14-2 Housing UNIT Growth Trends in the City of Redding and Shasta County 5.14-8
Table 5.14-3 City Of Redding 2018–2028 Regional Housing Needs Assessment 5.14-9
Table 5.14-4 City of Redding and Shasta County Employment Trends 5.14-9
Table 5.14-5 City of Redding; industry by Occupation (2012 and 2020) 5.14-10
Table 5.15-1 Redding Fire Stations 5.15-7
Table 5.15-2 Redding Fire Facilities Impact Fees 5.15-12
Table 5.15-3 Schools in Redding 5.15-35
Table 5.15-4 Redding Schools Enrollment 5.15-39
Table 5.15-5 Student Population Growth in Redding 5.15-42
Table 5.15-6 Redding Parks and Recreation Facilities Impact Fees 5.15-54
Table 5.16-1 Redding Transportation Impact Fees 5.16-12
Table 5.16-2 Average Daily Traffic in Redding 5.16-14
Table 5.16-3 Redding 2020 and 2045 VMT Summary 5.16-38
Table 5.17-1 City of Redding Projected Water Supply and Demand 5.17-23
Table 5.17-2 Single Dry Year Supply and Demand (Redding Water Utility) 5.17-24
Table 5.17-3 Multiple Dry Years Supply and Demand (Redding Water Utility) 5.17-24
Table 5.17-4 Single Dry Year Supply and Demand (Bella Vista Water District) 5.17-25
Table 5.17-5 Multiple Dry Years Supply and Demand (Bella Vista Water District) 5.17-25
Table 5.18-1 Recent Wildfire History Near Redding And Its Soi 5.18-25
Table 7-1 Proposed Project v. Increased Intensity Scenario 7-19
Table 7-2 Alternatives Impact Comparison 7-25
Table 7-3 Primary Objectives Alternative Comparison 7-26

TABLE OF CONTENTS

This page intentionally left blank.

1. *Executive Summary*

This chapter presents an overview of the proposed Redding 2023-2045 General Plan Update, herein referred to as the "proposed project." This executive summary also provides conclusions of the analyses contained in Sections 5.1 through 5.18 of this Draft Environmental Impact Report (Draft EIR), a summary of the alternatives to the proposed project, and issues to be resolved. For a complete description of the proposed project, refer to Chapter 3, *Project Description*. For a discussion of alternatives to the proposed project, see Chapter 7, *Alternatives*.

This Draft EIR addresses the environmental effects associated with adoption and implementation of the proposed project. An EIR is a public document designed to provide the public, local, and state governmental agency decision makers with an analysis of potential environmental consequences to support informed decision making. The California Environmental Quality Act (CEQA) requires that local government agencies, prior to taking action on projects over which they have discretionary approval authority, consider the environmental consequences of such projects.

This Draft EIR has been prepared pursuant to the requirements of CEQA (California Public Resources Code, Division 13, Section 21000, et seq.) and the State CEQA Guidelines (Title 14 of the California Code of Regulations (CCR), Division 6, Chapter 3, Section 15000, et seq.) to determine if the proposed project could have a significant impact on the environment. Information for this Draft EIR was obtained through on-site field observations; discussions with public service agencies; analysis of adopted plans and policies; review of available studies, reports, data, and similar literature in the public domain; and specialized environmental assessments (e.g., air quality, biological resources, cultural resources, greenhouse gas emissions, noise, and transportation).

1.1 INTRODUCTION

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

Data for this EIR derive from on-site field observations; discussions with affected agencies; analysis of adopted plans and policies; review of available studies, reports, data, and similar literature; and specialized environmental assessments (aesthetics, agriculture and forestry resources, air quality, biological resources, cultural resources, energy, geology and soils, greenhouse gas emissions, hazards and

hazardous materials, hydrology and water quality, mineral resources, land use and planning, noise, population and housing, public services, recreation, transportation, tribal cultural resources, utilities and service systems, and wildfire).

1.2 ENVIRONMENTAL PROCEDURES

The following objectives for the 2023-2045 General Plan Update will aid decision makers in their review of the project and associated environmental impacts:

- Advance the City's vision for a resilient, equitable, and healthy community with high-quality development urban centers and corridors.
- Redevelop existing commercial centers and arterial street corridors to provide a larger range of neighborhood-serving services, and/or additional residential uses.
- Strive to ensure that all new development connects to existing paths, trails, and roadways, where reasonable.

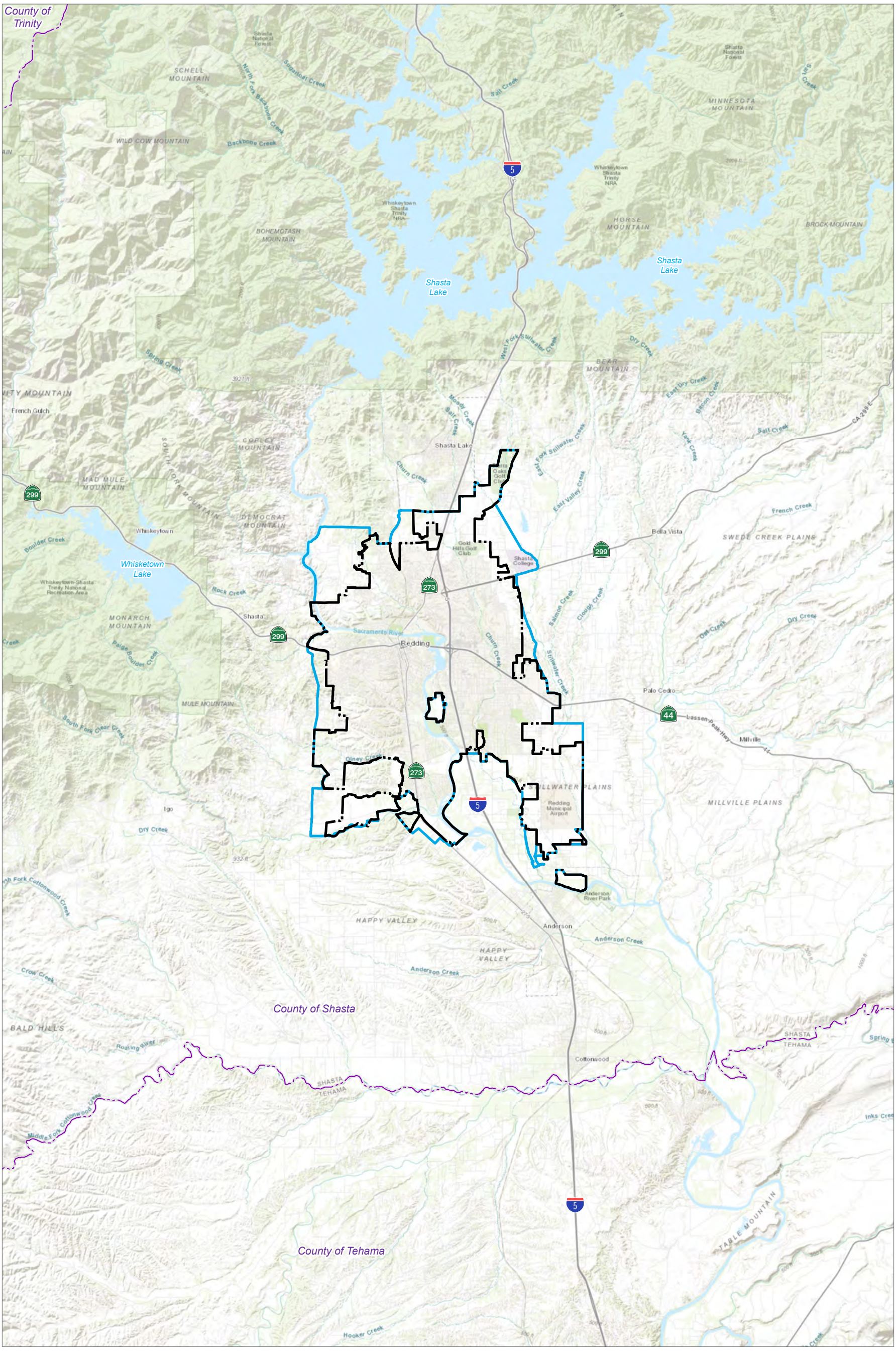
An EIR is the most comprehensive form of environmental documentation in CEQA and the CEQA Guidelines; it is intended to provide an objective, factually supported analysis and full disclosure of the environmental consequences of a proposed project with the potential to result in significant, adverse environmental impacts.

An EIR is one of various decision-making tools used by the City to consider the merits and disadvantages of a project that is subject to its discretionary authority. Before approving a proposed project, the City must consider the information in the EIR; determine whether the EIR was prepared in accordance with CEQA and the CEQA Guidelines; determine that it reflects the independent judgment of the lead agency; adopt findings concerning the project's significant environmental impacts and alternatives; and adopt a statement of overriding considerations if significant impacts cannot be avoided.

1.3 PROJECT LOCATION

The City of Redding's Planning Area and Sphere of Influence are in south-central Shasta County. Adjacent to the north is the City of Shasta Lake. Figure 1-1, *Regional Location* and Figure 1-2, *Citywide Aerial* show the City's location and its regional context. The City of Anderson is located approximately 10 miles south of Redding. Redding is principally bordered by unincorporated Shasta County lands. Interstate and regional access to the city is provided by Interstate 5 (I-5), which runs in a general north-south direction and bisects the city. State Route 299, an east/west facility, also bisects the city. State Route 44 begins in Redding and runs east toward Lassen Volcanic National Park.

1. EXECUTIVE SUMMARY



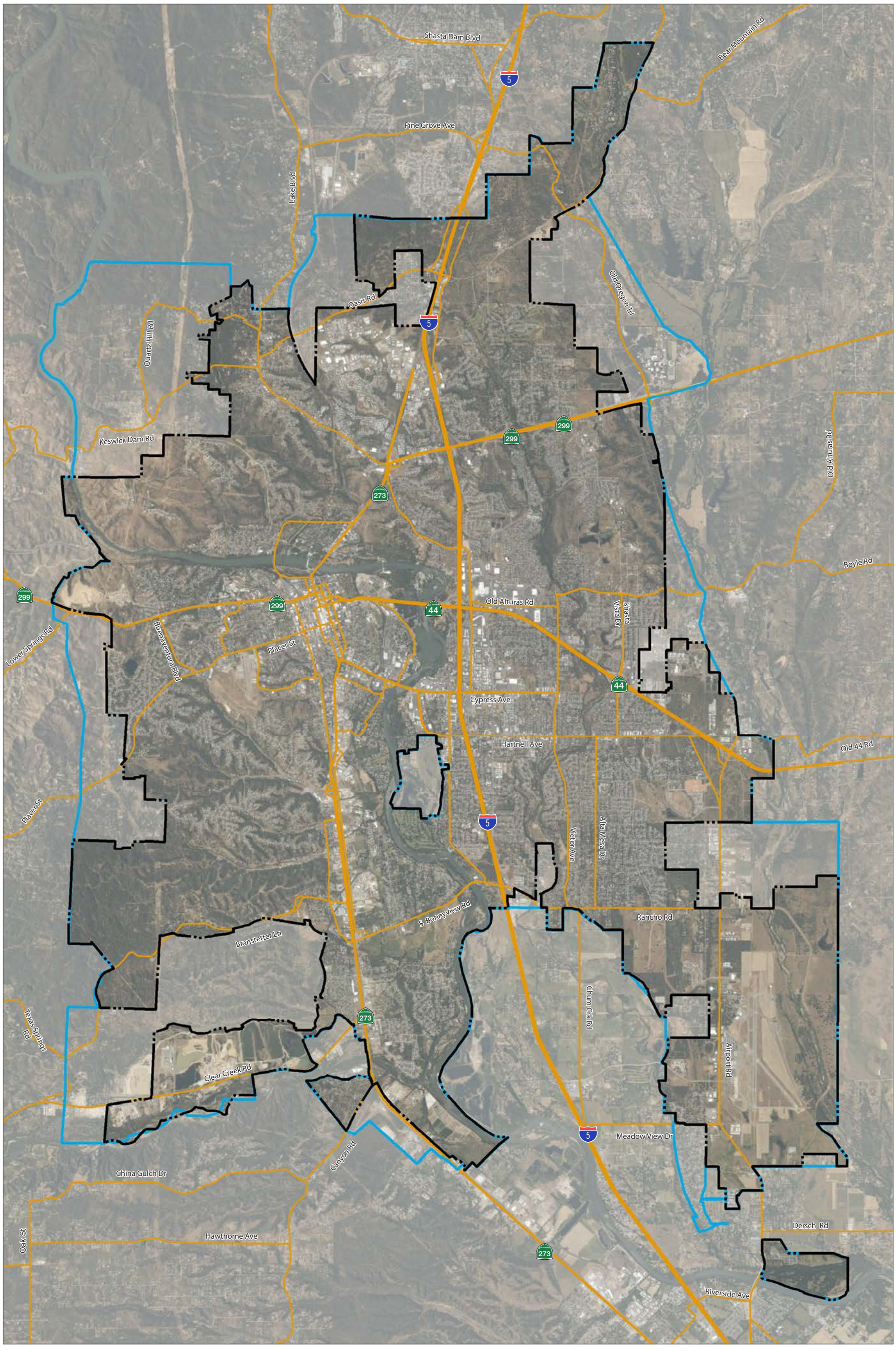
Source: Generated using ArcMap, 2023; City of Redding GIS 2017, 2021

0 3
Scale (Miles)

Redding City Limit
Redding SOI
County Boundary

Figure 1-1
Regional Location

1. EXECUTIVE SUMMARY



Source: Generated using ArcMap, 2023; City of Redding GIS 2017, 2021

0 2
Scale (Miles)

Redding City Limit
Redding SOI

Figure 1-2
Citywide Aerial

1.4 PROJECT SUMMARY

The 2023-2045 General Plan Update is an update to the City of Redding's adopted General Plan. The proposed project includes comprehensive updates to the required elements under the State Planning and Zoning Law, as well as other optional elements that the City has elected to include in its General Plan. In addition, an Environmental Justice Element is embedded throughout the updated General Plan's goals and policies. Each element includes goals and policies that are based, in part, on creating an equitable, sustainable, and livable community of neighborhoods, and provides updates based on State and local law, and other considerations.

The proposed project will also involve decreasing the size of the City's Planning Area to generally match boundaries of the City's existing Sphere of Influence (SOI) while including Churn Creek Bottom. The proposed project would not alter the City's existing land use plan with the exception of reducing the size of the Planning Area as shown in Figure 1-3, *Existing Land Use Plan.* .

1.4.1 EIR FORMAT

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

Chapter 2. Introduction: Describes the purpose of this EIR, background on the project, the notice of preparation, the use of incorporation by reference, and Final EIR certification.

Chapter 3. Project Description: A detailed description of the project, including its objectives, its area and location, approvals anticipated to be required as part of the project, necessary environmental clearances, and the intended uses of this EIR.

Chapter 4. Environmental Setting: A description of the physical environmental conditions in the vicinity of the project as they existed at the time the notice of preparation was published, from local and regional perspectives. These provide the baseline physical conditions from which the lead agency determines the significance of the project's environmental impacts.

Chapter 5. Environmental Analysis: Each environmental topic is analyzed in a separate section that discusses: the thresholds used to determine if a significant impact would occur; the methodology to identify and evaluate the potential impacts of the project; the existing environmental setting; the potential adverse and beneficial effects of the project; the level of impact significance before mitigation; the mitigation measures for the project; the level of significance after mitigation is incorporated; and the potential cumulative impacts of the project and other existing, approved, and proposed development in the area.

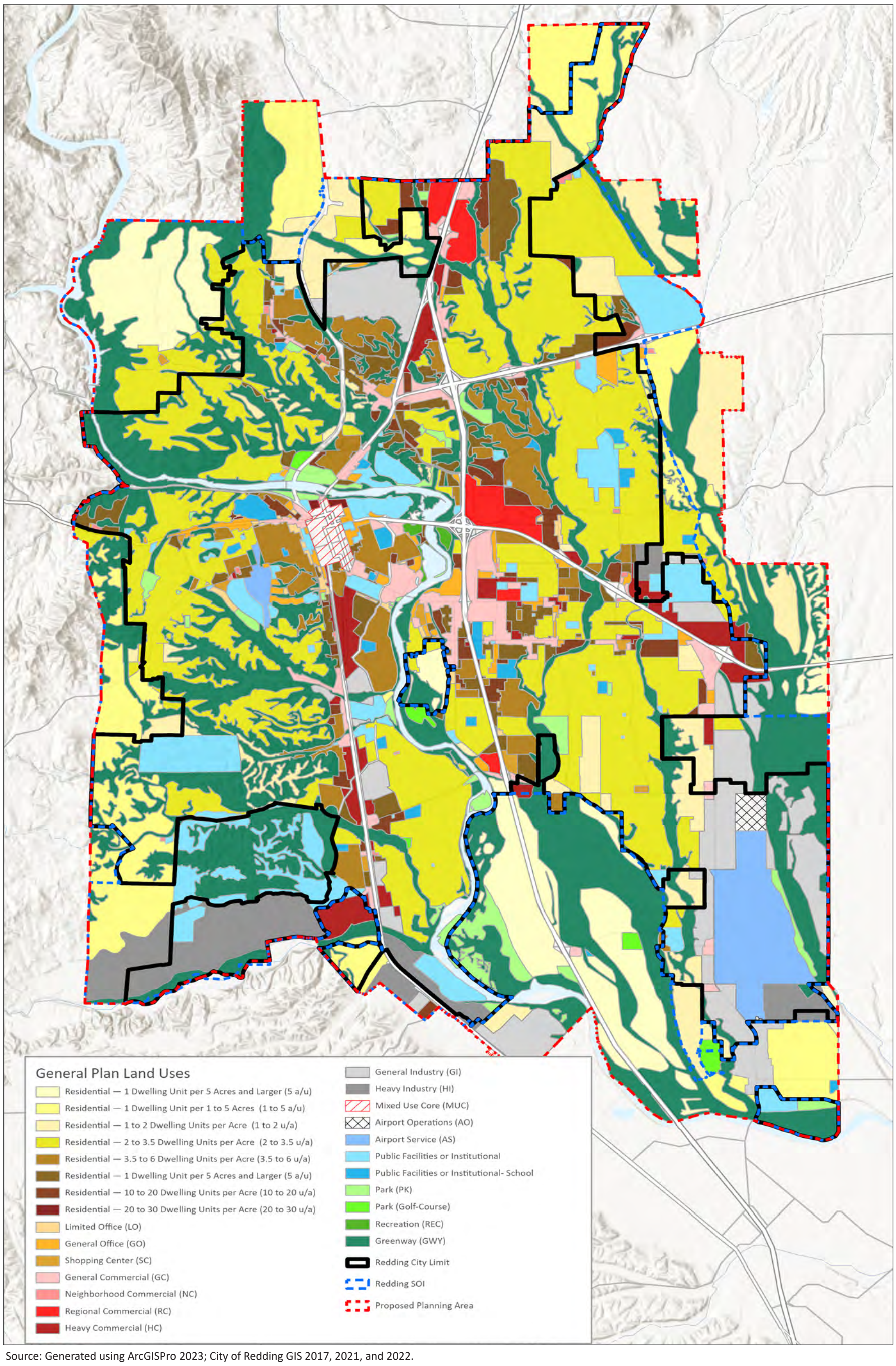
Chapter 6. Unavoidable Impacts, Irreversible Changes, and Growth-Inducing Impacts: Describes the significant unavoidable adverse impacts and significant irreversible environmental changes associated with the project. Describes the ways in which the project would cause increases in employment or population that could result in new physical or environmental impacts.

Chapter 7. Alternatives to the Project: Describes the alternatives and compares their impacts to the impacts of the project. Alternatives include the No Project Alternative.

Chapter 8. Organizations Consulted and Qualifications of Preparers: Lists the people and organizations that were contacted during the preparation of this EIR, as well as the people who prepared this EIR for the project.

Appendices: The appendices for this document comprise the following supporting documents and can be found online at: https://www.cityofredding.org/departments/development-services/planning/general-plan-and-development-guidelines and:

- Appendix 2-1: Notice of Preparation (NOP) and NOP Comments
- Appendix 3-1: Redding 2023-2045 General Plan Public Review Draft
- Appendix 3-2: Redding 2023-2045 General Plan Planning Horizon Forecast Model
- Appendix 5.3-1: Air Quality and Greenhouse Gas Emissions Data
- Appendix 5.4-1: Biological Resources Technical Memorandum for the City of Redding General Plan Update
- Appendix 5.5-1: Cultural Resources Inventory Report
- Appendix 5.13-1: Noise Data
- Appendix 5.15-1: Service Providers Questionnaires



Source: Generated using ArcGISPro 2023; City of Redding GIS 2017, 2021, and 2022.

0 2
Scale (Miles)

Figure 1-3
Existing Land Use Plan

This page intentionally left blank.

1.5 SUMMARY OF PROJECT ALTERNATIVES

CEQA requires that an EIR analyze a "no project" alternative (CEQA Guidelines Section 15126.6(e)). CEQA Guidelines also require that the environmentally superior alternative be designated. If the alternative with the least environmental impact is the No Project Alternative, the EIR must designate the next most environmentally superior alternative.

- No Project/Existing General Plan
- No Annexation
- Increased Intensity

1.6 AREAS OF CONTROVERSY

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

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

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

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

This page intentionally blank

TABLE 1-1 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Environmental Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
5.1 Aesthetics			
AES-1: The proposed project would not substantially alter or damage scenic vistas or substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway.	Less than Significant	None Required	Less than Significant
AES-2: The proposed project would not substantially degrade the existing visual character or quality of the site and its surroundings nor conflict with applicable zoning and other regulation governing scenic quality in non-urbanized areas.	Less than Significant	None Required	Less than Significant
AES-3: The proposed project would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.	Less than Significant	None Required	Less than Significant
AES-4: The proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in less-than-significant cumulative impacts with respect to aesthetics.	Less than Significant	None Required	Less than Significant
5.2 Agricultural and Forestry Resources			
AG-1: The proposed project would convert Prime Farmland to urban land use.	Potentially Significant	Non-Feasible	Significant and Unavoidable
AG-2: The proposed project would not require a zone change or general plan amendment and/or conflict with an existing Williamson contract nor would the proposed project conflict with existing zoning for, timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g)).	No Impact	None Required.	No Impact
AG-3: The proposed project would result in loss of forest land or conversion of forest land to non-forest use.	Potentially Significant	Non-Feasible	Significant and Unavoidable
AG-4: The proposed project would not involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland	Less than Significant	None Required.	Less than Significant

TABLE 1-1 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Environmental Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
to non-agricultural use or conversion of forest land to non-forest use.			
AG-5: The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in significant and unavoidable cumulative impacts with respect to agricultural and forestry resources.	Potentially Significant	Non-Feasible	Significant and Unavoidable
5.3 Air Quality			
AQ-1: The proposed project would conflict with or obstruct implementation of the 2021 Air Quality Attainment Plan.	Potentially Significant	**AQ-1:** The City shall ensure that discretionary development shall incorporate all applicable Standard Mitigation Measures (SMMs) contained in the General Plan Natural Resources Element to reduce emissions to be less than the applicable thresholds. These SMMs include but are not limited to the most recent SCAQMD recommendations for construction. **AQ-2:** Applicants of future discretionary development projects that would generate construction-related or operational-related emissions that exceed applicable thresholds, shall include, but are not limited to, Best Available Mitigation Measures (BAMMs) recommended by SCAQMD, to the extent feasible and applicable to the project.	Significant and Unavoidable
AQ-2: Construction of the proposed project would generate regional and localized emissions of criteria air pollutants or precursor emissions in excess of the SCAQMD thresholds, resulting in a cumulatively considerable net increase of criteria pollutants for which the project region is non-attainment under an applicable federal or state ambient air quality standard and potentially exposing sensitive receptors to substantial pollutant concentrations.	Potentially Significant	Implement Mitigation Measures AQ-1 and AQ-2	Significant and Unavoidable
AQ-3: Operation of the proposed project would generate regional and localized emissions of criteria air pollutants or precursor emissions in excess of the SCAQMD thresholds, resulting in a cumulatively considerable net increase of criteria pollutants for which the project	Potentially Significant	Implement Mitigation Measures AQ-1 and AQ-2	Significant and Unavoidable

TABLE 1-1 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Environmental Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
region is non-attainment under an applicable federal or state ambient air quality standard and potentially exposing sensitive receptors to substantial pollutant concentrations.			
AQ-4: The proposed project would not result in other emissions that would adversely affect a substantial number of people.	Less than Significant	None Required	Less than Significant
AQ-5: The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in significant cumulative impacts with respect to air quality.	Potentially Significant	Implement Mitigation Measures AQ-1 and AQ-2.	Significant and Unavoidable
5.4 Biological Resources			
BIO-1: The proposed project would not have a substantial adverse effect, either directly or through habitat modifications, on species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations by the California Department of Fish and Wildlife or United States Fish and Wildlife Service.	Less than Significant	None Required	Less than Significant
BIO-2: The proposed project would not have a substantial adverse effect on riparian habitat and other sensitive natural communities identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or United States Fish and Wildlife Service.	Less than Significant	None Required	Less than Significant
BIO-3: The proposed project would not have a substantial adverse effect on state or federally protected wetlands (marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.	Less than Significant	None Required	Less than Significant
BIO-4: The proposed project could interfere with the movement of a native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.	Less than Significant	None Required	Less than Significant

TABLE 1-1 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Environmental Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
BIO-5: The proposed project would not conflict with any local policies or ordinances protecting biological resources nor with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan.	No Impact	None Required.	No Impact
BIO-6: The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in significant and unavoidable cumulative impacts with respect to biological resources.	Potentially Significant	Non-Feasible	Significant and Unavoidable
5.5 Cultural Resources and Tribal Cultural Resources			
CULT-1: The proposed project could cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5.	Potentially Significant	Non-feasible	Significant and Unavoidable
CULT-2: The proposed project could cause a substantial adverse change in the significance of an archeological resource pursuant to CEQA Guidelines Section 15064.5.	Potentially Significant	None Required.	Less than Significant
CULT-3: The proposed project would not disturb any human remains, including those interred outside of formal cemeteries.	Less than Significant	None Required.	Less than Significant
TCR-1: The proposed project would not cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Sections, 21074, 5020.1(k), or 5024.1.	Less than Significant	None Required	Less than Significant
CULT-5: The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in less-than-significant cumulative impacts with respect to cultural and tribal resources.	Less than Significant	None Required	Less than Significant
5.6 Energy			
ENE-1: Implementation of the General Plan Update would not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources.	Less than Significant	None Required	Less than Significant

TABLE 1-1 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Environmental Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
ENE-2: The project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency.	Less than Significant	None Required	Less than Significant
ENE-3: The project would not require or result in the relocation or construction of new or expanded energy facilities, the construction or relocation of which could cause significant environmental effects.	Less than Significant	None Required	Less than Significant
ENE-4: The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in less-than-significant cumulative impacts with respect to energy	Less than Significant	None Required	Less than Significant
5.7 Geology and Soils			
GEO-1: The project would not exacerbate hazards from surface rupture of a known active fault, strong seismic ground shaking, seismic-related ground failure, or landslides.	Less than Significant	None Required	Less than Significant
GEO-2: The project would not result in substantial soil erosion or the loss of topsoil.	Less than Significant	None Required	Less than Significant
GEO-3: The project would not result in a significant impact related to development on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.	Less than Significant	None Required	Less than Significant
GEO-4: The project would not create substantial risks to life or property as a result of its location on expansive soil, as defined in Section 1803.5.3 of the California Building Code, creating substantial direct or indirect risks to life or property.	Less than Significant	None Required	Less than Significant
GEO-5: The project would not utilize septic tanks or alternative wastewater disposal systems where soils would be incapable of adequately supporting the in cases where sewers are not available for the disposal of wastewater.	Less than Significant	None Required	Less than Significant

TABLE 1-1 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Environmental Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
GEO-6: Project development would not directly or indirectly destroy a unique paleontological resource or unique geologic feature.	Potentially Significant	**GEO-1:** Prior to issuance of a grading permit for projects involving ground disturbance in previously undisturbed areas mapped with "low-to-high" paleontological sensitivity, the project applicant shall consult with a geologist or paleontologist to confirm whether the grading would occur at depths that could encounter highly sensitive sediments for paleontological resources. If confirmed that underlying sediments may have sensitivity, construction activity shall be monitored by a qualified paleontologist. The paleontologist shall have the authority to halt construction during ground-disturbing activities, as outlined in Mitigation Measure GEO-2. **GEO-2:** In the event of any fossil discovery, regardless of depth or geologic formation, ground-disturbing activities shall halt within a 50-foot radius of the find until its significance can be determined by a qualified paleontologist. Significant fossils shall be recovered, prepared to the point of curation, identified by qualified experts, listed in a database to facilitate analysis, and deposited in a designated paleontological curation facility, in accordance with the standards of the Society of Vertebrate Paleontology. The repository shall be identified, and a curatorial arrangement shall be signed prior to collection of the fossils.	Less than Significant
GEO-7: The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in less-than-significant cumulative impacts with respect to geology and soils.	Less than Significant	None Required	Less than Significant
5.8 Greenhouse Gases			
GHG-1: The project would generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.	Potentially Significant	Non-Feasible	Significant and Unavoidable
GHG-2: The proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.	Less than Significant	None Required	Less than Significant

TABLE 1-1 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Environmental Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
GHG-3: Implementation of the proposed project would, in combination with past, present, and reasonably foreseeable projects, result in a cumulative impact with respect to GHG emissions.	Potentially Significant	Non-Feasible	Significant and Unavoidable
5.9 Hazards and Hazardous Materials			
HAZ-1: The proposed project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	Less than Significant	None Required	Less than Significant
HAZ-2: The project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	Less than Significant	None Required	Less than Significant
HAZ-3: The project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 miles of an existing or proposed schools.	Less than Significant	None Required	Less than Significant
HAZ-4: Implementation of the proposed project would not create a significant hazard to the public or the environment by being located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.	Less than Significant	None Required	Less than Significant
HAZ-5: The project would be located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, resulting in a safety hazard or excessive noise for people residing or working in the project area.	Less than Significant	None Required	Less than Significant
HAZ-6: Implementation of the proposed project could impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	Less than Significant	None Required	Less than Significant
HAZ-7: The project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.	Less than Significant	None Required	Less than Significant

TABLE 1-1 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Environmental Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
HAZ-8: The proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in less-than-significant cumulative impacts with respect to hazards and hazardous materials.	Less than Significant	None Required	Less than Significant
5.10 Hydrology and Water Quality			
HYD-1: The proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.	Less than Significant	None Required	Less than Significant
HYD-2: The proposed project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.	Less than Significant	None Required	Less than Significant
HYD-3: The proposed project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: i) result in substantial erosion or siltation on- or off-site; ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or iv) impede or redirect flood flows.	Less than Significant	None Required	Less than Significant
HYD-4: The proposed project would not be in a flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.	Less than Significant	None Required	Less than Significant
HYD-5: The proposed project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.	Less than Significant	None Required	Less than Significant

TABLE 1-1 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Environmental Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
HYD-6: The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in less-than-significant cumulative impacts with respect to hydrology and water quality.	Less than Significant	None Required	Less than Significant
5.11 Land Use and Planning			
LU-1: Implementation of the proposed project would not divide an established community.	Less than Significant	None Required	Less than Significant
LU-2: Implementation of the proposed project would not conflict with land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.	Less than Significant	None Required	Less than Significant
LU-3: The proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in less-than-significant cumulative impacts with respect to land use and planning.	Less than Significant	None Required	Less than Significant
5.12 Mineral Resources			
MIN-1: The proposed project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state or result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.	Less than Significant	None Required	Less than Significant
MIN-2: The proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in less-than-significant cumulative impacts with respect to mineral resources.	Less than Significant	None Required	Less than Significant
5.13 Noise			
NOI-1: Construction activities associated with buildout of the Planning Area would result in temporary noise increases at sensitive receptors.	Potentially Significant	**NOI:** Update the noise ordinance to include construction noise attenuation and plan requirements such as: ▪ Limiting construction times and days. ▪ Use of best-available noise control techniques (e.g., improved mufflers, equipment re-design,	

TABLE 1-1 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Environmental Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
		use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds), wherever feasible. ▪ Limitations on the use of impact tools (e.g., jack hammers and hoe rams) shall be hydraulically or electrically powered wherever possible. Where the use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used along with external noise jackets on the tools.	
NOI-2: Buildout of the Planning Area would cause a substantial traffic noise increase on local roadways and could locate sensitive receptors in areas that exceed established noise standards.	Potentially Significant	Non-Feasible	Significant and Unavoidable
NOI-3: Buildout of the individual land uses and projects for implementation of the General Plan may expose sensitive uses to excessive levels of groundborne vibration.	Potentially Significant	**NOI-2:** Prior to issuance of a building permit for a project requiring pile driving during construction within 135 feet of fragile structures, such as historical resources, 100 feet of non-engineered timber and masonry buildings (e.g., most residential buildings), or within 75 feet of engineered concrete and masonry (no plaster); or a vibratory roller within 25 feet of any structure, the project applicant shall prepare a noise and vibration analysis to assess and mitigate potential noise and vibration impacts related to these activities. This noise and vibration analysis shall be conducted by a qualified and experienced acoustical consultant or engineer. The vibration levels shall not exceed Federal Transit Administration (FTA) architectural damage thresholds (e.g., 0.12 inches per second [in/sec] peak particle velocity [PPV] for fragile or historical resources, 0.2 in/sec PPV for non-engineered timber and masonry buildings, and 0.3 in/sec PPV for engineered concrete and masonry). If vibration levels would exceed this threshold, alternative uses such as drilling piles as opposed to pile driving and static rollers as opposed to vibratory rollers shall be used. If necessary, construction vibration monitoring shall	Less than Significant

TABLE 1-1 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Environmental Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
		be conducted to ensure vibration thresholds are not exceeded. **NOI-3:** New residential projects (or other noise-sensitive uses) located within 200 feet of existing railroad lines shall be required to conduct a groundborne vibration and noise evaluation consistent with Federal Transit Administration (FTA)-approved methodologies. **NOI-4:** During the project-level California Environmental Quality Act (CEQA) process for industrial developments under the General Plan Update or other projects that could generate substantial vibration levels near sensitive uses, a noise and vibration analysis shall be conducted to assess and mitigate potential noise and vibration impacts related to the operations of that individual development. This noise and vibration analysis shall be conducted by a qualified and experienced acoustical consultant or engineer and shall follow the latest CEQA guidelines, practices, and precedents	
NOI-4: The proximity of the future development in the Planning Area to an airport or airstrip would not result in exposure of future residents and/or workers to excessive airport-related noise.	Less than Significant	None Required	Less than Significant
5.14 Population and Housing			
PH-1: Implementation of the proposed project would directly result in population growth in the project area.	Less than Significant	None Required	Less than Significant
PH-2: Project implementation would not result in displacing a substantial number of people and/or housing, necessitating the construction of replacement housing elsewhere.	Less than Significant	None Required	Less than Significant
PH-3: The proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in less-than-significant cumulative impacts with respect to population and housing.	Less than Significant	None Required	Less than Significant

TABLE 1-1 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Environmental Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
5.15 Public Services, Parks, and Recreation			
PS-1: Implementation of the proposed project would not result in the need for new or physically altered fire protection and emergency medical facilities, the construction of which could cause significant environmental impacts to maintain acceptable service ratios, response times, or other performance objectives.	Less than Significant	None Required	Less than Significant
PS-2: Implementation of the proposed project would not, in combination with past, present, and reasonably foreseeable projects, result in a cumulative fire protection services impact.	Less than Significant	None Required	Less than Significant
PS-3: The proposed project would not result in the need for new or physically altered police facilities, the construction of which could cause significant environmental impacts to maintain acceptable service ratios, response times, or other performance objectives.	Less than Significant	None Required	Less than Significant
PS-4: Implementation of the proposed project would not, in combination with past, present, and reasonably foreseeable projects, result in a cumulative police protection services impact.	Less than Significant	None Required	Less than Significant
PS-5: The proposed project would not result in the need for new or physically altered school facilities, the construction of which could cause significant environmental impacts to maintain acceptable service ratios or other performance objectives.	Less than Significant	None Required	Less than Significant
PS-6: Implementation of the proposed project would not, in combination with past, present, and reasonably foreseeable projects, result in a cumulative school services impact.	Less than Significant	None Required	Less than Significant
PS-7: The proposed project would not result in the need for new or physically altered public facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives.	Less than Significant	None Required	Less than Significant

TABLE 1-1 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Environmental Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
PS-8: The project would not in combination with past, present, and reasonably foreseeable projects, result in cumulative library impacts in the area.	Less than Significant	None Required	Less than Significant
REC-1: The proposed project would not increase the use of existing neighborhood and regional parks or other recreational facilities, such that substantial physical deterioration of the facility would occur or be accelerated	Less than Significant	None Required	Less than Significant
REC-2: The proposed project would not include recreational facilities or require the construction or expansion of additional recreational facilities that might have an adverse physical effect on the environment.	Less than Significant	None Required	Less than Significant
REC-3: Implementation of the proposed project would not in combination with past, present, and reasonably foreseeable projects, result in cumulative parks and recreation impacts in the area.	Less than Significant	None Required	Less than Significant
5.16 Transportation			
TRANS-1: The proposed project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.	Less than Significant		Less Than Significant
TRANS-2: Implementation of the proposed project may generate VMT levels inconsistent with CEQA Guidelines section 15064.3, subdivision (b) regarding policies to reduce VMT.	Potentially Significant	Non-Feasible	Significant and Unavoidable
TRANS-3: The project would not substantially increase hazards due to a geometric design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	Less than Significant	None Required	Less than Significant
TRANS-4: The project would not result in inadequate emergency access.	Less than Significant	None Required	Less than Significant
TRANS-5: Implementation of the proposed project would not, in combination with past, present, and reasonably foreseeable projects, result in a cumulative impact with respect to transportation.	Potentially Significant	Non-Feasible	Significant and Unavoidable

TABLE 1-1 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Environmental Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
5.17 Utilities and Service Systems			
UTIL-1: Sewer and wastewater treatment systems have adequate capacity to meet project requirements, and would not result in the need for new or expanded wastewater treatment facilities.	Less than Significant	None Required	Less than Significant
UTIL-2: Implementation of the proposed project would not result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.	Less than Significant	None Required	Less than Significant
UTIL-3: Water supply and delivery systems are adequate to meet project requirements.	Less than Significant	None Required	Less than Significant
UTIL-4: Implementation of the proposed project would not, in combination with past, present, and reasonably foreseeable projects, result in a cumulative impact with respect to water supply.	Less than Significant	None Required	Less than Significant
UTIL-5: Existing and/or proposed storm drainage systems are adequate to serve the drainage requirements of the proposed project.	Less than Significant	None Required	Less than Significant
UTIL-6: Implementation of the proposed project would not, in combination with past, present, and reasonably foreseeable projects, result in a cumulative impact with respect to stormwater facilities.	Less than Significant	None Required	Less than Significant
UTIL-7: Existing and/or proposed facilities would be able to accommodate project-generated solid waste.	Less than Significant	None Required	Less than Significant
UTIL-8: The proposed project would comply with federal, state, and local statutes and regulations related to solid waste.	Less than Significant	None Required	Less than Significant
UTIL-9: Implementation of the proposed project would not, in combination with past, present, and reasonably foreseeable projects, result in a cumulative impact with respect to solid waste facilities.	Less than Significant	None Required	Less than Significant

TABLE 1-1 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Environmental Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
5.18 Wildfire			
WILD-1: Development under the 2023-2045 General Plan Update could substantially impair an adopted emergency response plan or emergency evacuation plan.	Potentially Significant	**WILD-1:** Project applicants proposing development within a Very High Fire Hazard Severity Zone shall prepare a Traffic Control Plan to ensure that construction equipment or activities do not block roadways during the construction period. The Traffic Control Plan shall be submitted to the Redding Fire Department and Police Department for review and approval prior to approval of building permits	Less than Significant
WILD-2: Development under the 2023-2045 General Plan could exacerbate wildfire risks due to slope, prevailing winds, and other factors, thereby exposing project occupants to elevated particulate concentrations from a wildfire.	Potentially Significant	Non-Feasible	Significant and Unavoidable
WILD-3: The 2023-2045 General Plan would not require the installation and maintenance of associated infrastructure in areas that are undeveloped or vacant, which could exacerbate fire risk or result in temporary or ongoing impacts to the environment.	Less than Significant	None Required	Less than Significant
WILD-4: The proposed project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes	Less than Significant	None Required	Less than Significant
WILD-5: The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in less-than-significant cumulative impacts with respect to wildfire.	Potentially Significant	Implement Mitigation Measure WILD-1.	Significant and Unavoidable

This page intentionally blank

2. *Introduction*

2.1 PURPOSE OF THE ENVIRONMENTAL IMPACT REPORT

The California Environmental Quality Act (CEQA) requires that all state and local governmental agencies consider the environmental consequences of projects over which they have discretionary authority before acting on those projects. This draft environmental impact report (DEIR) has been prepared to satisfy CEQA and the CEQA Guidelines. The environmental impact report (EIR) is the public document designed to provide decision makers and the public with an analysis of the environmental effects of the proposed project, to indicate possible ways to reduce or avoid environmental damage and to identify alternatives to the project. The EIR must also disclose significant environmental impacts that cannot be avoided; growth inducing impacts; effects not found to be significant; and significant cumulative impacts of all past, present, and reasonably foreseeable future projects.

The lead agency means "the public agency which has the principal responsibility for carrying out or approving a project which may have a significant effect upon the environment" (CEQA § 21067). The City of Redding has the principal responsibility for approval of the City of Redding General Plan Update project. For this reason, the City of Redding is the CEQA lead agency for this project.

The intent of the DEIR is to provide sufficient information on the potential environmental impacts of the proposed City of Redding General Plan Update to allow the City of Redding to make an informed decision regarding approval of the projects. Specific discretionary actions to be reviewed by the City are described in Section 3.3.4, *Intended Uses of the EIR.*

This DEIR has been prepared in accordance with requirements of the:

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

The overall purpose of this DEIR is to inform the lead agency, responsible agencies, decision makers, and the general public about the environmental effects of the development and operation of the proposed City of Redding General Plan Update project. This DEIR addresses effects that may be significant and adverse; evaluates alternatives to the project; and identifies mitigation measures to reduce or avoid adverse effects.

2.2 NOTICE OF PREPARATION

The City of Redding determined that an EIR would be required for this project and issued a Notice of Preparation (NOP) on May 1, 2022 (see Appendix 2-1). Comments received during the NOP comment period, from May 13, 2022, to June 17, 2022, are in Appendix 2-1. Table 2-1, *Notice of Preparation Comment Letters,* summarizes the comments received during the public comment period. The NOP solicited comments from identified responsible and trustee agencies and interested parties regarding the scope of the Draft EIR.

TABLE 2-1 NOTICE OF PREPARATION COMMENTS

Agency/Organization/ Individual	Date	Summary of Comments	Section of EIR Comment is Addressed
Agency			
Native American Heritage Commission	5/20/2022	▪ The NAHC explains Assembly Bill 52 (AB 52) and Senate Bill 18 (SB 18) which both have tribal consultation requirements. ▪ The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of the proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. ▪ AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015. ▪ SB 18 applies to all California tribes and local governments that adopt or amend general plans or specific plans or create open space designations. ▪ NAHC recommends contacting the appropriate regional California Historical Research Information System (CHRIS) Center for an archaeological records search. ▪ NAHC recommends if an archaeological inventory survey is required then prepare a professional report detailing the findings and recommendations of the records search and field study. ▪ NAHC recommends contacting the NAHC for a Sacred Lands File search and a Native American Consultation List of appropriate tribes for consultation concerning the project site.	Section 5.17, *Tribal Cultural Resources* Section 5.5, *Cultural Resources*

Agency/Organization/ Individual	Date	Summary of Comments	Section of EIR Comment is Addressed
California Highway Patrol (CHP) Redding Area	6/10/2022	▪ The CHP states the proposed project would likely increase demand of public safety resources specifically increase vehicle traffic on State Route 299, SR-44, SR-273, Interstate 5, and unincorporated county roads within Shasta County. ▪ States the project could have a negative impact on CHP Redding Area operations due to the increased vehicle and pedestrian traffic, which will require additional traffic safety control measures to mitigate the potential impact. ▪ The CHP lists potential impact to its operations such as increased traffic, pedestrian and bicycle safety, increased heavy truck traffic, evaluate and revise school bus routing, additional enforcement demands, a reduction of CHP jurisdiction on local roads, and require collaboration between CHP Redding Communication Center Operations (RCC) and the Shasta Area Safety Communications Agency (ShasCom).	Chapter 3, *Project Description* Section 5.14, *Public Services* Section 5.16, *Transportation*
California Department of Fish and Wildlife	6/17/2022	▪ Recommends conducting a complete assessment on the flora and fauna within and adjacent to the project area. ▪ Suggests disclosing previous survey that are no less than two year old and conducting during blooming time for plants and wildlife. ▪ Recommends conducting surveys with a qualified botanist, use of CNDDB for sensitive species and habitat, use of USGS 7.5-minute topographic quadrangles. ▪ Recommends including other electronic databases for biological search of the area such as the California Native Plan Society and U.S. Fish and Wildlife Service. ▪ Recommends including a complete assessment of rare, threatened, and endangered invertebrate, fish, wildlife, reptile, and amphibian species in the DEIR. ▪ States Species of Special Concern (SSC) and Fully Protected animals during the environmental review process. ▪ Recommends a complete assessment of rare plants and natural communities following the Departments March 2018 Protocols for Surveying and Evaluating Impacts to Special Status Native Plan Populations and Natural Communities. ▪ Recommends including a detailed vegetation map and surveys with methods, dates, results, and should list all plant and animal species (with scientific names). ▪ States the DEIR should have a through discussion of direct, indirect, cumulative impacts, mitigation measures, clear thresholds of significance, present environmental conditions at local and regional level. ▪ States the DEIR should include alternatives aimed to avoid or minimize impacts to sensitive biological resources. ▪ Asks to include fuel modification impacts on vegetation in the biological resources section of the DEIR.	Section 5.4, *Biological Resources*

Agency/Organization/ Individual	Date	Summary of Comments	Section of EIR Comment is Addressed
		▪ States the DEIR must state whether the Project could result in any amount of incidental take of any CESA-listed species and encourages early consultation for incidental take permitting. ▪ States the DEIR should demonstrate that the Project will not result in a net loss of wetland habitat values or acreage and attach all wetland delineations.	
Bella Vista Water District	6/28/2022	▪ States that while the scoping meeting notice indicates that future urban growth will occur in areas where services exist or can be expanded, it does not address water supply.	Section 5.17, *Utilities and Service Systems*
Scoping Meeting			
Michele Goedert Planning Commissioner	5/24/2022	▪ Asked whether tree protection and management would be part of the General Plan Update.	Section 5.1 *Aesthetics,* and 5.4 *Biology*
Aaron Hatch Planning Commissioner	5/24/2022	▪ Asked whether the focus areas could be changed or modified.	Section 3.0 *Project Description*
Cameron Middleton	5/24/2022	▪ Asked how the focus areas were derived.	Section 3.0 *Project Description*

The City of Redding Planning Commission held a public scoping meeting, on May 24, 2022, to receive input from the community on the proposed scope of the EIR. The Planning Commissioners asked questions regarding the project focus areas and whether the General Plan would address trees. There were no questions from the public at the meeting. Appendix 2-1 of this Draft EIR, Notice of Preparation and Scoping Comments, contains the NOP as well as the comments received by the City in response to the NOP.

2.3 SCOPE OF THIS DEIR

This DEIR fulfills the requirements for a Program EIR. Although the legally required contents of a Program EIR are the same as for a Project EIR, Program EIRs are typically more conceptual than Project EIRs, with a more general discussion of impacts, alternatives, and mitigation measures with a focus on defining subsequent actions that will be needed before projects can move forward. According to Section 15168 of the CEQA Guidelines, a Program EIR may be prepared on a series of actions that can be characterized as one large project. Use of a Program EIR gives the lead agency an opportunity to consider broad policy alternatives and program-wide mitigation measures, as well as greater flexibility to address project-specific and cumulative environmental impacts on a comprehensive scale.

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

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

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

For a complete listing of environmental topics covered in this Draft EIR, see Chapter 5, *Environmental Analysis*.

2.4 INCORPORATION BY REFERENCE

The following documents are incorporated by reference in this DEIR, consistent with Section 15150 of the State CEQA Guidelines, and are available for review at the City of Redding.

- Public Review Draft General Plan
- 2020-2028 Housing Element
- Redding Municipal Code

2.5 FINAL EIR CERTIFICATION

Upon completion of the 45-day review period, the City will review all written comments received and prepare written responses for each comment. A Final EIR will be prepared that incorporates all of the comments received, responses to comments raising environmental issues, and any changes to the Draft EIR. The Final EIR will be presented to the Planning Commission for a recommendation on EIR certification

and to the City Council for potential certification as the environmental document for the proposed project. Public input is encouraged at all public hearings before the Planning Commission and City Council.

All persons who commented on the Draft EIR will be notified of the availability of the Final EIR and the date of the public hearings before the Planning Commission and the City Council. All responses to comments submitted on the Draft EIR by agencies will be provided to those agencies at least 10 days prior to certification of the Draft EIR.

2.5.1 FINDINGS

The Project is considered a legislative action and the final decision will be made by the City Council after receiving a recommendation from the Planning Commission. The City Council will make findings regarding the extent and nature of the environmental impacts as presented in the Final EIR.[1] The findings will be based in large part on the information in this Draft EIR, but may also include other supporting information in the public record for the Project, such as public testimony, staff reports, applicant submittals, letters to the City, etc.

The City Council will require the mitigation measures specified in this Draft EIR to be incorporated into the General Plan as development policies and may establish other/additional policies that help reduce environmental impacts to a less-than-significant level, and require other feasible mitigation measures that arise out of the public review and comment process. However, environmental impacts that cannot be mitigated to a level considered less than significant are considered significant unavoidable impacts. For instance, the City Council may find that the mitigation measures are outside the jurisdiction of the City to implement or that no feasible mitigation measures have been identified for a given significant impact. In such cases, the City Council may nonetheless determine that the proposed project is necessary or desirable due to specific overriding considerations, including economic factors, and may approve the proposed project despite an unavoidable, significant impact. This information will be included in the findings for the proposed project. This is termed a “statement of overriding considerations”.

The findings will accompany staff materials to the Planning Commission and Council to consider this EIR and the proposed project. The Final EIR will need to be certified as complete by the City prior to any decision to approve the proposed project. The proposed project can be denied if the EIR is not certified.

2.5.2 CONSIDERATION OF THE PROPOSED PROJECT

After the City Council certifies the Final EIR, it may consider the proposed project itself, which it may approve as presented in this EIR, approve in part, approve with conditions, or deny. The certification of this EIR does

[1] CEQA Section 15091.

not approve any component of the proposed project. The approval of the 2023-2045 General Plan Update may occur separately from the certification of the EIR, if at all.

2.5.3 MITIGATION MONITORING

A mitigation monitoring and reporting program (MMRP) must be adopted if the proposed project is approved.[2] This ensures that the mitigation measures required by the EIR, as well as any project design features that are essential to reducing an environmental impact, are carried through with implementation of the Project. Although the MMRP is not required to be part of the EIR, the information used to create it will be included in the EIR, and the MMRP will be an attachment to the staff report sent to the Planning Commission and City Council for consideration of the proposed project.

[2] CEQA Section 15091(d).

This page intentionally left blank.

3. Project Description

3.1 PROJECT LOCATION

The City of Redding's Planning Area and Sphere of Influence are in south-central Shasta County. Adjacent to the north is the City of Shasta Lake. The City of Anderson is located approximately 10 miles south of Redding. Redding is principally bordered by unincorporated Shasta County lands. Interstate and regional access to the city is provided by Interstate 5 (I-5), which runs in a general north-south direction and bisects the city. State Route 299, an east/west facility, also bisects the city. State Route 44 begins in Redding and runs east toward Lassen Volcanic National Park. Rail freight access is provided by the Union Pacific Railroad; Amtrak provides daily passenger service north and south of Redding. Commercial air service is available at the Redding Municipal Airport. Figure 1-1, *Regional Location,* shows the General Plan area in its regional context.

3.2 PROJECT OBJECTIVES

The following objectives for the City of Redding General Plan Update will aid decision makers in their review of the project and associated environmental impacts:

- Advance the City's vision for a resilient, equitable, and healthy community with high-quality development within its urban centers and corridors.
- Maintain the existing land use classifications of the existing General Plan Diagram while addressing the use of development incentives to spur new infill development/redevelopment consistent with the existing land use classifications.
- Encourage a more compact urban form by reducing the Planning Area to a more realistic growth boundary.
- Establish thresholds and maintain roadway and intersection levels of service for the public's health and convenience while striving to minimize increases in vehicle miles travelled from new development.
- Provide park and recreation opportunities throughout the community, including those areas where facilities and services are not available.
- Work with appropriate agencies and organizations to increase resident's access to healthcare, healthy food, transportation options, public services, housing, and healthy neighborhoods.

3.3 PROJECT CHARACTERISTICS

3.3.1 OVERVIEW OF THE PROPOSED PROJECT

The 2023-2045 General Plan Update (proposed project) is an update to the City of Redding's adopted General Plan. The General Plan is a state-required legal document that provides guidance to decision-makers regarding the allocation of resources and determining the future physical form and character of development in the City and its Sphere of Influence (SOI). It is the official statement of the city regarding the extent and types of development needed to achieve the community's physical, economic, social, and environmental goals.

The proposed project includes comprehensive updates to the required elements under the State Planning and Zoning Law, as well as other optional elements that the City has elected to include in its General Plan. Note that the Housing Element is not being updated as it is certified until 2028 from the state Department of Housing and Community Development. In addition, a new Community Health, Wellness, and Environmental Justice Element would be adopted to address the requirements of SB 1000- Environmental Justice in Local Land Use Planning. Environmental Justice topics would also be included in the policies of various other elements of the General Plan. Furthermore, under the proposed project, the City's existing Air Quality Element would be eliminated and reincorporated into the proposed Natural Resources Element (see Section 3.3.3, *Changes Under the Proposed Project*).

Each element includes goals and policies that are based, in part, on creating an equitable, sustainable, and livable community of neighborhoods, and provides updates based on State and local law, and other considerations.

The 2023-2045 General Plan is updating the following elements:

- Community Development and Design Element
- Transportation Element
- Natural Resources Element
- Public Safety Element
- Noise Element
- Parks, Trails, and Recreation Element
- Economic Development Element
- Public Facilities and Services Element
- Community Health, Wellness, and Environmental Justice Element

The proposed project will identify long-term goals; provide a basis for decision-making; provide citizens a forum for input on their community's direction; and inform citizens, developers, decision-makers, and other cities and Shasta County of the expectations for development. Each proposed element would include goals and policies that are based, in part, on creating an equitable, sustainable, and livable community of neighborhoods, and provides updates based on State and local laws, and other considerations.

Additionally, the Development Code would need to be updated in the future as may be necessary to reflect the policy direction and development incentives addressed in the General Plan Update, although such updates are anticipated to be minimal in scope. However, it should be noted that the City's existing land use plan would not be altered as part of the proposed project. The existing land use designations in the proposed Redding Planning Area (see Section 3.2.2, *Proposed Project*, Planning and Growth Areas), as shown in Figure 1-3, *Existing Land Use Plan*, would remain the same under the proposed project.

3.3.2 PLANNING BOUNDARIES AND GROWTH AREAS UNDER PROPOSED PROJECT

The proposed project would provide the long-term planning blueprint for the improvements needed to house the City's growing population and needed services and industry over through 2045. As noted below in Table 3-2, *2045 General Plan Planning Horizon*, the City could potentially grow from its current population, as modeled under the Shasta Regional Transportation Agency (SRTA) travel demand model, of approximately 106,816 in 2020 to a population of approximately 124,544 in 2045, based on projections prepared within the travel demand for the City of Redding.[1] The current City Limits contains adequate vacant sites zoned for housing, commercial services, and industrial uses to serve a much larger population. The new growth is focused in areas of the city where services exist or can be expanded/extended to serve additional and more intensive development where appropriate.

3.3.2.1 PLANNING AND GROWTH AREAS

The "Planning Area" of a city is generally considered as the area directly addressed by the general plan. A city's Planning Area typically encompasses the city limits and potentially annexable land within its Sphere of Influence (SOI). Consideration may also be given to areas outside the jurisdiction where the jurisdiction's infrastructure and/or planning efforts may impact areas outside of the realm of future annexations. Development under the 2023-2045 General Plan would occur in a Planning Area footprint that is smaller (i.e., approximately 24 square mile reduction) than that of the 2000-2020 General Plan. The 2023-2045 General Plan Planning Area will largely match the boundary of the City's current Sphere of Influence. However, as with the current General Plan's Planning Area, the Churn Creek Bottom is still included given that Redding surrounds the area on three sides, and it is influenced to some degree by City activities and planning efforts, such as the Redding Municipal Airport and access to the Stillwater Business Park.

The 2000-2020 General Plan also designated Primary and Secondary Growth Areas within the City's SOI. The Primary Growth Area consists of lands within the corporate boundaries of the City well as contiguous areas and "County islands" that are adjacent to already developed areas. The Secondary Growth Area encompasses the balance of the lands within the SOI that the City has determined are appropriate for future

[1] Note that the existing population in 2020 provided here is based on the Shasta Regional Transportation Agency's ShastaSIM travel demand model (explained further below), as shown in Table 3-2, *2045 General Plan Planning Horizon Forecast.* The existing population in the City of Redding, as provided by the Department of Finance's (DOF) E-5 City/County Population and Housing Estimates, is 92,465 in 2023.

urbanization and annexation to the City. Under the 2020-2045 General Plan, the designated Primary and Secondary Growth Areas would eliminate certain areas within the SOI that have already been subdivided in the County which would prevent a more urban development style to be established, and those which are primarily floodplain lands (typically in the Stillwater basin). The adjustments would also designate Shasta College and areas to its north and west as a primary growth area to reflect exploratory discussions with property owners and Shasta College regarding potential future annexation and the potential availability of urban services. Other minor growth area adjustments that recognize steep topography areas along the City's western boundary have also been proposed.

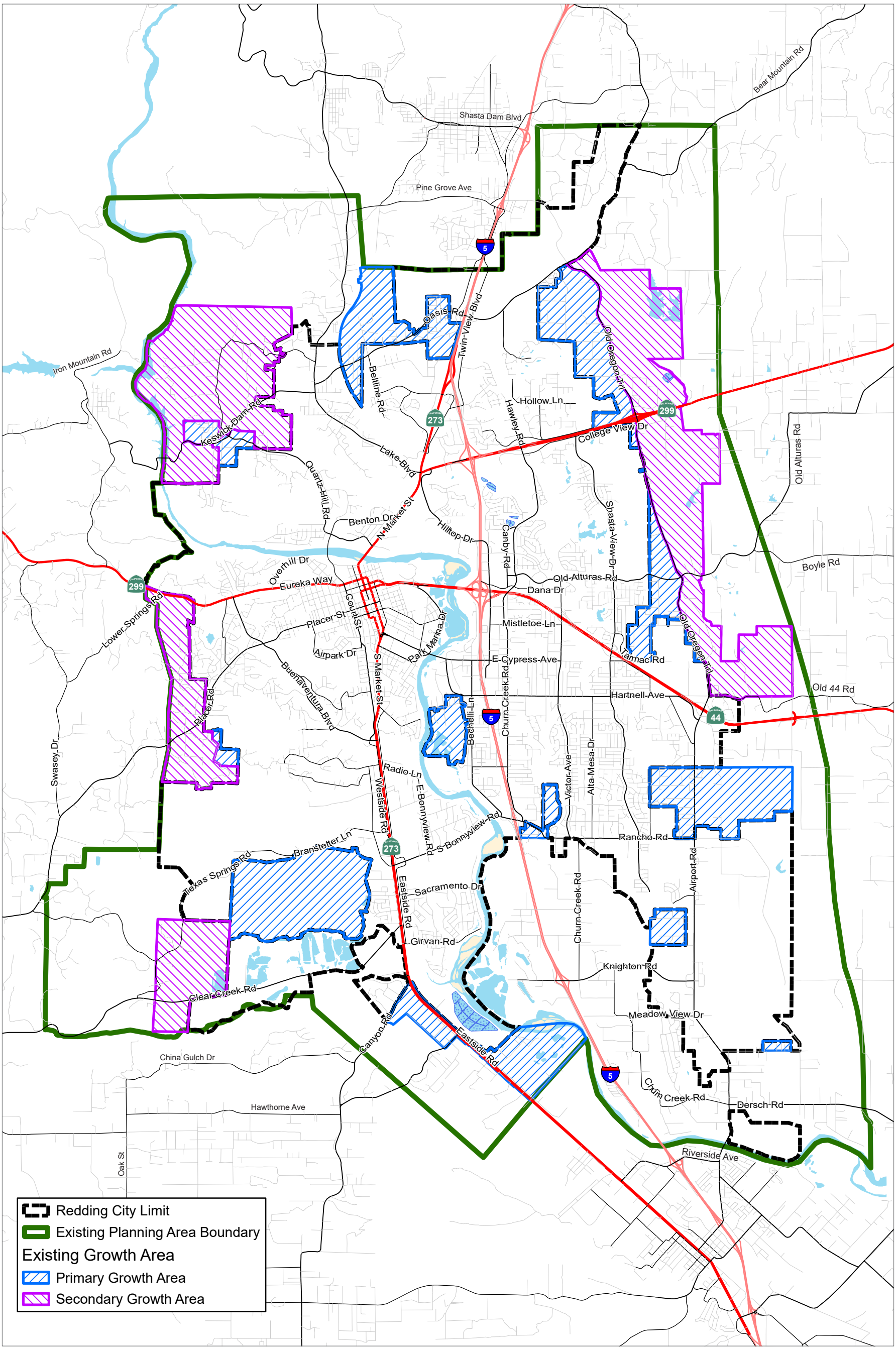
The existing and proposed Planning and Growth Areas are shown in Figure 3-1, *Existing Planning and Growth Areas,* and Figure 3-2, *Proposed Planning and Growth Areas,* respectively. A comparison between the land included in the existing vs. proposed planning boundaries, which include the Planning Area, SOI, City limits, and growth areas, is shown in Table 3-1, *Planning Boundaries*.

TABLE 3-1 PLANNING BOUNDARIES

Planning Boundaries	Acres		
	Existing	Proposed	Difference between Proposed and Existing
Planning Area	74,512	61,223	-13,289
Sphere of Influence	55,135	49,427	-5,708
Current City Limits	39,040	39,040	--
Primary Growth Areas	6,288	6,835	-547
Secondary Growth Areas	7,419	4,185	-3,234

Source: City of Redding GIS 2022

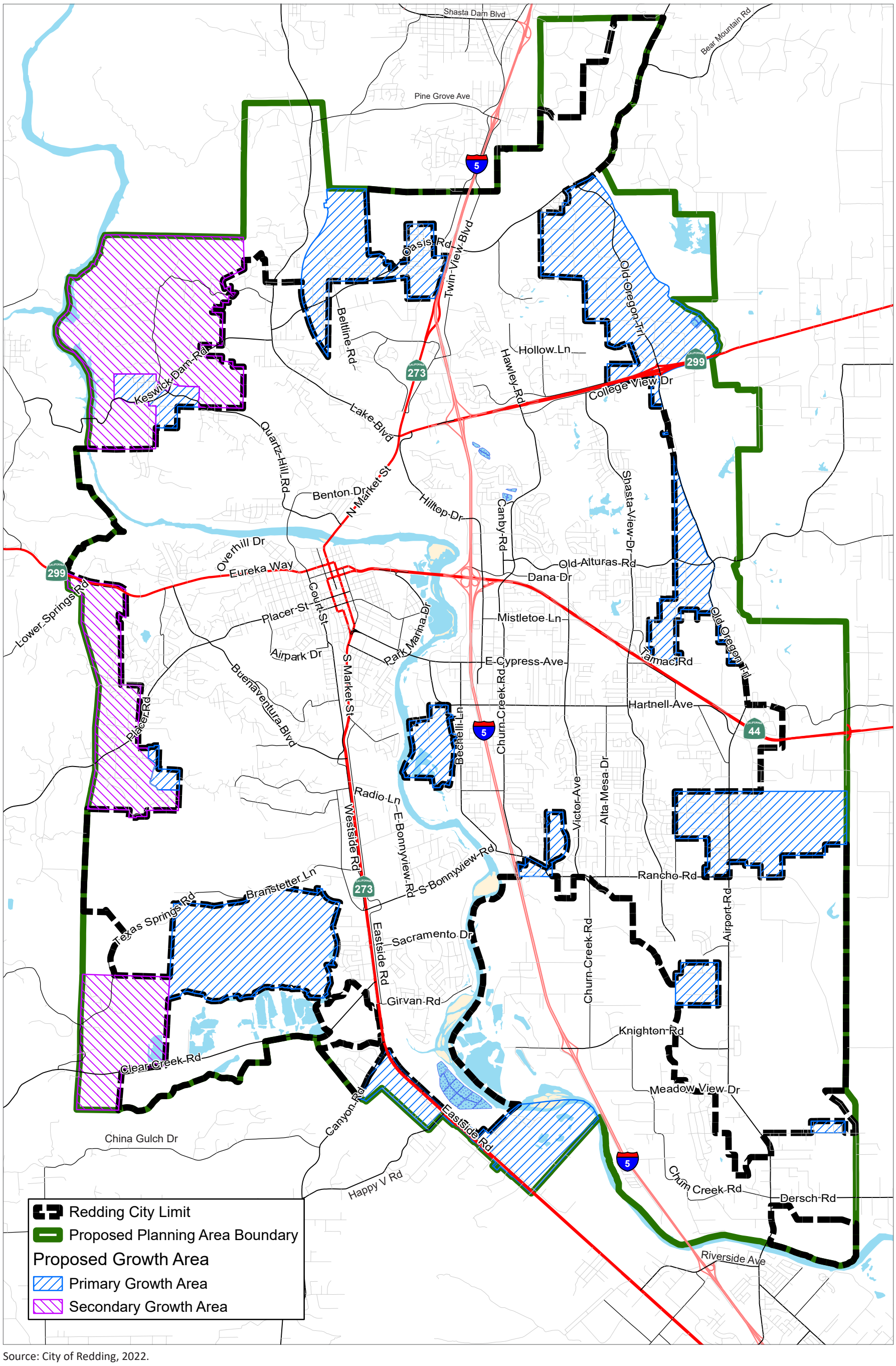
As noted above, the General Plan Diagram (i.e., land use map), which is shown in Figure 1-3, would not be modified by the General Plan update. Existing land use classifications and configurations would remain unaffected.



Source: City of Redding, 2022.

Figure 3-1
Existing Planning and Growth Areas

3. PROJECT DESCRIPTION



Source: City of Redding, 2022.

0 2
Scale (Miles)

Figure 3-2
Proposed Planning and Growth Areas

3.3.2.2 OPPORTUNITY AREAS

Additionally, there are areas to accommodate redevelopment of a number of existing commercial centers as well as redevelopment along arterial street corridors. Redevelopment of these centers and corridors may result in a larger range of neighborhood and community services and/or additional residential uses. These "Opportunity Areas" are generally depicted in Figure 3-3*, Opportunity Areas* and include Hartnell and Victor Avenues, Bechelli Lane, South Market Street. The proposed General Plan Update would include several policies intended to incentivize private redevelopment in these areas, which may include, but are not limited to, affordable housing funds, installation of property street frontage improvements as part of the City's Active Transportation Program (ATP), use of Development Impact Fees at appropriate locations, general street and utility maintenance activities, installation of planned sewer and water line capacity improvements, and reciprocal or joint-use parking allowances. Further development/redevelopment would be at the discretion of property owners and not required by the policies and implementation of the General Plan.

3.3.2.3 FOCUS AREAS

The existing General Plan identifies 10 Focus Areas where neighborhood-specific policies or guidelines are provided. Under the proposed project, the following Focus Areas would be eliminated:

- Stillwater Focus Area
- Clover Creek Focus Area
- Victor Avenue Focus Area
- Hilltop/Dana Drive Focus Area

Figure 3-4, *Focus* Areas*,* shows the Focus Areas that would remain under the proposed project as well as proposed new focus areas:

- Downtown Focus Area
- Riverfront Focus Area (formerly the Park Marina Focus Area)
- North Market Street Focus Area
- Magnolia Neighborhood Focus Area
- Parkview Neighborhood Focus Area
- California-Trinity Focus Area
- Garden Tract Focus Area
- Redding Regional Airport Environs Focus Area
- Oasis Road Specific Plan Focus Area

As with the General Plan Diagram (see Figure 1-3), neither the Focus Areas or the Opportunity Areas contain mandatory land use changes.

3.3.3 CHANGES UNDER THE PROPOSED PROJECT

3.3.3.1 COMMUNITY DEVELOPMENT AND DESIGN ELEMENT

The City of Redding Community Development and Design Element (referred to as a "Land Use Element" in the California Government Code), provides the foundation for all other elements in the General Plan. The key component of the Community Development and Design Element is the General Plan Diagram, which along with the policies and implementation strategies in the element, determine the location, intensity, design, and quality of new development and guide the preservation of natural resources that are key to Redding's identity. While the proposed Community Development and Design Element does not propose any changes to the City's current General Plan Diagram, this element does describe changes to the City's planning boundaries including modifications to the Planning Area boundary to reflect the adopted Sphere of Influence more closely, as discussed in Section 3.3.2, *Planning and Growth Areas Under the Proposed Project*.

The proposed Community Development and Design Element also includes the following changes from the existing element:

- Additional policies calling for the additional identification and protection of the City's historic resources and buildings.
- Additional policy guidance to incentivize infill development to accommodate future housing needs in a manner that complements, to the extent possible, existing neighborhoods.
- Additional policy guidance leading to commercial developments that are better designed both architecturally and for pedestrian access.
- Identification of several Opportunity Areas (see above) and policy guidance related to the potential revitalization of underdeveloped commercial centers.

3.3.3.2 COMMUNITY HEALTH, WELLNESS AND ENVIRONMENTAL JUSTICE ELEMENT

The Community Health, Wellness, and Environmental Justice Element is new element under the 2023-2045 General Plan Update that is intended to address potential Environmental Justice concerns in the City per the direction of SB 1000 (Government Code section 63502(h)). This element includes goals and policies crafted to address improving environmental health, access to housing, health care, and healthy food, creating safe and cohesive neighborhoods, responding to extreme weather events, and providing access to parks, recreation, and open space.

The new Community Health, Wellness, and Environmental Justice Element would also include the following components:

- Policies that seek direct working with Redding's more vulnerable residents and provide meaningful opportunities to engage them in planning and similar community processes.

Opportunity Areas
Redding City Limit

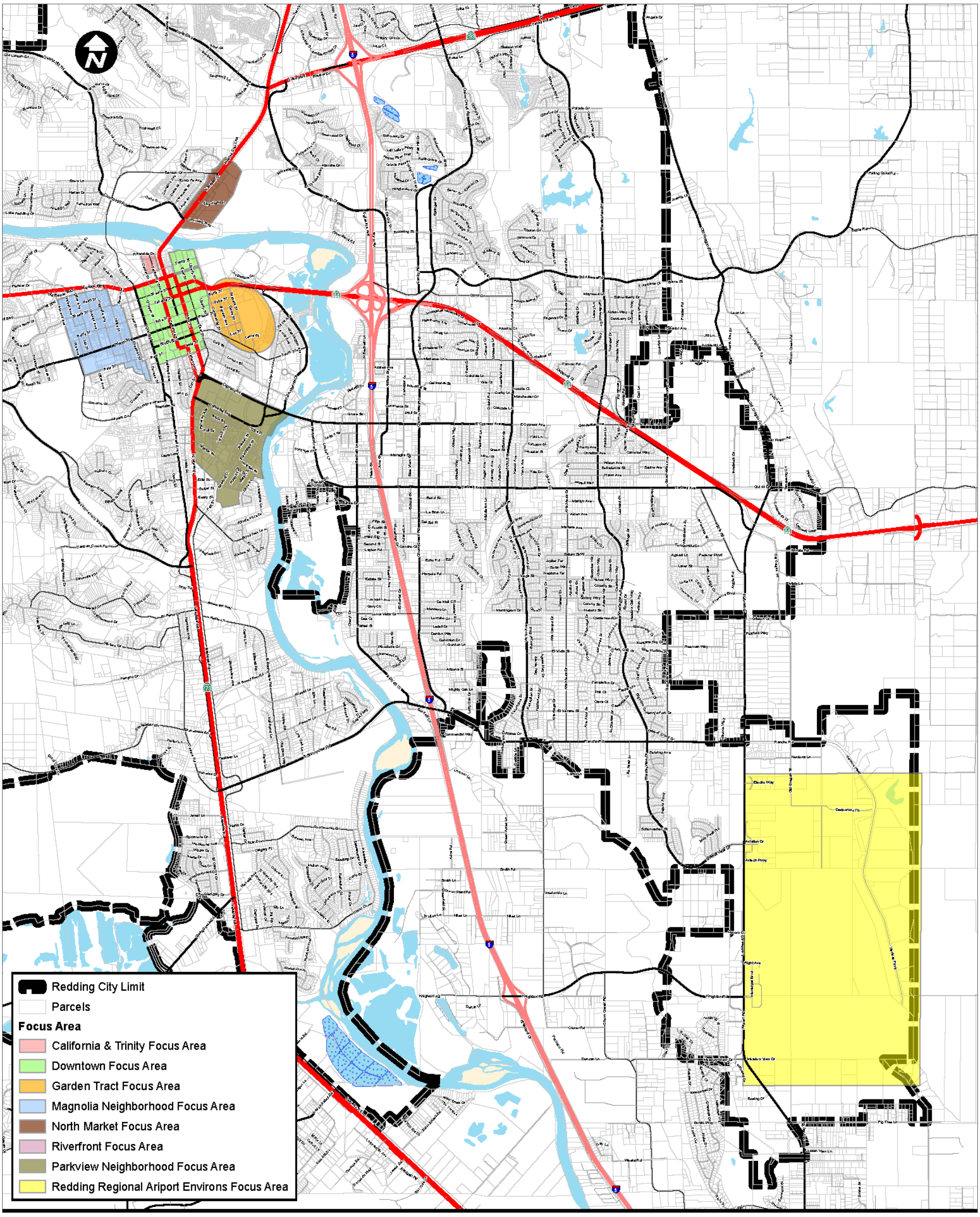
Source: City of Redding, 2023.

0 0.5
Scale (Miles)

Figure 3-3
Opportunity Areas

This page intentionally left blank.

3. PROJECT DESCRIPTION



Source: City of Redding, 2022.

Figure 3-6
Focus Areas

This page intentionally left blank

- Policies that provide guidance on working with community members to help mitigate or address impacts associated with extreme temperatures, wildfire smoke, and similar conditions.
- Policies that address the need to prioritize upgrades to municipal services and infrastructure, including parks and trees, to older neighborhoods as appropriate.
- Policies that direct the City to work more closely with local agencies to help provide better access to heathy food and medical services.

3.3.3.3 ECONOMIC DEVELOPMENT ELEMENT

The Economic Development Element includes goals and policies that recognize the growing scope of economic development by addressing broader areas such as workforce, quality of life and place, equity, and technology, in addition to the traditional economic development metrics like number of jobs created. The primary function of this element is to establish a framework that will guide consistent and equitable economic growth and direct the focus of policymaking to address the expanding scope of economic development. The proposed element contains various strategies to attract “primary industries”, cultivating an adaptable and well-trained workforce, and supporting expansion of the healthcare industry and digital economic opportunities are provided.

3.3.3.4 NATURAL RESOURCES ELEMENT

The Natural Resources Element helps to guide the protection and preservation of natural resources in the Planning Area including the Sacramento River, creeks, ponds, wetlands, vernal pools, and groundwater resources; a variety of vegetation types and communities; wildlife; archaeological, historical, cultural, and aesthetic resources; mineral resources; and agricultural lands. This element seeks to balance the need to accommodate growth with the need for conservation, protection, and enhancement of the area's natural resources.

The proposed Natural Resources Element includes the following changes from the existing element:

- Additional policy guidance on the City’s native tree resources, including consideration of establishing an urban forestry program.
- Policies that better recognize and protect cultural resources and the importance of working more closely with local Wintu tribes.
- The current Air Quality Element would be eliminated and its provisions incorporated into the Natural Resources Element. This element also includes consideration of adopting a climate action and resiliency plan for the City.

3.3.3.5 NOISE ELEMENT

The Noise Element helps with planning the location of planned noise- sensitive land uses and considers noise exposure when placing facilities that generate significant volumes of noise. Topics addressed in the Noise Element include measurements of existing noise conditions; roadway, rail, and airport noise; transportation noise contours; vibration; and stationary noise sources.

The proposed Noise Element includes the following changes from the existing element:

- New measurements of ambient noise levels throughout the Planning Area
- New standards for maximum acceptable exterior noise levels from transportation sources that specify allowable noise levels based on land use type
- Updated transportation noise contours for current and future noise conditions
- New policy directing updates to Noise Ordinance for allowing increased noise levels in outdoor activity hubs including the Downtown Core and Civic Auditorium/Rodeo Grounds/Turtle Bay Exploration Park area.

3.3.3.6 PARKS, TRAILS, AND RECREATION ELEMENT

The Parks, Trails, and Recreation Element meets the state's requirements for Open Space Elements and includes goals and policies designed to address the primary recreation and park development issues in the Planning Area. The goals, policies, and exhibits contained in the Element serve as the framework for meeting the City's ongoing park and recreation needs. No major changes in policy direction are proposed under the proposed Parks, Trails, and Recreation Element. Policies have been updated as appropriate to reflect the most recent provisions of the Parks, Trails, and Open Space Master Plan.

3.3.3.7 PUBLIC FACILITIES AND SERVICES ELEMENT

The Public Facilities and Services Element is intended to guide provision of public facilities and services in the Planning Area. It contains facility descriptions, service level standards, and goals and policies designed to support infill and smart growth strategies to assist the City Council, advisory bodies and the city management team with decisions related to staffing and the construction/improvement of public facilities. The proposed element includes minor changes to the policies and primarily updates program descriptions and data for the existing conditions, as necessary.

3.3.3.8 PUBLIC SAFETY ELEMENT

The Public Safety Element is intended to identify potential hazards that must be considered when planning the location, type, and density of development throughout the Planning Area, and to the extent feasible, provide guidance to mitigate the various identified risks. Like the City's existing Safety Element, the proposed Public Safety Element addresses seismic hazards, flood hazards, dam failure and inundation, urban and wildland fire hazards, crime prevention, airport-related hazards, emergency response, hazardous materials, critical facilities, evacuation routes, and extreme weather.

The proposed Public Safety Element includes the following changes from the existing element:

- Additional policy guidance addressing the potential for wildland fire damage and destruction.
- Additional policy guidance for maintaining public safety by considering expanding various programs including the Community Oriented Policing Services (COPS), the Crisis Intervention Response Team (CIRT), and the park ranger and bike patrol programs.

3.3.3.9 TRANSPORTATION ELEMENT

The Transportation Element addresses the street and transportation network and the movement of people and goods within the City of Redding. It establishes a plan for the transportation system to serve all members of the community. The transportation system shapes community life by linking friends to friends, people to jobs, homes to shopping, businesses to supplies, and families to entertainment. As such, the Transportation Element provides goals, policies, and implementation measures to guide the prioritization of future investments and maintenance.

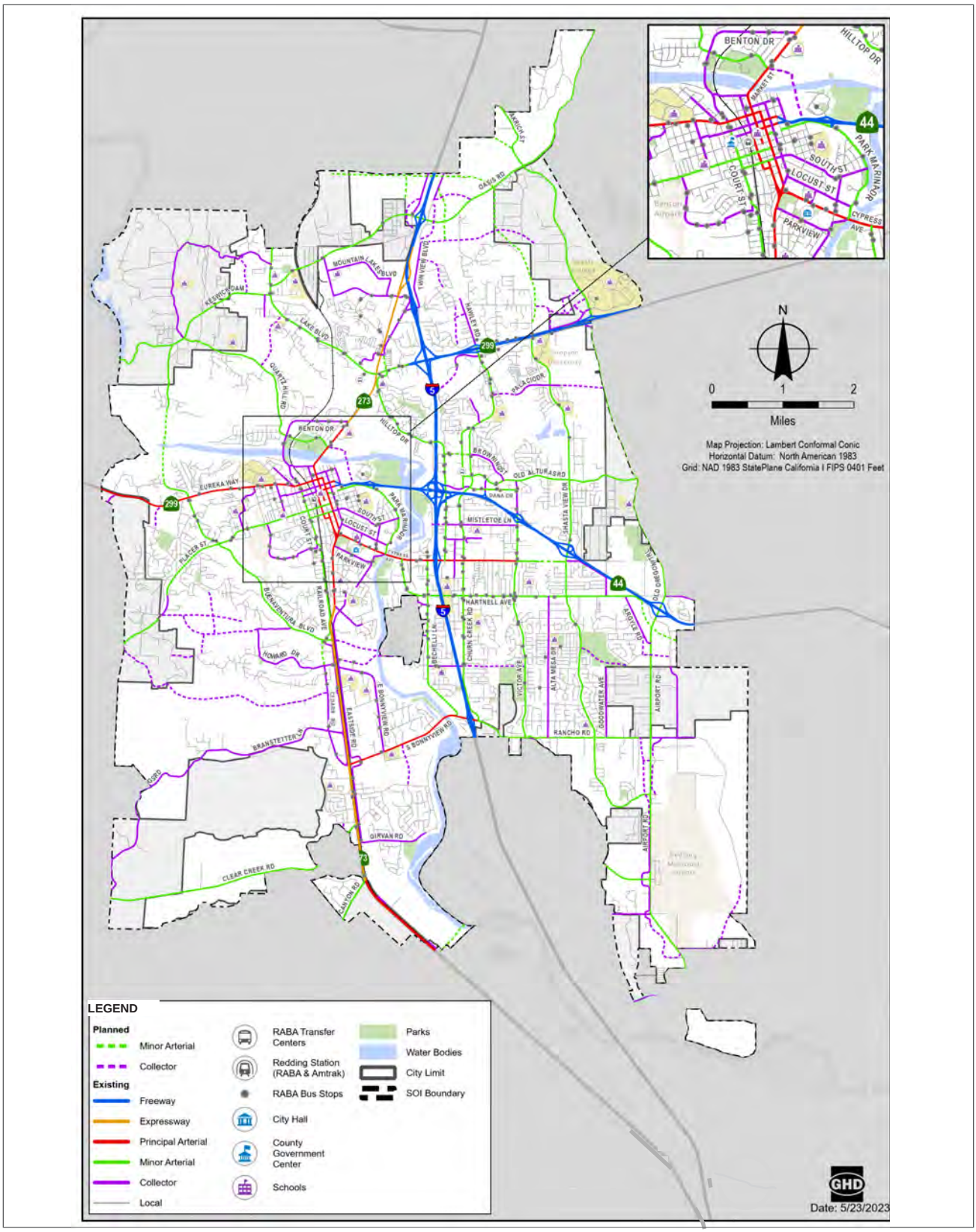
An important feature of all new development is that street improvements accommodate all modes of travel, i.e., Complete Streets. Where reasonable, all new development would connect to existing paths, trails, and roadways. Among the concepts for modifications shown in Figure 3-5, *Circulation Plan,* to the City's roadways are:

- Expanded use of roundabouts at appropriate locations.
- Reducing arterial street improvement width where analyses indicate that currently planned improvements are not warranted. Right-of-way widths will be retained in the event that reconfiguration of these streets to accommodate future traffic volumes is needed.
- Addressing long-term street maintenance needs.
- Ensuring adequate bicycle pedestrian, bus, and similar multimodal facilities can be accommodated.
- Construction of one or more of "diverging diamond" interchanges where appropriate and supported by Caltrans.
- Addressing micro-mobility options.

In addition to providing this additional guidance to continue the development of Complete Streets in Redding, the proposed Transportation Element would also include in the following updates:

- Prioritization of the development of low-stress walk and bikeways
- Level of Service (LOS) thresholds to address public safety and convenience concerns while implementing Vehicle Miles Travelled (VMT) CEQA requirements.

This page intentionally left blank.



Source: GHD 2023

0 2
Scale (Miles)

Figure 3-5
Circulation Plan

This page intentionally left blank.

3.3.4 FORECASTED GROWTH UNDER THE PROPOSED PROJECT

Table 3-2, *2045 General Plan Planning Horizon Forecast* shows the projected growth within the City limits and SOI through the year 2045. This forecast incorporates the Approved/Pending projects and the potential multi-family residential growth in Opportunity Areas in addition to the land uses currently allowed under the General Plan. The Planning Horizon forecast was developed as part of the VMT analysis based on the methodology of SRTA's ShastaSIM 1.2 Activity Based Travel Demand Model. The output of this model can be referenced in Appendix 3-2*, Redding 2023-2045 General Plan Planning Horizon Forecast Model*. The travel model demand model was last updated in 2018 but has been adjusted to reflect actual year 2020 conditions based on development that had occurred in the City since the 2018 travel demand model was prepared.

Since these estimates and projections are based on the SRTA regional travel demand model, it should be noted that the estimates for the existing dwelling units, employment, students, and population in the City and SOI do not reflect the estimates of these factors from other authoritative sources including the Census Bureau and California Department of Finance. For example, the population of the City of Redding reported in the 2020 Census was 93,611 and similarly, the Department of Finance's E-5 City/County Population and Housing Estimates reported a population of 93,836 for the City in 2020 (US Census 2020, DOF 2023). As shown in Table 3-2, the estimated population of the City of Redding based on the ShastaSIM model's dwelling unit output and the DOF's average persons per household in 2020 is 106,816, which is approximately 14 percent larger than the City's population reported under the Census. For the purposes of this EIR, the use of the regional travel demand model's growth projections to forecast the growth expected under the proposed project is intended to show consistency with the assumptions used to generate the VMT estimates discussed in Section 5.16, Transportation. This growth forecast is therefore conservative.

Furthermore, because there are many other factors that influence the density and timing of development (e.g., community growth rates, building construction costs, cost of installing utility infrastructure; cost of completing roadway improvements, regulatory controls, economic conditions, property owner decisions, and other market forces), it is unlikely that the full extent of the growth shown in Table 3-2 will occur by 2045. These growth forecasts demonstrate one potential scenario of growth over the horizon of this General Plan Update under the assumption that the City will continue to grow within its proposed Planning Area.

TABLE 3-2 2045 GENERAL PLAN PLANNING HORIZON FORECAST

	2020 (Existing)			2045 (General Plan)			Growth (2020-2045)		
	Redding City	SOI	Total	Redding City	SOI	Total	Redding City	SOI	Total
Housing									
Single-Family	30,326	3,372	33,698	35,543	3,722	39,265	5,217	350	5,567
Multi-Family (2-4 units)	4,443	141	4,584	4,669	141	4,810	226	-	226
Multi-Family (5+ units)	7,592	130	7,722	9,505	490	9,995	1,913	360	2,273
Mobile Home	1,961	972	2,933	1,961	972	2,933	-	-	-
Dwelling Units	**44,322**	**4,615**	**48,937**	**51,678**	**5,325**	**57,003**	**7,356**	**710**	**8,066**
Employment									
Education	1,698	1,214	2,912	2,043	1,352	3,395	345	138	483
Food	3,554	52	3,606	3,738	146	3,884	184	94	278
Government	5,624	352	5,976	5,953	352	6,305	329	-	329
Industrial	4,903	1,155	6,058	7,380	1,427	8,807	2,477	272	2,749
Medical	7,764	62	7,826	8,585	122	8,707	821	60	881
Office	10,096	633	10,729	11,590	736	12,326	1,494	103	1,597
Retail	7,649	329	7,978	8,033	379	8,412	384	50	434
Service	8,015	816	8,831	9,807	819	10,626	1,792	3	1,795
Other	1,475	188	1,663	2,583	315	2,898	1,108	127	1,235
Employment	**50,778**	**4,801**	**55,579**	**59,712**	**5,648**	**65,360**	**8,934**	**847**	**9,781**
Students									
Grade School	12,114	729	12,843	15,664	1,129	16,793	3,550	400	3,950
High School	7,273	-	7,273	7,573	-	7,573	300	-	300
University	1,728	14,830	16,558	1,728	16,230	17,958	-	1,400	1,400
School Enrollment	**21,115**	**15,559**	**36,674**	**24,965**	**17,359**	**42,324**	**3,850**	**1,800**	**5,650**
Population[1]									
	106,816	**11,122**	**117,938**	**124,544**	**12,833**	**137,377**	**17,728**	**1,711**	**19,439**

Source: GHD 2022 (Appendix 3-2)

[1] Population generated by multiplying the Department of Finance's 2020 E-5 Population Estimates for persons/household in Redding (2.41) by the total number of projected dwelling units

3.3.5 PROJECT PERMITS AND APPROVALS

The proposed project would be adopted solely by the City of Redding. Future development would need to conform to applicable development and design standards and be consistent with the General Plan Update policies. Depending on the proposal, a future development project may be exempt from CEQA review because a CEQA exemption applies or the approval is ministerial,[2] or a project may require further environmental review and subsequent analysis in a negative declaration, mitigated negative declaration, or environmental impact report. Projects may be ministerial and require no discretionary action or may require review and approval by the Planning Division, the Board of Administrative Review, the Planning Commission, and/or City Council, and other agencies, as needed. Permits would be needed for the construction of all structures, to allow for certain uses or events within the General Plan Area, and to approve encroachments in the right-of-way.

Additionally, the following would be required to be adopted to implement the proposed project:

- Certify the EIR
- Adopt the General Plan
- Modify the Development Code to reflect the changes in the General Plan

3.3.6 INTENDED USES OF THIS EIR

This is a Program EIR that examines the potential environmental impacts of the proposed project. This DEIR also addresses various actions by the City to adopt and implement the General Plan Update. This EIR serves as a Program EIR under CEQA Guidelines Section 15168. According to CEQA Guidelines 15168(b), use of a Program EIR can provide advantages, including:

1. Provide an occasion for a more exhaustive consideration of effects and alternatives than would be practical in an EIR on an individual action.
2. Ensure consideration of cumulative impacts that might be slighted in a case-by-case analysis.
3. Avoid duplicative reconsideration of basic policy considerations.
4. Allow the Lead Agency to consider broad policy alternatives and program-wide mitigation measures at an early time when the agency has greater flexibility to deal with basic problems or cumulative impacts.
5. Allow reduction in paperwork.

As a Program EIR, this document focuses on the overall effects of the proposed project. The analysis does not examine the effects of any potential specific projects that may occur during the planning horizon. Further, the nature of general plan is such that some proposed policies are intended to be more qualitative, with specific details to be determined upon development of a specific project. No development or

[2] Projects may be ministerial, which means they do not require any discretionary review.

subdivision maps are being requested as a part of this project. Any impacts associated with subdivision or development that are not fully evaluated within the scope of this EIR may require further environmental analysis. However, the City envisions that this Program EIR may be used to eliminate or reduce the scope of future environmental review for individual projects that are consistent with the General Plan pursuant to CEQA Guidelines Section 15183 and other streamlining provisions authorized by CEQA.

It is the intent of this DEIR is to evaluate the environmental impact of the project, thereby enabling the City, other responsible agencies, and interested parties to make informed decisions with respect to the requested entitlements.

3.4 REFERENCES

Department of Finance (DOF). 2023. E-5 Population and Housing Estimates for Cities, Counties and the State 2020-2023. https://dof.ca.gov/forecasting/demographics/estimates/e-5-population-and-housing-estimates-for-cities-counties-and-the-state-2020-2023/

Redding, City of. 2022, March 23. Modifying the General Plan Planning Area Boundary.

US Census. 2020. Total Population in Redding City. https://data.census.gov/all?q=redding

This page intentionally left blank.

4. Environmental Setting

4.1 INTRODUCTION

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

4.2 REGIONAL ENVIRONMENTAL SETTING

4.2.1 REGIONAL LOCATION

The City of Redding's Planning Area is in southwestern Shasta County, California, and is bordered by the City of Shasta Lake to the north, unincorporated lands in Shasta County in all other directions. Interstate and regional access to the City is provided by Interstate 5 (I-5), which runs in a general north-south direction through the City. State Route 299 (SR-299) provides access to the City from the west and State Route 44 (SR-44) provides access from the east and merges with SR-299 within the City. State Route 299 also provides access to the City from the northeast of Shasta County. Figure1-1, *Regional Location,* and Figure 1-2, *Citywide Aerial,* show the General Plan Area in its regional and local contexts.

4.2.2 REGIONAL PLANNING CONSIDERATIONS

4.2.2.1 SHASTA REGIONAL TRANSPORTATION AGENCY

The U.S. Department of Transportation has designated Shasta Regional Transportation Agency (SRTA) as the Metropolitan Planning Organization (MPO) for Shasta County and the cities of Anderson, Redding, and Shasta Lake. SRTA is a legally separate public agency with its own governing board of directors. The SRTA Board consists of three members of the Shasta County Board of Supervisors, one member from each of the cities of Anderson, Redding, and Shasta Lake, and one member of the Redding Area Bus Authority (RABA). The agency represents a population of 178,592 across Shasta County.

As required by the Code of Federal Regulations (CFR) Title 450.300, Subpart C, and California Government Code Section 65080 et seq., SRTA prepared the 2018 Regional Transportation Plan and Sustainable Communities Strategy for the Shasta Region (RTP/SCS). The RTP is a comprehensive plan that addresses all modes of transportation used by people and for goods and freight movement (i.e., streets/roads, public transit, pedestrian and bicycle facilities, aviation, and rail) in the Shasta Region. The 2018 RTP includes an updated SCS as required by the Sustainable Communities and Climate Protection Act of 2008 (SB 375), which demonstrates how the region will meet greenhouse gas (GHG) emissions reduction targets established by the California Air Resources Board (CARB). CARB established emission reduction targets for California's eighteen metropolitan planning organization (MPO) regions for the year 2020 and 2035. Shasta County was assigned a 0% per capita change when compared to the 2005 baseline year, and the 2018 RTP/SCS reflects this target. SB 375 (2008) requires that local housing projects are consistent with the RTP/SCS (SRTA 2018).

4.2.2.2 SHASTA COUNTY AIR QUALITY MANAGEMENT DISTRICT AND NORTHERN SACRAMENTO VALLEY PLANNING AREA

Redding is in the Northern Sacramento Valley Air Basin which is managed by the Shasta County Air Quality Management District (SCAQMD). The SCAQMD has the responsibility of enforcing federal and State air quality regulations in Shasta County. The SCAQMD adopts and enforces controls on stationary sources of air pollutants through its permit and inspection programs, and it regulates agricultural burning. All projects in Shasta County are subject to applicable SCAQMD rules and regulations in effect at the time of construction.

The air districts for the counties of Shasta, Tehama, Butte, Glenn, Colusa, Sutter, and Yuba have established the Northern Sacramento Valley Planning Area (NSVPA). The NSVPA air districts were designated as non-attainment for the ozone CAAQS and have jointly prepared an air quality attainment plan to attain the ozone CAAQS standard by the earliest practicable date. The NSVPA air districts jointly prepared the original 1991 Air Quality Attainment Plan and have since prepared triennial updates to the plan. The latest update is referred to as the 2021 Triennial Air Quality Attainment Plan (2021 Plan). The 2021 Plan includes an assessment of progress towards achieving the control measure commitments in the previous plan, a summary of ozone data, emission reductions for measures committed to in the previous plan, updated control measure commitments, and updated growth rates.

4.2.2.3 GREENHOUSE GAS EMISSIONS REDUCTION LEGISLATION

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in Executive Order S-03-05; Assembly Bill (AB) 32, the Global Warming Solutions Act (2006); Executive Order B-15-30 and Senate Bill (SB) 32; SB 375; and Executive Order B-5518 and SB 100. Executive Order S-03-05, signed June 1, 2005, set the following GHG reduction goals for the State of California:

- 2000 levels by 2010

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

AB 32 was passed by the state legislature on August 31, 2006, to place the state on a course toward reducing its contribution of GHG emissions. AB 32 established a legislative target for the year 2020 goal outlined in Executive Order S-03-05. CARB prepared its first Scoping Plan in 2008 outlining the state's plan for achieving the 2020 targets of AB 32.

In 2008, SB 375 was adopted to connect passenger-vehicle GHG emissions reduction targets for the transportation sector to local land use decisions that affect travel behavior. Its intent is to reduce GHG emissions from light-duty trucks and automobiles by aligning regional long-range transportation plans, investments, and housing allocations to local land use planning to reduce vehicle miles traveled (VMT) and vehicle trips.

In September 2016, Governor Brown signed SB 32, making the Executive Order B-15-30 goal for year 2030 of a 40 percent reduction below 1990 levels into a statewide-mandated legislative target. CARB issued an update to its Scoping Plan in 2017, which sets forth programs for meeting the SB 32 reduction target.

Executive Order B-55-18 sets a goal for the state to achieve carbon neutrality no later than 2045 and to achieve and maintain net negative emissions thereafter. SB 100 would help the state reach the goal set by Executive Order B-55-18 by requiring that the state's electricity suppliers have a source mix that consists of at least 60 percent renewable/zero carbon sources in 2030 and 100 renewable/zero carbon sources in 2045.

4.2.2.4 SENATE BILL 743

On September 27, 2013, SB 743 was signed into law. SB 743 started a process that could fundamentally change transportation impact analysis as part of CEQA compliance. The legislature found that with the adoption of SB 375, the state had signaled its commitment to encourage land use and transportation planning decisions and investments that reduce VMT and thereby contribute to the reduction of GHG emissions, as required by the California Warming Solutions Act of 2006 (AB 32).

SB 743 generally eliminates auto delay, level of service (LOS), and other similar measures of vehicular capacity or traffic congestion as the sole basis for determining significant impacts under CEQA. Pursuant to the CEQA Guidelines, the new criteria "shall promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses" (Public Resources Code § 21099[b][1]).

4.2.2.5 CENTRAL VALLEY REGIONAL WATER QUALITY CONTROL BOARD – SACRAMENTO RIVER & SAN JOAQUIN RIVER BASINS

Under the Porter-Cologne Water Quality Act, California's water quality control law, the State Water Resources Control Board has ultimate control over water quality policy and allocation of state water resources. Through its nine Regional Water Quality Control Boards, the State Water Resources Control Board carries out the regulation, protection, and administration of water quality in each region. Each regional board is required to adopt a water quality control plan or basin plan. The City of Redding is in the Sacramento River Basin and San Joaquin River Basin (Region 5).

4.3 LOCAL ENVIRONMENTAL SETTING

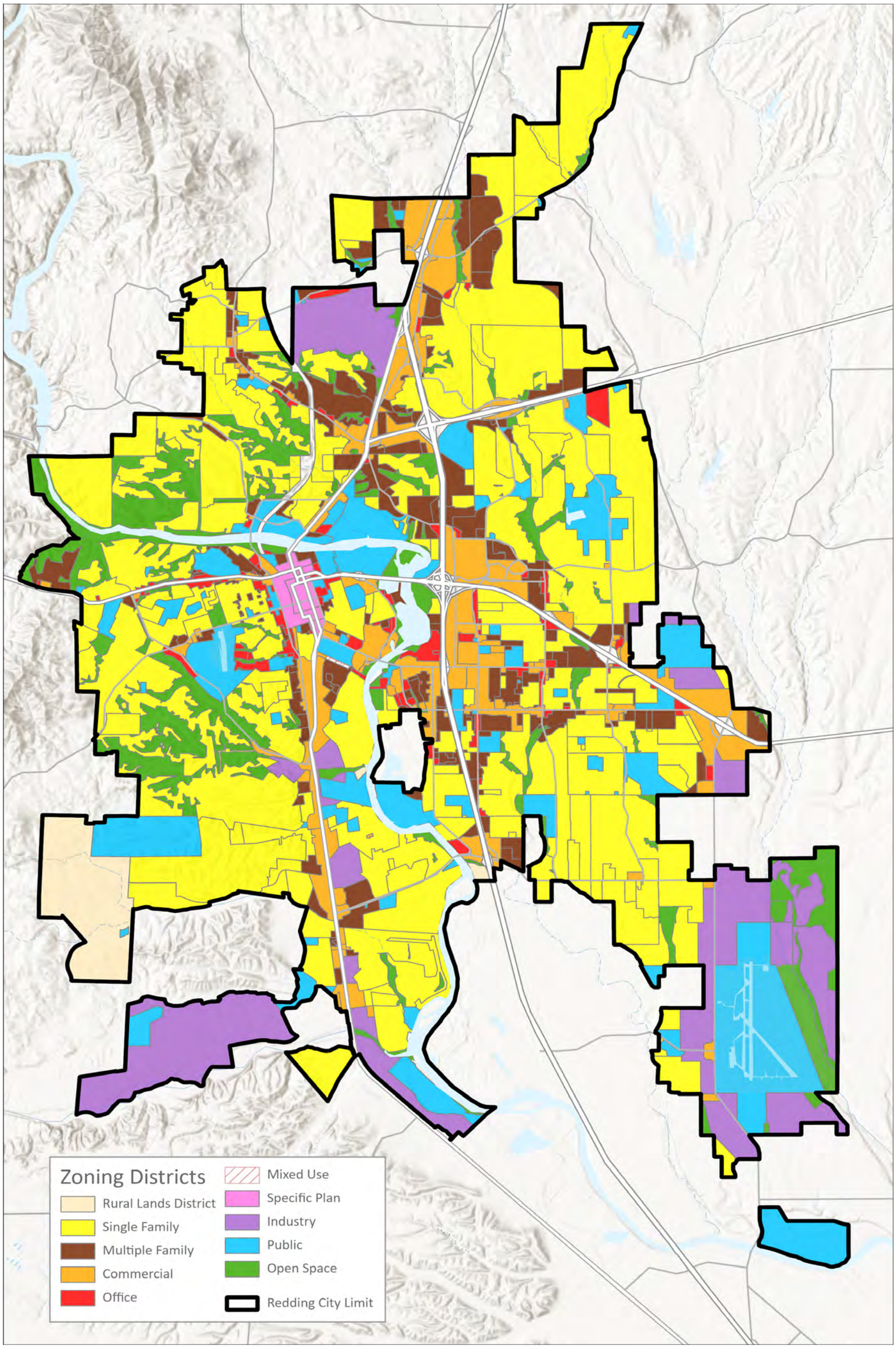
4.3.1 LOCATION AND LAND USE

In 2023, the City encompassed approximately 61 square miles or 39,040 acres and its SOI encompasses approximately 49,427 acres (Redding GIS 2021; Shasta LAFCO 2022). Figure 3-1, *Existing Land Use Plan,* shows the existing land uses in the City.

- Residential. Residential uses in the City range from large rural lots with a minimum of five acres in size to multiple-family projects that allow a maximum of 30 dwelling units per acre.
- Commercial and Industrial. This includes a range of nonresidential uses primarily oriented to commerce. This includes commercial, office, business park, and light industrial.
- Public Facility. These land uses are essential amenities that contribute to the quality of life in the community. Community amenities include educational facilities, religious organizations, and civic facilities.
- Mixed Use. A mix of uses grouped within a development (residential, office, commercial, retail, etc.).
- Open Space. Open space amenities including recreation and habitat conservation. This includes Redding's "Greenway" designation for natural open space. The Greenway designation includes slopes in excess of 20 percent and the 100-year floodplain of the Sacramento River and its tributary creeks and streams.
- Airport. The includes activities which are typically associated with airports and airport-related uses.

4.3.2 GENERAL PLAN AND ZONING

Figure 3-1, *Existing Land Use Plan,* in Chapter 3, *Project Description,* shows the existing General Plan land use designations regulating development in the city. Figure 4-1, *Existing Zoning,* shows the zoning districts in the city.



Source: Generated using ArcGISPro, 2023; City of Redding GIS 2017, 2021, and 2022.

Figure 4-1
Existing Zoning

This page intentionally left blank.

4.3.3 SUMMARY OF EXISTING LAND USES

Table 4-1, *Summary of Existing Land Uses,* shows the distribution of existing General Plan land uses within the Proposed Planning Area.

TABLE 4-1 SUMMARY OF EXISTING LAND USES

Land Use Category	Total
Residential	
Residential — 1 Dwelling Unit per 5 Acres and Larger (5 a/u)	3,440
Residential — 1 Dwelling Unit per 1 to 5 Acres (1 to 5 a/u)	4,555
Residential — 1 to 2 Dwelling Units per Acre (1 to 2 u/a)	3,250
Residential — 2 to 3.5 Dwelling Units per Acre (2 to 3.5 u/a)	12,477
Residential — 3.5 to 6 Dwelling Units per Acre (3.5 to 6 u/a)	2,201
Residential — 6 to 10 Dwelling Units per Acre (6 to 10 u/a)	1,696
Residential — 10 to 20 Dwelling Units per Acre (10 to 20 u/a)	1,004
Residential — 20 to 30 Dwelling Units per Acre (20 to 30 u/a)	36
Commercial	
Limited Office (LO)	137
General Office (GO)	497
Neighborhood Commercial (NC)	67
Shopping Center (SC)	136
Regional Commercial (RC)	581
General Commercial (GC)	1,257
Mixed Use Core (MUC)	274
Heavy Commercial (HC)	1,051
Industrial	
General Industry (GI)	2,821
Heavy Industry (HI)	1,830
Public Facilities/Airport	
Airport Service (AS)	1,239
Airport Operations (AO)	121
Public Facilities or Institutional (PF-I; PF-I-S)	3,273
Recreation/Open Space	
Recreation (REC)	51
Park (PK)	861
Park (Golf-Course)	161
Greenway (GWY)	15,707
Total[1]	**58,723**

Source: City of Redding GIS 2023

[1] Total acreage of designated land in the proposed Planning Area is less than the total area within the proposed Planning Area boundary due to areas of the City including the state roads and the Sacramento River remaining as undesignated land.

Table 4-2, *Land Use Designations in the City under Current General Plan,* shows the permitted uses under each current land use designation.

TABLE 4-2 LAND USE DESIGNATIONS IN THE CITY UNDER CURRENT GENERAL PLAN

Land Use Designation	Uses
Residential	
Residential — 1 Dwelling Unit per 5 Acres and Larger (5 a/u)	▪ Agricultural purposes ▪ Areas constrained by extreme topography. ▪ Outlying rural areas
Residential — 1 Dwelling Unit per 1 to 5 Acres (1 to 5 a/u)	▪ Large rural lots ▪ Hillside areas ▪ Transition areas between agricultural and urban uses.
Residential — 1 to 2 Dwelling Units per Acre (1 to 2 u/a)	▪ For single-family residences/subdivisions with large lots
Residential — 2 to 3.5 Dwelling Units per Acre (2 to 3.5 u/a)	▪ Subdivisions with lots generally larger than 8,000 square feet. ▪ Developments with open space and recreation areas.
Residential — 3.5 to 6 Dwelling Units per Acre (3.5 to 6 u/a)	▪ Detached or attached single-family homes in lots generally larger than 5,000 square feet. ▪ Not appropriate for slope areas exceeding 8 percent.
Residential — 6 to 10 Dwelling Units per Acre (6 to 10 u/a)	▪ Single-family attached or detached units, and/or townhouses. ▪ Multiple-family projects and mobile home parks near arterial or collector street systems.
Residential — 10 to 20 Dwelling Units per Acre (10 to 20 u/a)	▪ Multiple-family projects ranging from townhouses to apartments, typically located on arterial or collector street(s).
Residential — 20 to 30 Dwelling Units per Acre (20 to 30 u/a)	▪ Multiple-story, multiple-family projects, including condominiums and apartments located within or adjacent to Downtown or along arterial corridors served by public transit.
Commercial	
Limited Office (LO)	▪ Transition area within commercial areas or between commercial areas and residential areas. ▪ Cluster of buildings built at a residential scale that provides professional office space.
General Office (GO)	▪ Professional and business offices and personal-service businesses with appropriate and compatible accessory uses. ▪ Can include rest homes; nursing homes; day-care facilities; hospitals; religious, educational, cultural, and public-utility uses; multiple family housing; and financial institutions.
Neighborhood Commercial (NC)	▪ Convenience and neighborhood shopping areas which provide a range of day-to-day retail goods and services.
Shopping Center (SC)	▪ Shopping centers serving a larger market area than a neighborhood center, but a smaller market than a regional center. ▪ Supermarket and combined drug/variety/garden business; tenants offering consumer goods and personal services; and office and clinic uses.

Land Use Designation	Uses
Regional Commercial (RC)	▪ A mix of retail uses and associated services on a regional scale, including malls with several full-line department stores as anchor tenants.
General Commercial (GC)	▪ Existing commercial strips on arterial streets and interchange areas where commercial concentration are desirable. ▪ Can include retail stores, offices, and personal-service establishments. Financial institutions, private schools, day-care facilities, convalescent hospitals, automobile sales and service, and similar uses also may be permitted subject to appropriate standards.
Mixed Use Core (MUC)	▪ Full range of uses in the Downtown area, including retail stores; eating and drinking establishments; commercial recreation; entertainment and cultural facilities; financial, business, and personal services; hospitals; hotels and motels; educational and social services; government offices, and residential uses.
Heavy Commercial (HC)	▪ For commercial businesses, particularly those not permitted in other commercial areas because of the large scale of the buildings and frequent truck deliveries which may have adverse impacts on other businesses. ▪ May include automobile services, building materials storage and sales, nurseries, equipment sales, wholesaling, storage, and similar uses.
Industrial	
General Industry (GI)	▪ Wide variety of industrial activities and related uses generally characterized by their limited potential to create significant adverse visual, noise, or other impacts to adjoining public and residential properties. ▪ Industrial and business parks, offices, manufacturing, processing, assembling, research, warehousing, small and large-scale wholesale distribution, heavy equipment sales and repair, screened outdoor storage, and similar and compatible uses.
Heavy Industry (HI)	▪ Allows for the broadest range of industrial uses, including manufacturing, processing, assembling, research, warehousing, small- and largescale wholesale and distribution, railroad facilities, and similar and compatible uses.
Public Facilities/Airport	
Airport Service (AS)	▪ For activities which are typically associated with airports and airport-related uses. ▪ Can include aircraft sales, service, and storage; charter services; and ancillary visitor services such as food, lodging, and car rentals.

Land Use Designation	Uses
Public Facilities or Institutional (PF-I; PF-I-S)	▪ For public and quasi-public facilities, including, government services and facilities, fire stations, wastewater treatment facilities, electrical substations, airports, domestic water treatment and storage, landfills, and similar uses. ▪ Can also include schools and accredited secondary educational facilities, hospitals, and cemeteries, as well as appropriate lands controlled by philanthropic and nonprofit organizations for existing or future public uses.
Recreation/Open Space	
Recreation (REC)	▪ Defined in the Redding Riverfront Specific Plan, this classification denotes areas for active water or beach-oriented recreation that utilizes the Kutras Lake as an asset. ▪ Use of facilities would be water-oriented, generally open in nature, seasonal in use, and without significant investment in buildings.
Greenway (GWY)	▪ For natural open space and includes slopes in excess of 20 percent and the 100-year floodplain of the Sacramento River and its tributary creeks and streams.
Overlays	
Mixed Use Neighborhood Overlay	▪ Allows the creation of a mix of land uses in a compact pattern that will reduce dependency on the automobile and basin air quality impacts and promote high-quality, interactive neighborhoods. ▪
Critical Mineral Resource Overlay	▪ For areas identified by the California Division of Mines and Geology (DMG) as containing mineral resources of demonstrated/measured or inferred significance in locations that the City generally considers suitable for mineral-extraction activities. ▪ New development within and immediately adjacent to lands with this designation are subject to discretionary approval

4.4 ASSUMPTIONS REGARDING CUMULATIVE IMPACTS

Section 15130 of the CEQA Guidelines states that cumulative impacts shall be discussed when the project's incremental effect is cumulatively considerable. It further states that this discussion shall reflect the level and severity of the impact and the likelihood of occurrence, but not in as great a level of detail as that necessary for the project alone. Section 15355 of the CEQA Guidelines defines cumulative impacts as "…two or more individual effects which, when considered together, as considerable or which compound or increase other environmental impacts." Cumulative impacts represent the changes caused by the incremental impact of a project when added to the proposed or committed projects in the vicinity.

The CEQA Guidelines (§15130[b][1]) state that the information used in an analysis of cumulative impacts should come from one of two sources:

1. A list of past, present, and probable future projects producing related cumulative impacts, including, if necessary, projects outside the control of the agency; or
2. A summary of projections in an adopted general plan or related planning document designed to evaluate regional or area-wide conditions.

Depending on the environmental category, the cumulative impact analysis may use either method 1 or 2. The cumulative impacts analyses in this DEIR use method No. 2. The proposed project consists of the Redding General Plan Update. Consistent with Section 15130(b)(1)(B) of the CEQA Guidelines, this DEIR analyzes the environmental impacts of development in accordance with buildout of the proposed land use plan. As a result, this DEIR addresses the cumulative impacts of development in the City of Redding and the region surrounding it, as appropriate. In most cases, the potential for cumulative impacts within the planning area. Potential cumulative impacts that have the potential for impacts beyond the City boundaries (e.g., traffic, air quality, noise) have been addressed through cumulative growth in the City and region. The growth projections adopted by the City and surrounding area are used for the cumulative impact analyses of this DEIR. Refer Chapter 5, *Environmental Analysis,* for a discussion of the cumulative impacts associated with development and growth in the City and region for each environmental resource topic. A summary of the extent of cumulative impacts by environmental topic follows.

- Aesthetics: Coterminous with the City of Redding SOI boundary.
- Agricultural and Forestry Resources: Coterminous with the City of Redding and SOI.
- Air Quality: Based on the regional boundaries of the Northern Sacramento Valley Air Basin.
- Biological Resources: Coterminous with the City of Redding boundary but considers regional habitat loss in the northern California region based on the range of the protected species.
- Cultural Resources: Coterminous with the City of Redding planning area.
- Energy: Based on energy use within the City of Redding boundary.
- Geological Resources: Within the City of Redding boundary.
- Greenhouse Gas Emissions: Worldwide impacts based on the emissions sectors in the Scoping Plan in California (boundary).
- Hazards and Hazardous Materials: Within the City boundaries.
- Hydrology and Water Quality: Hydrology and water quality impacts would be within the Sacramento River and San Joaquin River Basins, and flood impacts would be within the City of Redding boundary.
- Land Use and Planning: Within the City of Redding boundary but considers regional land use planning based on SRTA.
- Mineral Resources: Within the City of Redding SOI boundary.
- Noise: Within the City of Redding boundary.

- Population and Housing: Within the City of Redding boundary.
- Public Services: Within the service area boundaries of the Redding Fire Department, Redding Police Department, Redding School District, and Shasta Public Library System.
- Recreation: Within the City of Redding boundary.
- Transportation: Considers regional transportation improvements identified in the SRTA RTP.
- Tribal Cultural Resources: Within the City of Redding SOI boundary, including development adjacent to Redding Rancheria.
- Utilities and Service Systems: Water supply and distribution systems and wastewater services impacts would be within the service area of the Redding Municipal Water and Wastewater Utility.
- Wildfire: Within the service area boundaries of the Redding Fire Department.

4.5 REFERENCES

Redding, City of, GIS. 2021, June 6. Redding City Limit, ArcGIS Online. https://data-redding.opendata.arcgis.com/datasets/reddingcitylimit/explore?location=40.574465%2C-122.362711%2C12.30

Shasta Local Agency Formation Commission. 2022, December 2. City of Redding Municipal Services Review & Sphere of Influence Update. https://www.shastalafco.org/images/Local.Agencies/City_of_Redding_MSR_SOI_Update_Commission_Approved_December-2022.pdf

Shasta Regional Transportation Agency (SRTA). 2018, October. Regional Transportation Plan and Sustainable Communities Strategy for the Shasta Region. https://www.srta.ca.gov/DocumentCenter/View/4285/2018-Regional-Transportation-Plan--Sustainable-Communities-Strategy-adopted-Oct-9-2018?bidId= Accessed March 2022.

This page intentionally left blank.

5. *Environmental Analysis*

CHAPTER ORGANIZATION

This chapter of the Draft EIR is made up of 18 sub-chapters. This chapter describes the format of this Draft EIR and the methodology of the cumulative impact analysis. The 18 sub-chapters evaluate the direct, indirect, and cumulative environmental impacts of the proposed Project. The potential environmental effects of the proposed project are analyzed for the following environmental issue areas:

- Aesthetics (AES)
- Agriculture and Forestry Resources (AG)
- Air Quality (AQ)
- Biological Resources (BIO)
- Cultural Resources and Tribal Cultural Resources (CULT, TCR)
- Energy (ENE)
- Geology and Soils (GEO)
- Greenhouse Gas Emissions (GHG)
- Hazards and Hazardous Materials (HAZ)
- Hydrology and Water Quality (HYD)
- Land Use and Planning (LU)
- Mineral Resources (MIN)
- Noise (NOI)
- Population and Housing (POP)
- Public Services and Recreation (PS, REC)
- Transportation (TRANS)
- Utilities and Service Systems (UTIL)
- Wildfire (WILD)

FORMAT OF THE ENVIRONMENTAL ANALYSIS

Each subchapter is organized into three sections:

- Environmental Setting provides a description of the existing environmental conditions—providing a baseline against which the impacts of the proposed Project can be compared—and an overview of federal, state, regional, and local laws and regulations relevant to that environmental issue.
- Thresholds of Significance refers to the quantitative or qualitative standards or conditions used to compare the existing setting with and without the proposed project to determine whether the impact is significant. These standards are based primarily on the CEQA Guidelines, and may reflect

established health standards, ecological tolerance standards, public service capacity standards, or guidelines established by agencies or experts.

- Impact Discussion gives an overview of the potential impacts of the proposed project and explains why impacts were found to be significant or less than significant and include suggested measures that would mitigate impacts with potentially significant or significant impact. Impacts and mitigation measures are numbered consecutively within each topical analysis and begin with an acronymic or abbreviated reference to the impact section. The following symbols are used for individual topics below. This subsection also includes a discussion of cumulative impacts of the proposed project.
- Cumulative Impacts gives an overview of the potential cumulative impacts of the proposed project in combination with past, present and reasonably anticipated future projects and explains why impacts were found to cumulatively considerable or not cumulative considerable and include suggested measures that would mitigate impacts with potentially significant or significant impact.
- References

TERMINOLOGY USED IN THIS DRAFT EIR

The level of significance is identified for each impact in this DEIR. Although the criteria for determining significance are different for each topic area, the environmental analysis applies a uniform determination of the environmental impact based on definitions consistent with CEQA and the CEQA Guidelines:

- No impact. The project would not change the environment.
- Less than significant. The project would not cause any substantial, adverse change in the environment.
- Less than significant with mitigation incorporated. The EIR includes mitigation measures that avoid substantial adverse impacts on the environment.
- Significant and unavoidable. The project would cause a substantial adverse effect on the environment, and no feasible mitigation measures are available to reduce the impact to a less than significant level.

This EIR evaluates the proposed General Plan long range planning document that affects the entire Planning Area. Consequently, the environmental determination for each topic is based on a high-level assumption of future development, rather than an evaluation of every potential project on every possible building site. The impact determination for an impact, other than significant and unavoidable, assumes that development consistent with the General Plan would have a similar environmental determination. Because it is not possible to know the details of every future project, and the potential environmental impacts associated with development and operation, the precise environmental determination will be made at the time of approval and supported by substantial evidence in the record.

For topics that conclude with a significant and unavoidable determination, the evidence in this EIR demonstrates that there is at least one instance where this finding would occur. Because this is a low threshold for making this determination, development projects may be found to a have a less than significant impact even though this EIR concludes significant and unavoidable for the same topic for the General Plan as a whole.

5.1 AESTHETICS

This chapter describes the regulatory framework and existing conditions in the Plan Area related to aesthetics, and the potential impacts of the project on aesthetics.

5.1.1 ENVIRONMENTAL SETTING

5.1.1.1 REGULATORY FRAMEWORK

This section summarizes key state and local regulations and programs related to aesthetics in the City of Redding. There are no federal regulations pertaining to aesthetics that apply to the proposed project.

State Regulations

Caltrans Scenic Highway Program

In 1963, California's Scenic Highway Program was created to preserve and protect the natural scenic beauty of California highways and adjacent corridors through special conservation treatment. The state laws governing this program are in the Streets and Highways Code, Sections 260 to 263. Caltrans oversees the program. Caltrans defines a scenic highway as any freeway, highway, road, or other public right-of-way that traverses an area of exceptional scenic quality. Suitability for designation as a State Scenic Highway is based on three criteria described in Caltrans' Guidelines for Official Designation of Scenic Highways (2008) (Caltrans 2022):

- Vividness. The extent to which the landscape is memorable. This is associated with the distinctiveness, diversity, and contrast of visual elements.
- Intactness. The integrity of visual order and the extent to which the natural landscape is free from visual intrusions (e.g., buildings, structures, equipment, grading).
- Unity. The extent to which development is sensitive to and visually harmonious with the natural landscape.

California Building Code

The California Building Code, Part 2 of Title 24 in the California Code of Regulations (CCR), is based on the International Building Code and combines three types of building standards from three different origins:

- Building standards that have been adopted by state agencies without change from the International Building Code.
- Building standards that have been adopted and adapted from the International Building Code to meet California conditions.

- Building standards, authorized by the California legislature, which constitute extensive additions not covered by the International Building Code that have been adopted to address California concerns.

The California Building Code includes standards for outdoor lighting that are intended to improve energy efficiency and reduce light pollution and glare by regulating light power and brightness, shielding, and sensor controls.

Local Regulations

City of Redding Municipal Code

The City of Redding Title 18, Zoning, identified the types of permitted land uses throughout the various districts. Division III, Base District Regulations, under this title identified applicable use regulations, criteria for site development, performance standards, and design regulations. There criteria, standards and regulations include specific for residential zoning, commercial and industrial zoning districts. Division V, Overlay District Regulations, sets additional regulations for districts such as the Planned Development Overlay, Mixed-Use Overlay, Mixed-Use Neighborhood Overlay District, Design Review Overlay, and Specific Plan Overlay District.

Exterior Lighting

Section 18.40.090, Lighting, set standards for exterior lighting in commercial, office, and industrial developments to eliminate spillover light and glare. Section 18.41.090, Lighting, sets lighting standards for off-street parking areas for nonresidential uses providing parking spaces.

Tree Management Ordinance

Chapter 18.45, Tree Management, aims to protect and enhance the aesthetic qualities of the community, promote a healthy and attractive urban landscape, recognize the importance of trees as a visual and physical buffer, preserve the city's valuable natural features, require the replacement of trees that are removed, establish a program for the planting of trees in new developments, and protect trees on undeveloped properties until such time as a development plan/building permit is approved.

2022 Downtown Redding Specific Plan Update

The Downtown Redding Specific Plan originally adopted in 2001 has been replaced with a 2022 update of the plan aimed to build on the previous Specific Plan and add new ideas that respond to the way people live, work, and play today. The Downtown Redding Specific Plan Update includes Chapter 6, *Regulations, Standards, and Guidelines*, which serves as the zoning code to guide new development in the Specific Plan area (Redding 2022).

2000-2020 Redding General Plan

The following policies are included in the existing General Plan regarding aesthetic resources.

Community Development and Design Element

- **Goal CDD7:** Retain the natural appearance of steep hillside areas and designated ridge lines.
    - **Policy CDD7A:** Protect the visual integrity of prominent ridge lines that can be viewed from key public gathering areas, the river, visitor destinations, and community gateways. These ridge areas are depicted on Figure 1-4. Utilize one or more of the following measures to avoid or minimize development impacts:
        - Public or private purchase of lands, the use of conservation easements, or similar measures.
        - Performance standards, including limitations on building heights and/or increased ridge-line setbacks and standards for use of appropriate building forms, colors, and materials that blend into their surroundings.
- **Goal CDD8:** Promote the development of a cohesive, well-defined City.
    - **Policy CDD8A:** Maintain well-defined community edges using open-space buffers, greenbelts, agricultural lands, stream courses, clustered development, and other appropriate types of landscape and design features.
    - **Policy CDD8B:** Provide community "gateway" treatments, including signage and landscape, particularly in locations depicted on Figure 1-5. Provide Downtown "gateway" treatments at appropriate locations.
    - **Policy CDD8C:** Link special community facilities, parks, and other uses to and through the Downtown by establishing clear, convenient, and attractive pedestrian and vehicle connections.
- **Goal CDD9:** Preserve existing community character and fabric and promote the development of livable and cohesive neighborhoods and districts.
    - **Policy CDD9A:** Encourage the preservation and rehabilitation of historically or architecturally significant districts, buildings, and structures.
    - **Policy CDD9B:** Establish standards for infill projects in existing residential neighborhoods that respect existing neighborhood scale and character.
    - **Policy CDD9C:** Establish design standards for new development that will create more livable and aesthetically pleasing neighborhoods. Promote compatibility between land uses by minimizing impacts to privacy, views, and noise and from intrusion of non-neighborhood traffic.
    - **Policy CDD9D:** Design projects to provide gradual transitions between multiple-family and single-family districts and between commercial and residential districts by considering appropriate techniques such as:

        - Density/intensity transitions.
        - Landscape buffers/trails.
        - Building placement.
        - Height transitions

- Goal CDD11: Ensure that new residential development is well-located and well-designed and can accommodate a mixture of housing types and uses.
    - Policy CDD11A: Maximum residential densities within a given range are appropriate only for those projects that demonstrate superior design features and amenities.
    - Policy CDD11B: Establish residential design standards that address natural features, visibility of structures, variations in building design, garage placement, usable open space, access, and the relationship to surrounding uses. Site constraints may dictate that the maximum number of lots allowed by the General Plan classification for a given parcel of land may not be realized.
    - Policy CDD11C: When zoning single-family residential areas within designated density ranges, use density afforded by the previous General Plan. Exceptions will be made where site topography, access, availability of utilities, and/or existing neighborhood character indicate that development potential should be either increased or reduced by zoning action.
    - Policy CDD11E: Allow day-care facilities, churches, residential care facilities for the elderly, public and private schools, small grocery stores and other neighborhood-serving uses, and other ancillary uses in residential neighborhoods, provided that they are located and designed to be compatible with the neighborhood.
- Goal CDD14: Encourage project development which is compatible with surrounding properties and which improves the image of the City.
    - Policy CDD14A: Establish design and performance standards for commercial development to ensure that building and site design are compatible with their surroundings in terms of scale, mass, building patterns, building details, location of parking, signage, and landscape and enhance views from major streets and other public areas.
    - Policy CDD14B: Create an incentive program to encourage proposed projects to provide site amenities, site design, and building design that clearly exceed expected standards by providing:
        - Unique project relationship to the surrounding community.
        - Strong, consistent design style throughout the project.
        - Imaginative solutions to providing development features such as:
            - Signs.
            - Parking lots.

- Screening and enclosing elements
- Project lightings
- Public art
- Landscape and water features
- On-Site and off-site pedestrian spaces and linkages

- **Goal CDD16:** Improve the visual attractiveness of the City's arterial and collector streets; improve pedestrian safety.
  - **Policy CDD16A:** Determine priorities and establish aprogram to retrofit existing arterial streetsto include median and street-sidelandscape.
  - **Policy CDD16B:** Provide sufficient right-of-way for sidewalks and street-side and median landscape and necessary utilities along new arterials and new collector streets. Install such improvements with the construction of the street where appropriate.
  - **Policy CDD16C:** Utilize Street tree-planting as a unifying visual element along the streets; establish a street tree-planting and maintenance program.
- **Goal CDD19:** Have the building setbacks and heights reflect the role and character of the various districts of the City.
  - **Policy CDD19A:** Establish appropriate standards for buildings, massing, height, and setbacks for residential and commercial developments on arterial and collector streets that will define and reinforce the character of development districts in the city.
  - **Policy CDD19B:** Utilize Figure 1-5, in conjunction with the appropriate Focus Area maps and policies, to establish the appropriate locations for "mid-rise" and "high-rise" buildings in the community. High-rise buildings are only appropriate in the Downtown core area.
  - **Policy CDD19C:** Establish appropriate standards and design criteria for mid-rise and high-rise buildings. The standards and criteria should address, among other items, the following:
    - Definition and support of adjacent streets and open spaces.
    - Integration with other buildings and open space on the block or in the area.
    - Provision of high-quality pedestrian amenities.
    - Recognition of the importance and role of the three main parts of tall buildings: the base, middle (shaft), and top.
  - **Policy CDD19D:** Establish procedures for instituting an Architectural Review Committee to review and make recommendations proposals for mid-rise and high-rise buildings. The Committee should include individuals with specific expertise and experience in the design and construction of these building types.

5.1.1.2 EXISTING CONDITIONS

The aesthetic resources in an urban area, such as the City of Redding, consists of unique or architecturally recognized buildings, historic structures or other buildings, street trees, plazas, parks, key vegetation, and important view corridors that contribute to the community identity. In urbanized areas, views and view corridors often extend along City streets and may include foreground views of street trees, architecturally notable or historic structures, plazas and the urban streetscape or more distant backdrop views such as those of mountains, water bodies, parks, and open spaces.

Visual Character and Quality

The City of Redding is part of Shasta County in Northern California and is the largest city north of Sacramento. Redding is bordered by unincorporated Shasta County land. The city is surrounded by mountains to the north, east, and west and farmland to the south. The City is surrounded by mountain ranges, lakes, waterfalls, and hiking trails. The city is a near Whiskeytown National Recreation Area to the west, Shasta (Lake)National Recreation Area and the Shasta Trinity National Forest to the north, and Lassen Volcanic National Park to the east. The City is traversed by Interstate 5 (I-5), which runs in a north-south direction. State Highways 299, 273, and 44 also pass through Redding. Redding is also bisected by the Sacramento River, which flows south to Sacramento and into San Francisco Bay. The Central and Western portion of Redding can be characterized as having a commercial and office core with surrounding residential uses. The Northeast Redding is characterized as having commercial development and suburban residential.

Scenic Vistas

Lassen Volcanic National Park

The active volcano of Lassen Peak, which shook the region with eruptions of lava and ash for years during the 1910s, forms the centerpiece of this 106,000-acre national park. The park is located 45 miles east of Redding (Redding 2022a). On a clear day Lassen Peak, often covered in snow, is visible from Redding.

Sacramento River

The Sacramento River is the longest river in California stretching from the Klamath Mountains to the north to the San Francisco Bay. The river is an important feature in Redding with several bridges, trails, fishing spots, and viewsheds.

Sacramento River National Recreation Trail

The Sacramento River National Recreation Trail is comprised of two distinct trail systems. The Sacramento River Trail encompasses the world-famous Sundial Bridge at Turtle Bay Exploration Park, in the heart of Redding. The Sacramento River Rail Trail extends north to the Shasta Dam and sits alongside an historic abandoned railway. Both trails have been designated as National Recreation Trails in the National Trail System (Redding 2022a).

Sundial Bridge

The Sundial Bridge at Turtle Bay crosses the Sacramento River in the heart of Redding, California. The Sundial Bridge casts its gnomon shadow upon a dial to the north of the bridge accurately once a year during the summer solstice. With the objective of providing pedestrian access to the north and south of Turtle Bay Exploration Park, the Sundial Bridge has also become an icon for the City of Redding (Redding 2022b).

Highways

Caltrans lists two eligible and one officially designated scenic highway within Shasta County (Caltrans 2022b). I-5 is listed as an eligible scenic highway and bisects the city from north to south. Route 44 is also listed as an eligible scenic highway and starts within the City and travels eastward. Shasta Dam Boulevard west from Lake Boulevard is an officially designated scenic highway and is approximately 3.4 miles north of Oasis Rd.

5.1.2 THRESHOLDS OF SIGNIFICANCE

Appendix G of the CEQA Guidelines states that, "except as provided in Public Resources Code Section 21099," a project would normally have a significant effect on the environment if the project would:

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

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

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

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

AES-5 In combination with past, present, and reasonably foreseeable projects, result in cumulative impacts with respect to aesthetics.

5.1.3 PROPOSED GENERAL PLAN POLICIES

Community Development and Design Element

- Policy CDD4D: Work to ensure that the design and construction of new bridges complements the surrounding landscape, as appropriate.

- Policy CDD4E: Pursue open space accessways that complement existing development and, where applicable, protect the privacy and security of adjoining residences.
- Policy CDD7B: Link special community facilities, parks, and other uses to and through Downtown by establishing clear, accessible, convenient, and attractive pedestrian, bike, and automobile connections where appropriate and feasible.
- Policy CDD6A: Strive to protect the visual integrity of prominent ridge lines (see figure CDD-4) and avoid alterations to the topography that can be viewed from vista points. The City should consider the use of tools such as the following to avoid or minimize development impacts:
    - Purchase of land (public or public-private partnerships)
    - Creating conservation easements or similar measures
    - Utilizing design measures such as building height limitations, increased ridge-line setbacks, and/ or standards for use of appropriate building forms, colors, and materials that blend into the surroundings
- Policy CDD7A: Strive to maintain well-defined community edges using open space buffers, greenbelts, agricultural lands, stream corridors, and other natural features. Where this is not feasible, utilize City-wide "gateway" treatments through signage and/or identifiable landscape features or other aesthetic elements.
- Policy CDD7C: Strive to develop and adopt a citywide Directional Sign Program by identifying and establishing districts and neighborhoods; incorporating landscape, banners, flags, art, and displays to enhance visual attractiveness and historical and cultural significance that would help define destinations and meet current and future needs of the diverse population in the community.
- Policy CDD7D: Consider graphic standards and artistic directional signage for local streets, plazas, the river, trails, community centers, and other landmarks focused on local identity, aesthetics, and visibility to establish a high quality, appropriate, and an attractive brand identity and design as a key strategy to enhance the quality of life, the community and promote tourism and economic development.
- Policy CDD7E: Collaborate with public and private agencies and organizations, as appropriate, to create distinct, fundamental, and enhanced navigational elements that resonate with the community's identity and vision.
- Policy CDD7F: Work with property owners to establish Downtown "gateway" treatments at appropriate locations and enhance the livability and character of Downtown by establishing a distinct theme for community wayfinding through inclusive and identifiable navigational elements, map kiosks, and pedestrian and off-street signs.
- Policy CDD8G: Consider the development and application of a Neighborhood Conservation Overlay District or similar mechanism to protect identified historic districts and ensure new developments share similar characteristics to minimize adverse effects that occur through unsuitable development

- Policy CDD8H: Strive to ensure that new developments reflect the existing physical characteristics, building design, streetscape, open space requirements, and urban form that preserve and contribute to the overall character and livability of the established neighborhood.
- Policy CDD9A: Encourage new residential, office, and commercial development to reflect enduring and interesting, attractive designs and provide community amenities, as appropriate.
- Policy CDD9B: Consider adopting development guidelines that address, among other things:
    - Ensuring that buildings are designed to be attractive assets to the neighborhood and City and exhibit attributes of quality and permanence, minimize the use of blank, unarticulated walls, and include interesting architectural features and details.
    - Pedestrian oriented designs and amenities are provided that include, among other items, appropriate scale lighting, benches, landscape, and shade trees.
    - Incorporates Crime prevention through Environmental Design (CPTED) principles, as appropriate
- Policy CDD10C: Consider establishing incentives for medium- to high-density, mixed-use developments, where appropriate, with emphasis on Downtown and in the "Mixed Use Neighborhood Overlay" Districts. Review and amend as necessary the Mixed Use Neighborhood Overlay zoning district to ensure that it serves to facilitate and incentivize the development of new mixed use neighborhoods to the extent feasible.
- Policy CDD10D: Encourage development in the City to include inviting, attractive, accessible, and walkable urban mixed-use neighborhoods combining residential, commercial, recreational, open space, and employment to maximize the use of underused urban lots.
- Policy CDD11F: Consider establishing residential design standards that address natural features, visibility of structures, variations in building design, garage placement, usable open space, access, and the relationship to surrounding uses. Site constraints may dictate that the maximum number of residential dwelling units allowed by the General Plan classification for a given parcel of land may not be realized.
- Policy CDD12A: Establish design standards for new development that will create more livable and aesthetically pleasing neighborhoods, as funding allows. Promote compatibility between land uses by minimizing impacts to privacy, views, and noise and protecting against intrusions of non-neighborhood traffic.
- Policy CDD12G: New development projects should provide gradual transitions between multiple-family and single-family districts and between commercial and residential districts by considering appropriate techniques such as:
    - Density.
    - Intensity transitions.
    - Landscape buffers.
    - Trails.

- Building placement.
- Height transitions.

- **Policy CDD12H:** Strive to ensure adequate street and landscape maintenance, law enforcement, code enforcement, litter, and graffiti control to provide safe and attractive neighborhoods for residents
- **Policy CDD14A:** Consider establishing design and performance standards for commercial development to ensure that building and site design are vibrant, convenient, attractive, and are compatible with the surroundings in terms of scale, mass, building patterns, building details, location and visibility of parking, signage, and landscape and enhance views from major streets and other public areas.
- **Policy CDD14B:** Consider requiring that the design of large commercial projects, shopping centers, and regional scale developments to incorporate plazas, courtyards, and other outdoor gathering places and connections to adjacent residential neighborhoods.
- **Policy CDD15A:** Endeavor to reduce the visual clutter and promote a continuous, distinctive, and well-coordinated master sign program in select commercial corridors.
- **Policy CDD15B:** Consider requiring that new developments should include landscape and signage plans along with other project details during the pre-application and/or formal application process for review
- **Policy CDD15C:** The design and size of signs in established neighborhoods should fit within the architectural order of the façade and do not obscure or damage the integrity of the building.
- **Policy CDD16A:** Street tree-planting should be a unifying visual element along the streets and strive to establish a program to retrofit existing arterial streets to include median and street-side landscape.
- **Policy CDD16D:** Enhance efforts to screen unattractive or distracting elements with landscape to alter the effect of large retaining walls, large parking lots, bleak surfaces, and unattractive views by considering appropriate amendments to the Zoning Ordinance and the development review process.
- **Policy CDD 16E**: Consider adopting and implementing a Master Street Plan, identifying the hierarchy of streets and appropriate streetscape elements that also considers the requirements of emergency response personnel. A Master Plan may include such items as:
    - Traffic calming features and design treatment (e.g., bike boxes, barriers, distinct pavement features, delineated markers and reflective paint, medians, etc.,)
    - Lighting layout (e.g., identify any needed changes to current street light spacing standards and equipment to ensure adequate sidewalk/pedestrian area lighting, use of pedestrian scale- lighting techniques etc.)
    - Height, spacing, and scale of street fixtures and furniture
    - Width and paving materials for sidewalks

- Signage and public art
- Ground-level businesses to support
- Street connectivity
- Landscape and street trees with root barriers, in compliance with a comprehensive Tree Plan.

- Policy CDD16F: Consider establishing a comprehensive landscape and vegetation management program that incorporates the City's urban landscape and open space lands to enhance the landscape aesthetic of the City and more effectively protects the community from wildfire hazards. The program could be responsible for the following and additional activities as may be appropriate:
  - Overseeing the City's street tree program, including recommendations on appropriate trees and long-term maintenance
  - Reviewing and approval of landscape plans developed in conjunction with private development activities such as commercial and office developments, residential planned developments, proposed landscape maintenance districts, stormwater detention basins, and similar developments and facilities
  - Review and consider, in concert with appropriate public safety agencies, vegetation modifications and long-term management plans in Redding's wildland-urban interface areas to protect new and existing developments from wildfire
  - Identifying and seeking local, State, and federal funds as well as grants and other financial resources to accomplish the above activities
- Policy CDD19A: Consider establishing appropriate standards for buildings, massing, height, and setbacks for residential and commercial developments on arterial and collector streets that will define and reinforce the character of development districts in the city, while respecting cultural and historical landmarks and places of interest
- Policy CDD19C: Consider establishing appropriate design standards and criteria for mid-rise and high-rise buildings. The standards and criteria should address, among other items, the following:
  - Setbacks, step-backs, architectural design, massing, scale, form, site design, and transparency
  - Definition and support of adjacent streets and open spaces
  - Integration with other buildings and open space on the block or in the area
  - Provision of high-quality pedestrian amenities
  - Recognition of the importance and role of the three main parts of tall buildings: the base, middle (shaft), and top

- Application of Building Code and other appropriate safety requirements

- **Policy CDD20A:** Utilize public art to create identifiable districts, places, and special locations in the public domain by:
  - Encouraging the integration of art into the architecture of municipal structures, facilities, parks, open space, and other public areas.
  - Involving artists and specialized design professionals in the design, implementation, and integration of art in public projects.
- **Policy CDD20B:** Continue to identify opportunities for public art in neighborhoods, specifically Redding Downtown and reinforce place-keeping goals by commissioning artwork that is themed, visually distinctive, and associated with the identity, history, and diversity of the city and specific neighborhoods.
- **Policy CDD20C:** Promote public art as an urban beautification effort, engaging and partnering with artists, design professionals, galleries, museums, architects, art professionals, urban planners, universities, community members, businesses, and other stakeholders in prioritizing and working on art projects in the city as funding allows.
- **Policy CDD20I:** Public art should not be considered as a substitute for including appropriate design features in new development. For existing developments, consider blank facades, light poles, medians, utility boxes, mosaic fountains, railings, fire hydrants, parking strips, and underpasses along arterials and automobile-dominated areas for large, prominent public art.

Parks, Trails, and Recreation Element

- **Policy R13H:** Consider establishing a comprehensive landscape and vegetation management program incorporating the City's urban landscape and open space lands to:
  - Enhance the landscape aesthetics of the city.
  - Educate and promote the importance and benefits of urban forest.
  - Minimize heat island effects.
  - Provide shade by creating a canopy.
  - Pursue and establish adequate funding mechanisms to manage and maintain tree planting, maintenance costs, training, removal, and replacement of public trees.
- **Policy R13I:** Update the City's Tree Management Ordinance as necessary to reflect current standards and programs to protect, preserve, restore and replant native trees.

Natural Resources Element

- **Policy NR6A:** Strive to preserve and protect existing native oaks, especially valley oaks that are often associated with riparian habitats, in the design and review of development projects. The preservation of stands of trees within developments is generally preferred over preservation of

individual trees, with the exception of special-status species, heritage trees, and other trees as may be identified in the City's Municipal Code.

- Policy NR6B: Consider identifying appropriate "areas" to be used for the planting of native trees when desirable to offset development impacts to woodland resources. This General Plan explicitly recognizes that there are tradeoffs between the goals and policies that promote infill development over outward expansion and resultant impacts to woodland resources within the future urban footprint.
- Policy NR6C: Periodically review and consider amendments to the City's Tree Management Ordinance to assess tree replacement requirements, tree planting requirements, potential fees or other mechanisms to facilitate the planting of trees in the City and funding of an urban forestry program.
- Policy NR6E: Consider undertaking measures to maintain and expand the urban forest by:
  - Maintaining existing City trees through regular, scheduled service.
  - Planting new trees to replace those that require removal and enhance the street tree canopy, where needed.
  - Requiring street and parking lot tree planting in new development.
  - Working with commercial parking lot owners to improve the shade canopy.
  - Implementing the Zoning Code's tree protection regulations.
  - Using volunteer groups and property owners to plant new trees, care for newly planted trees, maintain young trees, and provide information and instructions regarding such care and maintenance, and
  - Exploring funding opportunities for the urban forest program

5.1.4 IMPACT DISCUSSION

AES-1:	The proposed project would not substantially alter or damage scenic vistas or substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway. [AES-1] [AE-2]

Scenic resources identified in the City's General Plan include the Sacramento River and its tributaries; mountains and foothills; and open hillsides. The General Plan Update would keep existing land use designations and focus on development in areas of the city where services exist or can be expanded or extended. Buildout in accordance with the General Plan Update would consist mainly of infill and redevelopment efforts as well as new development within identified "growth areas". Although new development would alter the appearance of the existing conditions, it would not create a substantial adverse impact on scenic vistas or degrade the City's visual character or quality due to the existing urbanized character of the city. Development under the General Plan Update would adhere to the City's Municipal Code Section 17.60.050, Connections with the natural environment, which requires that the design of a

subdivision take advantage of and integrate natural features into project design. Compliance with Municipal Code Section 17.60.050 would help to ensure that future projects provide opportunity for the public views and access.

There are two eligible scenic highways within the planning area: I-5 and CSR 44 and are surrounded by residential and commercial areas. The nearest state designated highway is 3.4 miles north of the city. Although new development under the General Plan Update would alter the appearance of the existing conditions, it would not create a substantial adverse impact on scenic vistas or degrade the City's visual character or quality due to the urbanized character of the City. Future development under the General Plan Update would be required to comply with Section 18.40.050, Design Criteria, under the City's Municipal Code, which will guide future development characteristics including site design. The General Plan Update would be consistent with the existing visual character of the residential and commercial development throughout the city.

General Plan Update also includes policies aimed to preserve the visual quality and scenic views within the City and ensure that new development would be aesthetically compatible with surrounding areas:

- Policy CDD4D: Work to ensure the design and construction of new bridges complements the surrounding landscape as appropriate.
- Policy CDD8H: Strive to ensure that new developments reflect the existing physical characteristics, building design, streetscape, open space requirements, and urban form that preserve and contribute to the overall character and livability of the established neighborhood.
- Policy CDD12A: Establish design standards for new development that will create more livable and aesthetically pleasing neighborhoods, as funding allows. Promote compatibility between land uses by minimizing impacts to privacy, views, and noise and protecting against intrusions of non-neighborhood traffic.
- Policy CDD14A: Consider establishing design and performance standards for commercial development to ensure that building and site design are compatible with the surroundings in terms of scale, mass, building patterns, building details, location of parking, signage, and landscape and enhance views from major streets and other public areas.

The Public Resources Code §12220(g) defines "Forest land" as land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits. As noted in Section 5.2, *Agriculture and Forestry Resources*, there are a total of 16,466 acres of forested area in the City's SOI (Blue Oak Woodland, Blue Oak-Foothill Pine, Montane Hardwood, and Valley Oak Woodland). Although, buildout in accordance with the General Plan Update would largely consist of infill and redevelopment, development under the proposed project can create aesthetic impacts through the conversion of forest to non-forest lands.

The City's Municipal Code includes Chapter 18.45, Tree Management, which outlines tree removal provisions, tree protection guidelines, and other provisions concerning trees and their management. The ordinance is intended to protect and enhance the community's aesthetic provided by native and non-native trees. The ordinance also sets requirements for the replacement of removed trees, establishes a tree planting program for new development, and requires a tree removal permit for removal of trees on vacant or undeveloped land. In addition, the General Plan Update includes Policy R13I from the Parks, Trails, and Recreation Element which states the City will update the City's Tree Management Ordinance as necessary to reflect current standards and programs to protect, preserve, restore and replant native trees. In addition, the Natural Resources Element includes policies aimed at preserving and protecting trees from future development such as Policy NR6A which seeks to preserve and protect existing native oaks in the design and review of development projects. Policy NR6B considers identifying appropriate "areas" to be used for the planting of native trees to offset development impacts to woodland resources. Therefore, following the City's Municipal Code and proposed General Plan Update policies would ensure that development under the General Plan Update would not substantially degrade the views and visual character of the City. Impacts on scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings, would be less than significant.

Level of Significance Before Mitigation: AES-1 would be less than significant.

Mitigation Measures

No mitigation measures are required.

AES-2:	The proposed project would not substantially degrade the existing visual character or quality of the site and its surroundings nor conflict with applicable zoning and other regulation governing scenic quality in non-urbanized areas. [AES-3]

The General Plan Update would keep existing land use designations and focus on development in areas of the city where services exist or can be expanded or extended. Construction activities may include grubbing/clearing grading and compaction of soils, installation of utilities, construction of buildings, paving, and landscaping. While surrounding receptors would have views of construction sites, projects will be temporary in duration and will not be exposed all at once.

The General Plan Update policies would ensure that future development and redevelopment would enhance vitality, context, form, and function. These policies support development in the City and seek to establish and/or retain the City's sense of place. The development under the General Plan Update would be required to comply with existing City regulations that maintain the City's character such as the development code from the City of Redding. The General Plan Update includes policies aimed to preserve the existing visual character of the City while also introducing new development that would be compatible. By complying with the City's existing regulations and the General Plan Update policies, such as Policy CDD8H, Policy CDD12A, and Policy CDD14A mentioned in Impact AES-1, future development would reflect

and maintain the City's existing visual character and resources. As the proposed project would not change land use designations or zone then the General Plan Update would conflict with applicable zoning and other regulations governing scenic quality.

Level of Significance Before Mitigation: AES-2 would be less than significant.

Mitigation Measures

No mitigation measures are required.

AES-3:	The proposed project would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area. [AES-4]

The two major causes of light pollution are glare and spillover light. Spillover light is caused by misdirected light that illuminates areas outside the intended area. Glare is light that shines directly or is reflected from a surface into a viewer's eyes. Spillover light and glare impacts are effects of a project's lighting on adjoining uses and areas.

Light and glare may be caused by street and parking lot lighting, building or landscape lighting, illuminated signs, recreational facilities, and to some extent interior lighting of residential and nonresidential buildings. Materials such as glass, metal, and polished surfaces can contribute to glare. Excessive light and glare can interfere with the scenic quality of an area and contribute to light pollution.

Future development under the General Plan Update would contribute to light pollution. For instance, the conversion of underutilized or vacant areas into residential or commercial uses would introduce new sources of light. However, future development and redevelopment projects in the City would be required to comply with the City's Municipal Code. For example, development of commercial, office, and industrial projects would be required to comply with the City of Redding Municipal Code Section 18.40.090, Lighting, which eliminates light spillover and glare. In addition, Municipal Code Section 18.41.090, Lighting, has guidelines and regulations for lighting pertaining to off-street parking areas for nonresidential uses in order to mitigate unreasonable annoyance to occupants of neighboring properties or the general public. In addition, the General Plan Update includes Policy CDD16E which would require adopting a lighting layout for the City to identify the hierarchy of streets and appropriate streetscape elements. Following regulations set forth in the Municipal Code and policy in the General Plan would not generate substantial additional light and glare and the impact would be less than significant.

Level of Significance Before Mitigation: AES-3 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.1.5 CUMULATIVE IMPACTS

AES-4	The proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in less-than-significant cumulative impacts with respect to aesthetics. [AES-5]

The General Plan Update could result in changes to the visual character and quality of Redding through development of undeveloped areas and/or changes to the character of existing communities. However, goals and policies in the proposed General Plan Update, combined with other local regulations, would reduce project-level aesthetic impacts to a less-than-significant level.

When combined with the overall growth trends in the region, the conversion of the area around the City from a rural (homes on large land holdings) to a more urban appearance (more buildings, built environment) will change the visual appearance of the City and areas around the City. This continues a trend of development in the region that started when the City incorporated in 1887. While the proposed project does not change the existing land use pattern it does pull back planning area boundaries by approximately 18 percent to reduce the potential for annexation outside of the adopted sphere of influence. (See Figures 3-2 and 3-3) In addition, City policies in the General Plan as well as mandates from the state, encourage the efficient use of land and incentivize infill development. Economics suggest that rebuilding or enhancing areas that already have water, sewer, and other public services, saves the cost of extending new services to undeveloped area. The proposed project would be expected to result in less expansion into the rural area surrounding the City in favor of a compact urban form that makes efficient use of existing resources. As a result, while there will be change in the views of agricultural land that surround the City as expansion occurs, the expansion will be managed through the General Plan, and is unlikely to result in a cumulatively significant aesthetic impact. In addition to local policies to avoid urbanization of open space, the California's Scenic Highway Program would help mitigate potential impacts along scenic corridors by preserving views and open space land.

Light pollution has the potential to become an issue of increasing concern in the region as new development contributes additional outdoor lighting installed for safety and other reasons. Redding may be adversely affected not only by light pollution from development. However, future development in all jurisdictions will be subject to the California Building Code standards that would prevent potential impacts associated with light and glare. Overall, the cumulative aesthetic impact would be less than significant.

Level of Significance Before Mitigation: AES-4 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.1.6 REFERENCES

California Department of Transportation (Caltrans). 2022 (accessed). Scenic Highways: California State Scenic Highway. Accessed May 2, 2022. https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways.

Redding, City of. 2022a. Downtown Redding Specific Plan Update. https://www.cityofredding.org/home/showpublisheddocument/5529/637932394784630000.

_____. 2022b, December 11 (accessed). About Us. https://www.cityofredding.org/about-us.

_____. 2022c, December 11 (accessed). Historic Redding California. https://www.cityofredding.org/about-us/brief-history-of-redding.

5.2 AGRICULTURE AND FORESTRY RESOURCES

This chapter describes the regulatory framework and existing conditions in the City of Redding related to agriculture and forestry resources, and the potential impacts of the proposed project on agriculture and forestry resources.

5.2.1 ENVIRONMENTAL SETTING

5.2.1.1 REGULATORY FRAMEWORK

State Regulations

California General Plan Law

The California Government Code (§ 65302(d)) requires the general plan to include an open space and conservation element for the conservation, development, and utilization of natural resources—including water and its hydraulic force, forests, soils, rivers and other waters, harbors, fisheries, wildlife, minerals, and other natural resources. The conservation element must consider the effect of development on natural resources that are on public lands. The element must also cover:

- The reclamation of land and waters.
- Prevention and control of the pollution of streams and other waters.
- Regulation of the use of land for the accomplishment of the conservation plan.
- Prevention, control, and correction of the erosion of soils, beaches, and shores.
- Protection of watersheds.
- Location, quantity, and quality of the rock, sand, and gravel resources.
- Waterways, flood corridors, riparian habitats, and land that may accommodate floodwater for groundwater recharge and stormwater management.

In October 2017, the state legislature passed SB 732, which authorizes a city to develop an agricultural land component of the open space element or a separate agricultural element in its general plan. For local governments that choose this option, the bill authorizes the Department of Conservation to award grants, bond proceeds, and other assistance provided the element meets certain requirements.

Farmland Mapping and Monitoring Program

The California Natural Resources Agency is charged with restoring, protecting, and maintaining the state's natural, cultural, and historical resources. The State Department of Conservation (DOC) provides technical services and information to promote informed land use decisions and sound management of the State's

natural resources. DOC manages the Farmland Mapping and Monitoring Program (FMMP), which supports agriculture throughout California by developing maps and statistical data for analyzing land use impacts to farmland. FMMP publishes a field report for each county in the state. The most recent field report for Shasta County was published in 2018. The field report categorizes land by agricultural production potential, according to the following classifications:

- Prime Farmland has the best combination of physical and chemical features able to sustain long-term agricultural production. Prime Farmland has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agriculture production at some time during the four years prior to the mapping date.
- Farmland of Statewide Importance is like Prime Farmland, but with minor shortcomings, such as steeper slopes or less ability to store moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
- Unique Farmland consists of lesser quality soils used to produce the state's leading agricultural crops. This land is usually irrigated but may include no irrigated orchards or vineyards as found in some climatic zones in California. Land must have been farmed at some time during the four years prior to the mapping date.
- Farmland of Local Importance includes dryland grain producing lands and farmlands that are presently irrigated but do not meet the soil characteristics of Prime or Statewide. The majority of these farmlands are located within the Anderson Cottonwood Irrigation District. These soils include Newton gravelly loam (8 to 15 percent slopes), Moda loam, seeped (0 to 3 percent slopes), Moda loam, shallow (0 to 5 percent slopes), and Hillgate loam (DOC 2018).
- Grazing Land is the land on which the existing vegetation is suited to the grazing of livestock.
- Confined Animal Agriculture lands include poultry facilities, feedlots, dairy facilities, and fish farms. In some counties, confined animal agriculture is a component of the farmland of local importance category.
- Nonagricultural and Natural Vegetation includes heavily wooded, rocky, or barren areas; riparian and wetland areas; grassland areas that do not qualify for grazing land due to their size or land management restrictions; small water bodies; and recreational water ski lakes. Constructed wetlands are also included in this category.
- Semi-agricultural and Rural Commercial Land includes farmstead, agricultural storage and packing sheds, unpaved parking areas, composting facilities, equine facilities, firewood lots, and campgrounds.
- Vacant or Disturbed Land includes open field areas that do not qualify for an agricultural category, mineral and oil extraction areas, off-road vehicle areas, electrical substations, channelized canals, and rural freeway interchanges.
- Rural Residential Land includes residential areas of one to five structures per 10 acres.

- **Urban and Built-Up Land** is occupied by structures with a building density of at least one unit per 1.5 acres, or approximately six structures to a 10-acre parcel. Common examples include residential structures, industrial structures, commercial structures, institutional facilities, cemeteries, airports, golf courses, sanitary landfills, sewage treatment structures, and water control structures.
- **Water** is used to describe perennial water bodies with an extent of at least 40 acres.

California Land Conservation Act (Williamson Act)

The California Land Conservation Act of 1965, better known as the Williamson Act, conserves agricultural and open space lands through property tax incentives and voluntary restrictive land use contracts administered by local governments under State regulations. Private landowners voluntarily restrict their land to agricultural and compatible open space uses under minimum 10-year rolling term contracts, with counties and cities also acting voluntarily. In return, restricted parcels are assessed for property tax purposes at a rate consistent with their actual use, rather than potential market value. Nonrenewal status is applied to Williamson Act contracts that are within the nine-year termination process, during which the annual tax assessment for the property gradually increases.

Forestland and Timberland Protection

State regulations such as the Forest Taxation Reform Act of 1976 and the Z'berg-Nejedly Forest Practice Act of 1973 (California Forest Practice Act) provide for the preservation of forest lands from encroachment by other, incompatible land uses and for oversight of the management of forest practices and forest resources.

Public Resources Code Section 12220(g) defines "forest land" for the purposes of CEQA as land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water-quality, recreation, and other public benefits.

The California Timberland Productivity Act of 1982, like the Land Conservation Act, was passed to encourage the production of timber resources. Government Code Section 51104(g) defines "Timber," "Timberland," and "Timberland Production Zone" for the purposes of CEQA and "Timberland Preserve Zone," which may be used in city and county general plans.

- **"Timber"** means trees of any species maintained for eventual harvest for forest production purposes, whether planted or of natural growth, standing or down, on privately or publicly owned land, including Christmas trees, but does not mean nursery stock.
- **"Timberland"** means privately owned land, or land acquired for State forest purposes, which is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses, and which is capable of growing an average annual volume of wood fiber of at least 15 cubic feet per acre.

- **"Timberland Production Zone"** or **"TPZ"** means an area which has been zoned pursuant to Section 51112 or 51113 and is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses, as defined in subdivision (h). With respect to the general plans of cities and counties, "Timberland Preserve Zone" means "Timberland Production Zone."

Local Regulations

2000-2020 Redding General Plan

The following policies are included in the existing General Plan regarding agricultural resources.

Community Development & Design Element

- **Goal CDD8:** Promote the development of a cohesive, well-defined City.
  - **Policy CDD8A:** Maintain well-defined community edges using open-space buffers, greenbelts, agricultural lands, stream courses, clustered development, and other appropriate types of landscape and design features.

Natural Resources Element

- **Goal NR15:** Promote the economic viability of agriculture in areas suited for agriculture use.
  - **Policy NR15A:** Protect existing prime agricultural soils outside the primary and secondary growth areas and freeway interchange areas with lot sizes (five acres and larger) capable of supporting agricultural operations.
  - **Policy NR15B:** Discourage the cancellation of Williamson Act contracts until it is demonstrated that the lands with such contracts will be needed for urban development in the immediate future.
  - **Policy NR15C:** Establish performance criteria to minimize impacts of urban development near existing income-producing agricultural lands on agricultural practices and reduce conflicts between urban and agricultural uses.

City of Redding Municipal Code

Title 18 of Redding's Municipal Code outlines the city's zoning ordinance and establishes regulations governing the use, placement, spacing, and size of development. Specifically, Rural Lands District (Chapter 18.30) prescribes land use regulations for Rural Lands (RL) Districts. Regulations are set for the different land use classifications for RL.

Tree planting requirements for all new construction are outlined in the City's Municipal Code Section 18.45.120, *Tree Planting Requirements*. Specific requirements are set forth depending on the project type such as residential, commercial, and industrial development.

5.2.1.2 EXISTING CONDITIONS

Agricultural Uses

The planning area is primarily classified for residential use, commercial/industrial, and mixed use. Limited agricultural uses such as farming and grazing occur on several isolated parcels some of which are also designated for residential or other uses. More extensive agricultural uses occur within open space areas at the periphery of the Planning Area generally outside of the proposed Primary and Secondary Growth Areas. Notable existing open space areas in the Redding planning area include the Kapusta property, Riverland Open Space, Stillwater Creek, and the "Churn Creek Bottom" area. The Riverland Open Space consists of 54 acres and is located on the east side of the Sacramento River. The area is managed by the City of Redding and Bureau of Land Management. The Kapusta Property contain 100 acres which is managed by the City of Redding and is located south of the City limits, on the west side of the Sacramento River. The Stillwater Creek Area runs north to south along Stillwater Creek and is identified as having prime agricultural soil (Redding 2018).

Agricultural Designations and Williamson Act Contracts

The California Important Farmland Finder designates the city of Redding as primarily Urban and Built-Up Land (DOC 2023). As shown in Figure 5.2-1, *Designated Farmland within the City of Redding*, Prime Farmland is located in the vicinity of State Route 273 and South Bonnyview Road inside City limits. Figure 5.2-2, *Designated Farmland in the Planning Area*, shows the locations of designated farmland within the entirety of the Planning Area. There are no Williamson contracts within the planning area (DOC 2017). Table 5.2-1, *Farmland Acreage in Redding*, shows the acreages of existing farmland designated by the Department of Conservation in the City of Redding's City Limits and Planning Area.

TABLE 5.2-1 FARMLAND ACREAGE IN REDDING (ACRES)

Farmland Type	City Limits	SOI[1]	Planning Area[2]
Prime Farmland	149	60	953
Farmland of Statewide Importance	1	--	84
Farmland of Local Importance	444	8	474
Unique Farmland	12	--	12
TOTAL	**606**	**68**	**1,523**

Source: DOC 2018

[1] These values reflect the acreage of farmland within the SOI excluding farmland within the City limits

[2] These values reflect the acreage of farmland in the Proposed Planning Area excluding farmland within the City limits and SOI

Forestland and Timberland

The City of Redding is near two national park and recreation areas. The Lassen Volcanic National Park is located 48 miles east of the City of Redding and the Whiskeytown National Recreation Area is located eight miles west of the City.

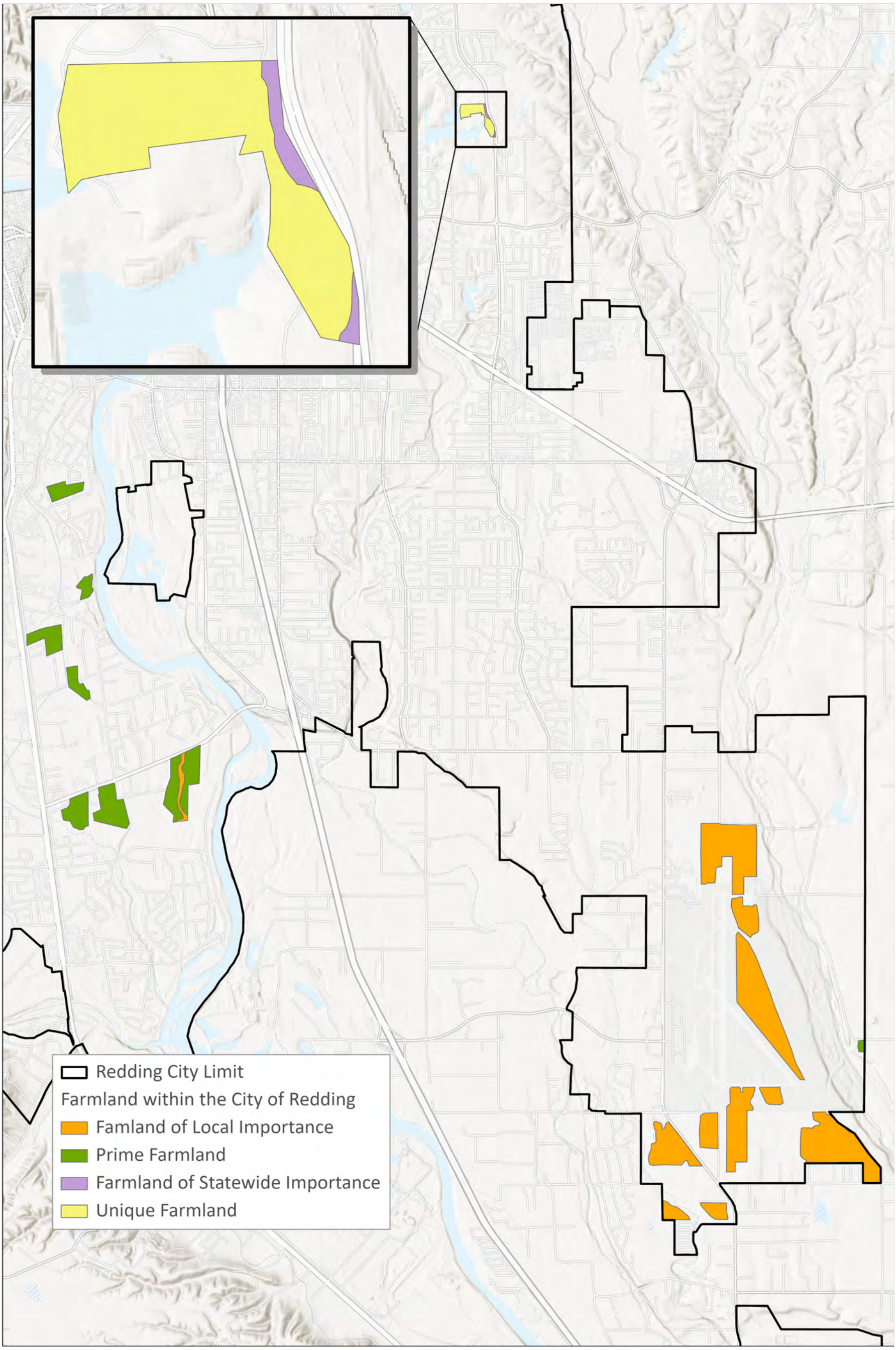
The City of Redding does not designate any land within the City, SOI, or Planning Area as "Timber", "Timberland", or "Timberland Production Zone", according to Government Code Section 51104(g). As shown in Figure 5.4-1, *CalVeg Land Cover*, in Chapter 5.4, *Biological Resources*, forest land cover in the Redding SOI consists of Blue Oak Woodland, Blue Oak-Foothill Pine, Montane Hardwood, and Valley Oak Woodland land cover types. Table 5.2-2, *Forestland Acreage in Redding SOI*, shows the acreages of these forestland cover types.

TABLE 5.2-2 FORESTLAND ACREAGE IN REDDING SOI

Land Cover Type	Acres
Blue Oak Woodland	8,813
Blue Oak-Foothill Pine	6,275
Montane Hardwood	54
Valley Oak Woodland	1,324
TOTAL	**16,466**

Source: ECORP (Appendix 5.4-1)

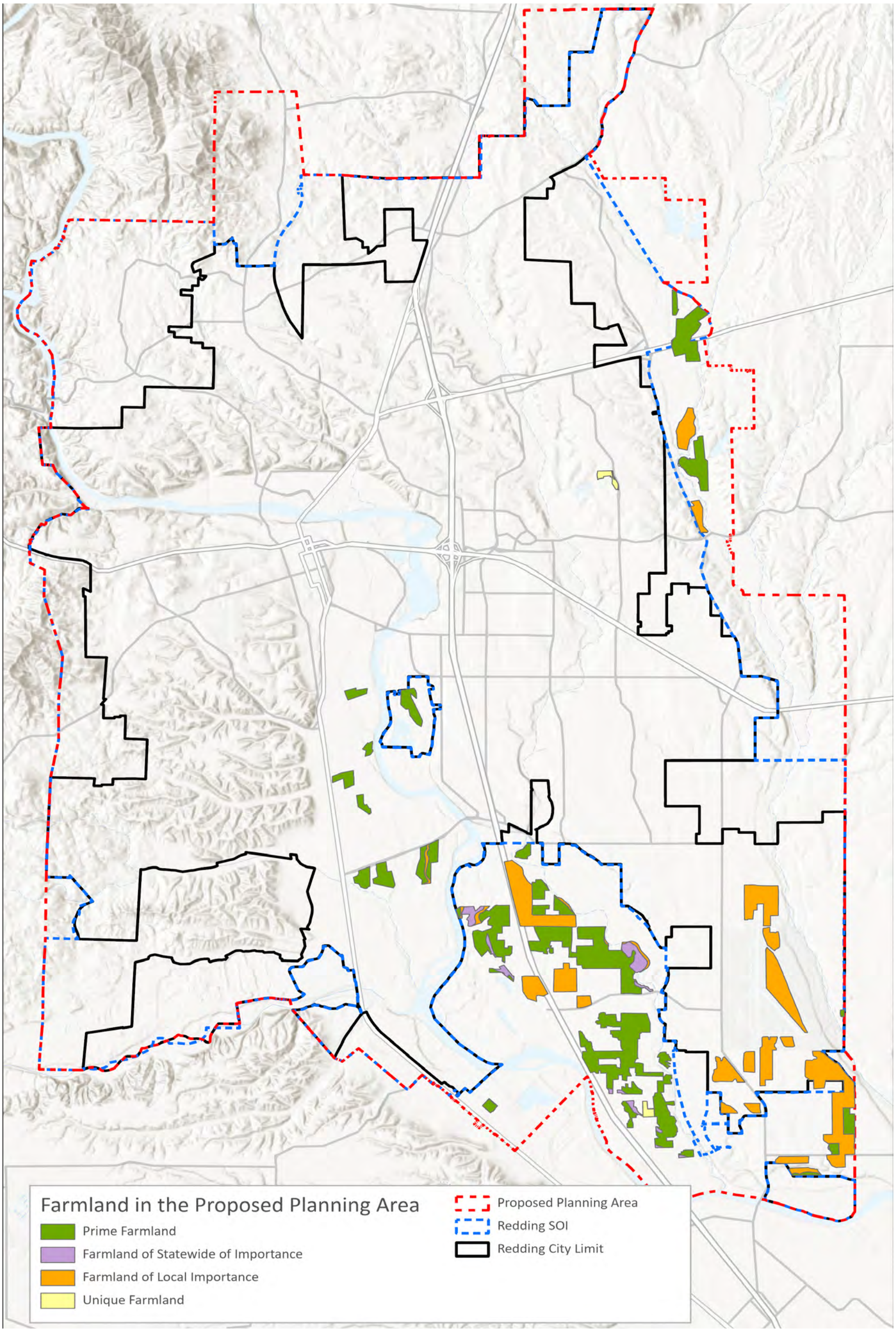
5.2 AGRICULTURAL AND FORESTRY RESOURCES



Source: Generated using ArcMap, 2023; City of Redding GIS 2017, 2021, and 2022; California Department of Conservation, 2018.

Figure 5.2-1
Designated Farmland within the City of Redding

5.2 AGRICULTURAL AND FORESTRY RESOURCES



Source: Generated using ArcMap, 2023; City of Redding GIS 2017, 2021, and 2022; California Department of Conservation, 2018.

0 2
Scale (Miles)

Figure 5.2-2
Designated Farmland in the Planning Area

5.2.2 THRESHOLDS OF SIGNIFICANCE

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

AG-1 Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency to non-agricultural use.

AG-2 Conflict with existing zoning for agricultural use, or a Williamson Act contract.

AG-3 Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g)).

AG-4 Result in the loss of forest land or conversion of forest land to non-forest use.

AG-5 Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use.

AG-6 In combination with past, present, and reasonably foreseeable projects, result in cumulative impacts with respect to agricultural and forestry resources.

5.2.3 PROPOSED GENERAL PLAN POLICIES

The following are relevant policies of the Redding General Plan Update, which may reduce impacts to agriculture and forestry resources as a result of implementation of the proposed project.

Community Development and Design Element

- **Policy CDD6B:** Consider establishing hillside development standards to:
  - Decrease allowable residential densities with an increase in site slope.
  - Limit excessive grading on slopes.
  - Encourage the use of multiple levels where appropriate, so buildings are set into and stepped down the hill.
  - Minimize deforestation and disturbance of native vegetation outside the approved building footprints and street utility corridors, while considering the Local Hazard Mitigation Plan (LHMP) for wildland fire protection.

- **Policy CDD7A:** Strive to maintain well-defined community edges using open space buffers, greenbelts, agricultural lands, stream corridors, and other natural features. Where this is not feasible, utilize City-wide "gateway" treatments through signage and/or identifiable landscape features or other aesthetic elements.

Natural Resources Element

- **Policy NR12A**: Consider requiring buffers for new development to minimize impacts of adjacent active agricultural operations to reduce conflicts between urban and agricultural uses.
- **Policy NR12B:** New development proposed on "prime" soils and/or Farmland of Local Importance should be encouraged to provide opportunities for community gardens, edible landscape gardens, community food forests (landscapes with trees, shrubs, and herbs, consisting of primarily edible plants), or similar projects to enable residents and community members to grow local food produce.
- **Policy NR12C**: Strive to avoid fragmentation and conversion of agriculturally managed land in high-fire severity zones where fragmentation, conversion, or change in management could increase the risk of fire to the community.
- **Policy NR12D**: Explore the appropriateness of expanding the types of zoning districts that allow hobby or small-scale (non-cannabis) commercial agricultural uses in recognition that active farming operations when appropriately located and managed, are not inherently detrimental to surrounding properties and can be a benefit to the community.

5.2.2 IMPACT DISCUSSION

AG-1:	The proposed project would convert Prime Farmland to urban land use. [Threshold AG-1]

Figure 5.2-2 shows that the Planning Area contains areas designated as Prime Farmland south along Highway 273, South Bonnyview Road and the Sacramento River. The areas designated as Prime Farmland are zoned to allow non-agricultural use such as public and residential development. Therefore, development consistent with the General Plan could allow the conversion of farmlands of concern under CEQA, resulting in potential impacts. The proposed project's Natural Resources Element includes Policy NR 12B which aim to encourage the incorporation of agricultural activities within new developments located on these soils and Policy NR12A, which encourages buffers for new development to minimize impacts of adjacent to active agricultural operations to reduce conflicts between urban and agricultural uses. Policy NR12D addresses potential to allow small-scale farming. However, the designations of farmlands of concern under CEQA for non-agricultural uses in the General Plan land use map could lead to the conversion of such farmland to non-agricultural uses regardless of the listed polices.

Level of Significance Before Mitigation: Impact AG-1 would be potentially significant.

Mitigation Measures

The criterion for mitigation under CEQA is feasible mitigation that lessens a project's impacts. Agricultural conservation easements are a possible mitigation measure under CEQA. Programs that establish agricultural conservation easements and in-lieu fees for mitigation banking are most effective when determined concurrent with project approval. However, the effectiveness and extent of which future projects would opt-in to agricultural conservation easements as mitigation measure cannot be determined in this analysis, therefore this impact would remain significant and unavoidable.

Level of Significance After Mitigation: Impact AG-1 would be significant and unavoidable.

AG-2:	The proposed project would not require a zone change or general plan amendment and/or conflict with an existing Williamson contract nor would the proposed project conflict with existing zoning for timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g)). [Threshold AG-2] [Threshold AG-3]

The proposed project does not require a zone change or general plan amendment and would not conflict with existing zoning for agricultural use. The General Plan Update would continue to allow residential categories which allow for housing and permit agricultural uses. Furthermore, there are currently no Williamson Act contracts within the SOI. As such, the proposed project would not conflict with existing zoning for agricultural use or existing Williamson contract. Therefore, no impacts would occur.

There are no areas zoned as forestland in the City of Redding. The Redding Zoning Code and General Plan zone and designate Rural Lands (RL) and Open Space/Greenway, respectively, for agricultural and open spaces but does not specify forest or timberland. Forest and timber lands defined by the State include both land that is used for timber harvesting and other forested land that has aesthetic, recreational, and biological amenities. The General Plan Update would not conflict with existing zoning for, or cause rezoning of forestland, or timberland zoned Timberland Production. Thus, no impact would occur.

See Section 5.1, Aesthetics, of this EIR in regard to consideration of aesthetics of trees as defined in Public Resources Code §12220(g).

Level of Significance Before Mitigation: Impact AG-2 would have no impact.

Mitigation Measures

No mitigation measures are required.

AG-3:	The proposed project would result in loss of forest land or conversion of forest land to non-forest use [Threshold AG-4]

Government Code Section 51104(g) defines "Timber," "Timberland," and "Timberland Production Zone" for CEQA and "Timberland Preserve Zone" in city and county general plans. Timber refers to trees maintained for forest production purposes but does not include nursery stock. Timberland is land used for growing and harvesting timber, or for other uses, with an average annual volume of wood fiber of at least 15 cubic feet per acre. Timberland Production Zone (TPZ) is an area zoned for growing and harvesting timber or related uses and are commercially viable. There are no TPZ lands within the Planning Area of the City. As such, the General Plan Update can't impact them or result in conversion of forested areas to non-forested areas.

As mentioned, Table 5.2-2, *Forestland Acreage in Redding SOI*, there is Oak woodland within the City's SOI however these trees do not have commercial use of the land but do have aesthetic value. The discussion of oak woodland can be found in Section 5.1, Aesthetics, of the EIR.

The General Plan Update could result in the conversion of oak woodlands and other upland habitats for future development. The proposed project would focus development primarily on infill sites and sites within the identified growth areas and would be excluded from areas classified as "Greenway", zoned "OS" Open Space District, or contained within private open space easement (approximately 8,000 acres within the 2023 Redding City limits). However, oak woodland areas outside of the Greenway classification are designated for residential and non-residential land uses. A portion of the Planning Area's oak woodland and similar habitats occur within these non-Greenway areas and new development will result in disturbance of this resource.

Natural Resources Element Policy NR6A addresses preservation of native oaks, and Policy NR6B addresses efforts to establish areas for the replanting of native trees. The Redding Municipal Code Section 18.45.120, Tree Planting Requirements, includes requirements to plant trees based on building square footage, number of parking spaces provided in a project, and along public street frontages. Regardless, even applying a combination of these policies, the "Greenway" protections afforded by this General Plan and implementation of the tree management provisions of the Municipal Code, a certain amount of woodland habitat will be impacted by future development. Therefore, impacts to forestland under the proposed project would be potentially significant.

Level of Significance Before Mitigation: Impact AG-3 would be potentially significant.

Mitigation Measures

No feasible mitigation measures. Although the goals and policies General Plan Update would help to minimize impacts to loss of woodland and other habitat types, and result in the planting of trees, the proposed project could potentially convert forested areas to non-forested uses to accommodate future demand. Therefore, this impact is significant and unavoidable.

Level of Significance After Mitigation: Impact AG-3 would be significant and unavoidable.

AG-4:	The proposed project would not involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use. [Threshold AG-5]

Although farmland and agricultural uses are limited within the City Limits and identified growth areas of this General Plan, if development were to occur under the existing land use classifications, such lands would be converted to non-agricultural uses.

The General Plan Update includes goals, policies, actions, and regulations that reduce conflicts between agricultural operations and urban uses that could potentially result in farmland conversion such as Policy CDD7A, which requires to maintain well-defined community edges using open-space buffers, greenbelts, agricultural lands, stream courses, clustered development, and other appropriate types of landscape and design features. Policy NR12A addresses buffers for new development to minimize impacts of adjacent to active agricultural operations to reduce conflicts between urban and agricultural uses. Establishment of buffers can help minimize conflicts between agricultural and urban land uses. Policy NR12B encourages new projects constructed on prime agricultural soils to provide opportunities for community gardens, food forests, etc. and Policy NR12D directs the City to explore amendments to the Zoning Ordinance to recognize existing, active farming operations.

Together, these goals, policies, and regulations would minimizechanges to the agricultural that would result in the conversion of farmlands or forest land of concern under CEQA to nonagricultural or non-forest uses, resulting in a less-than-significant impact.

Level of Significance Before Mitigation: Impact AG-4 would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation: Impact AG-4 would be less than significant.

5.2.4 CUMULATIVE IMPACTS

AG-5	The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in significant and unavoidable cumulative impacts with respect to agricultural and forestry resources.

Development under the General Plan Update would contribute to cumulative agricultural impacts. Although the General Plan Update goals, policies, and regulations would reduce and partially offset Redding's contribution to these impacts, the overall cumulative agricultural impact would remain significant. Because the amount of growth foreseen in the region and the decisions of surrounding communities regarding conversion of agricultural land are outside the control of Redding, the impact is significant and unavoidable.

Level of Significance Before Mitigation: AG-5 would be potentially significant.

Mitigation Measures

There are no feasible mitigation measures.

Although the goals, policies, and regulations of the General Plan Update would reduce and partially offset regional agricultural impacts, the proposed project would contribute to cumulatively significant agricultural impacts in the region. The amount of growth foreseen in the region and the decisions of Shasta County where the vast majority of farmlands within the Planning Area are located regarding conversion of agricultural land are outside the control of the City of Redding. Therefore, this impact is significant and unavoidable.

Level of Significance Before Mitigation: AG-5 would be significant and unavoidable.

5.2.5 REFERENCES

California Department of Forestry and Fire Protection (CAL FIRE). 2023 (accessed). California Vegetation – WHR13 Types. https://gis.data.ca.gov/maps/CALFIRE-Forestry::california-vegetation-whr13-types/about.

California Department of Conservation (DOC). 2017. State of California Williamson Act Contract Land. https://planning.lacity.org/eir/HollywoodCenter/Deir/ELDP/(E)%20Initial%20Study/Initial%20Study/Attachment%20B%20References/California%20Department%20of%20Conservation%20Williamson%20Map%202016.pdf.

_____. 2018. Farmland of Local Importance. https://www.conservation.ca.gov/dlrp/fmmp/Documents/Farmland_of_Local_Importance_2018.pdf.

_____. 2023, January 11 (accessed). California Important Farmland Finder. https://maps.conservation.ca.gov/DLRP/CIFF/.

Redding, City of. 2018. Open Space Strategy. https://www.cityofredding.org/home/showpublisheddocument/20000/636728655614000000.

This page intentionally left blank.

5.3 AIR QUALITY

This section describes the potential impacts to air quality due to the implementation of the 2023-2045 General Plan Update. This section describes the regulatory framework and existing conditions, identifies criteria used to determine impact significance, provides an analysis of the potential air quality impacts, and identifies General Plan policies and feasible mitigation measures that could minimize any potentially significant impacts.

This evaluation is based on the methodology recommended by the Shasta County Air Quality Management District (SCAQMD). The analysis focuses on air pollution from regional emissions and localized pollutant concentrations. Criteria air pollutant emissions modeling is included in Appendix 5.3-1, *Air Quality and Greenhouse Gas Emissions Data*, of this Draft Environmental Impact Report (EIR). Transportation-sector impacts are based on trip generation and vehicle miles traveled (VMT) provided by GHD (see Chapter 5.16-1, Transportation.

5.3.1 ENVIRONMENTAL SETTING

5.3.1.1 TERMINOLOGY

- **AAQS.** Ambient Air Quality Standards
- **CES.** CalEnviroScreen. CES is a mapping tool that helps identify the California communities most affected by sources of pollution and where people are often especially vulnerable to pollution's effects.
- **Concentrations.** Refers to the amount of pollutant material per volumetric unit of air. Concentrations are measured in parts per million (ppm), parts per billion (ppb), or micrograms per cubic meter ($\mu g/m^3$).
- **Criteria Air Pollutants.** Those air pollutants specifically identified for control under the Federal Clean Air Act (currently seven—carbon monoxide, nitrogen oxides, lead, sulfur oxides, ozone, and coarse and fine particulates).
- **DPM.** Diesel particulate matter.
- **Emissions.** Refers to the actual quantity of pollutant, measured in pounds per day or tons per year.
- **ppm.** Parts per million.
- **Sensitive receptor.** Land uses that are considered more sensitive to air pollution than others due to the types of population groups or activities involved. These land uses include residential, retirement facilities, hospitals, and schools.
- **TAC.** Toxic air contaminant.
- **$\mu g/m^3$.** Micrograms per cubic meter.
- **VMT.** Vehicle miles traveled.

5.3.1.2 AIR POLLUTANTS OF CONCERN

Criteria Air Pollutants

The pollutants emitted into the ambient air by stationary and mobile sources are categorized as primary and/or secondary pollutants. Primary air pollutants are emitted directly from sources. Carbon monoxide (CO), volatile organic compounds (VOC), nitrogen oxides (NO_x), sulfur dioxide (SO_2), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb) are primary air pollutants. Of these, CO, SO_2, NO_2, PM_{10}, and $PM_{2.5}$ are "criteria air pollutants," which means that AAQS have been established for them. VOC and NO_X are criteria pollutant precursors that form secondary criteria air pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O_3) and nitrogen dioxide (NO_2) are the principal secondary pollutants. Table 5.3-1, *Criteria Air Pollutant Health Effects Summary*, summarizes the potential health effects associated with the criteria air pollutants.

TABLE 5.3-1 CRITERIA AIR POLLUTANT HEALTH EFFECTS SUMMARY

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

Sources: CARB 2022; South Coast AQMD 2005

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

- **Carbon Monoxide (CO)** is a colorless, odorless gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. CO is a primary criteria air pollutant. CO concentrations tend to be the highest during winter mornings with little to no wind, when surface-based inversions trap the pollutant at ground levels. The highest ambient CO concentrations are generally found near traffic-congested corridors and intersections. The primary adverse health effect associated with CO is interference with normal oxygen transfer to the blood, which may result in tissue oxygen deprivation (CARB 2023a). The Northern Sacramento Valley Air Basin (NSVAB) is designated under the California and National AAQS as being in attainment of CO criteria levels (CARB 2022).
- **Nitrogen Oxides (NO_x)** are a by-product of fuel combustion and contribute to the formation of ground-level O_3, PM_{10}, and $PM_{2.5}$. The two major forms of NO_x are nitric oxide (NO) and nitrogen dioxide (NO_2). NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure. The principal form of NO_2 produced by combustion is NO, but NO reacts with oxygen quickly to form NO_2, creating the mixture of NO and NO_2 commonly called NO_x. NO_2 acts as an acute irritant and is more injurious than NO in equal concentrations. At atmospheric concentrations, however, NO_2 is only potentially irritating. NO_2 absorbs blue light; the result is a brownish-red cast to the atmosphere and reduced visibility. NO_2 exposure concentrations near roadways are of particular concern for susceptible individuals, including people with asthma, children, and the elderly. Current scientific evidence links short-term NO_2 exposures, ranging from 30 minutes to 24 hours, with adverse respiratory effects, including airway inflammation in healthy people and increased respiratory symptoms in people with asthma. Also, studies show a connection between breathing elevated short-term NO_2 concentrations and increased visits to emergency departments and hospital admissions for respiratory issues, especially asthma (USEPA 2023). The NSVAB is designated an attainment area for NO_2 under the National and California AAQS (CARB 2022).
- **Sulfur Dioxide (SO_2)** is a colorless, pungent, irritating gas formed by the combustion of sulfurous fossil fuels. It enters the atmosphere as a result of burning high-sulfur-content fuel oils and coal and from chemical processes at chemical plants and refineries. Gasoline and natural gas have very low sulfur content and do not release significant quantities of SO_2. When sulfur dioxide forms sulfates (SO_4) in the atmosphere, together these pollutants are referred to as sulfur oxides (SO_X). Thus, SO_2 is both a primary and secondary criteria air pollutant. At sufficiently high concentrations, SO_2 may irritate the upper respiratory tract. Current scientific evidence links short-term exposures to SO_2, ranging from 5 minutes to 24 hours, with an array of adverse respiratory effects including bronchoconstriction and increased asthma symptoms. These effects are particularly important for asthmatics at elevated ventilation rates (e.g., while exercising or playing.) At lower concentrations and when combined with particulates, SO_2 may do greater harm by injuring lung tissue. Studies also show a connection between short-term exposure and increased visits to emergency departments and hospital admissions for respiratory illnesses, particularly in at-risk populations including

children, the elderly, and asthmatics (USEPA 2023) The NSVAB is designated attainment under the California and National AAQS (CARB 2022).

- **Suspended Particulate Matter (PM_{10} and $PM_{2.5}$)** consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. Two forms of fine particulates are now recognized and regulated. Inhalable coarse particles, or PM_{10}, include particulate matter with an aerodynamic diameter of 10 microns (i.e., 10 millionths of a meter or 0.0004 inch) or less. Inhalable fine particles, or $PM_{2.5}$, have an aerodynamic diameter of 2.5 microns (i.e., 2.5 millionths of a meter or 0.0001 inch) or less. Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. Both PM_{10} and $PM_{2.5}$ may adversely affect the human respiratory system, especially in people who are naturally sensitive or susceptible to breathing problems. EPA scientific review concluded that $PM_{2.5}$, which penetrates deeply into the lungs, is more likely than PM_{10} to contribute to health effects and at concentrations that extend well below those allowed by the current PM_{10} standards. These health effects include premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms (e.g., irritation of the airways, coughing, or difficulty breathing). The Shasta County portion of the NSVAB is in attainment for PM_{10} and $PM_{2.5}$ under the California AAQS (CARB 2022).
- **Ozone (O_3)** is commonly referred to as "smog" and is a gas that is formed when VOCs and NO_x, both by-products of internal combustion engine exhaust, undergo photochemical reactions in the presence of sunlight. O_3 is a secondary criteria air pollutant. O_3 concentrations are generally highest during the summer months when direct sunlight, light winds, and warm temperatures create favorable conditions for its formation. O_3 poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. Breathing O_3 can trigger a variety of health problems, including chest pain, coughing, throat irritation, and congestion. It can worsen bronchitis, emphysema, and asthma. Ground-level O_3 also can reduce lung function and inflame the linings of the lungs. Repeated exposure may permanently scar lung tissue. O_3 also affects sensitive vegetation and ecosystems, including forests, parks, wildlife refuges, and wilderness areas. In particular, O_3 harms sensitive vegetation, including forest trees and plants during the growing season (EPA 2023). The SJVAB is designated nonattainment under the California AAQS and designated attainment under the National AAQS (CARB 2022).
- **Reactive Organic Gases (ROGs)/Volatile Organic Compounds (VOCs)** are compounds composed primarily of atoms of hydrogen and carbon. Internal combustion associated with motor vehicle usage is the major source of VOCs. Other sources of VOCs include evaporative emissions associated with the use of paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. There are no ambient air quality standards established for VOCs. However, because they contribute to the formation of O_3, the Shasta County Air Quality Management District has established a significance threshold for this pollutant.

- **Lead (Pb)** is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. As a result of the phasing out of leaded gasoline, metal processing is currently the primary source of lead emissions. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers. The NSVAB is designated in attainment of the California and National AAQS for lead (CARB 2022).

Toxic Air Contaminants

People exposed to TACs at sufficient concentrations and durations may have an increased chance of getting cancer or experiencing other serious health effects. These health effects can include damage to the immune system as well as neurological, reproductive (e.g., reduced fertility), developmental, respiratory, and other health problems (USEPA 2020). By the last update to the TAC list in December 1999, CARB had designated 244 compounds as TACs (CARB 1999). Additionally, CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. There are no air quality standards for TACs. Instead, TAC impacts are evaluated by calculating the health risks associated with a given exposure. The majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most relevant to the proposed project being particulate matter from diesel-fueled engines.

Diesel Particulate Matter

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

Placement of New Sensitive Receptors

Because placement of sensitive land uses falls outside CARB's jurisdiction, CARB developed and approved the *Air Quality and Land Use Handbook: A Community Health Perspective* (2005) to address the siting of sensitive land uses in the vicinity of freeways, distribution centers, rail yards, ports, refineries, chrome-plating facilities, dry cleaners, and gasoline-dispensing facilities. This guidance document was developed to assess compatibility and associated health risks when placing sensitive receptors near existing pollution sources.

CARB's recommendations on the siting of new sensitive land uses identified in Table 5.3-2, *CARB Recommendations for Siting New Sensitive Land Uses*, were based on a compilation of recent studies that evaluated data on the adverse health effects from proximity to air pollution sources.

TABLE 5.3-2 CARB RECOMMENDATIONS FOR SITING NEW SENSITIVE LAND USES

Source/Category	Advisory Recommendations
Freeways and High-Traffic Roads	Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day.
Distribution Centers	Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units [TRUs] per day, or where TRU unit operations exceed 300 hours per week). Take into account the configuration of existing distribution centers and avoid locating residences and other sensitive land uses near entry and exit points.
Rail Yards	Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard. Within one mile of a rail yard, consider possible siting limitations and mitigation approaches.
Ports	Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult local air districts or CARB on the status of pending analyses of health risks.
Refineries	Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation.
Chrome Platers	Avoid siting new sensitive land uses within 1,000 feet of a chrome plater.
Dry Cleaners Using Perchloroethylene	Avoid siting new sensitive land uses within 300 feet of any dry cleaning operation. For operations with two or more machines, provide 500 feet. For operations with three or more machines, consult with the local air district. Do not site new sensitive land uses in the same building with perchloroethylene dry cleaning operations.
Gasoline Dispensing Facilities	Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50-foot separation is recommended for typical gas dispensing facilities.

Source: CARB 2005

The key observation in these studies is that proximity to air pollution sources substantially increases both exposure and the potential for adverse health effects. There are three carcinogenic TACs that constitute the majority of the known health risks from motor vehicle traffic: DPM from trucks and benzene and 1,3-butadiene from passenger vehicles.

In 2017, CARB provided a supplemental technical advisory to the handbook for near-roadway air pollution exposure, *Strategies to Reduce Air Pollution Exposure Near High-Volume Roadways.* Strategies include practices and technologies that reduce traffic emissions, increase dispersion of traffic pollution (or the dilution of pollution in the air), or remove pollution from the air (CARB 2017).

5.3.1.3 REGULATORY BACKGROUND

AAQS have been adopted at the state and federal levels for criteria air pollutants. In addition, both the state and federal government regulate the release of TACs. Land uses in Redding are subject to the rules and regulations imposed by the Shasta County AQMD, the California AAQS adopted by the California Air Resources Board (CARB), and National AAQS adopted by the US Environmental Protection Agency (EPA). Federal, state, regional, and local laws, regulations, plans, or guidelines that are potentially applicable to the proposed project are summarized in this section.

Federal and State Regulations

Ambient Air Quality Standards

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

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

Both California and the federal government have established health-based AAQS for seven air pollutants, which are shown in Table 5.3-3, *Ambient Air Quality Standards for Criteria Pollutants*. These pollutants are ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb). In addition, the state has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles.

TABLE 5.3-3 AMBIENT AIR QUALITY STANDARDS FOR CRITERIA POLLUTANTS

Pollutant	Averaging Time	California Standard [a]	Federal Primary Standard [b]	Major Pollutant Sources
Ozone (O_3) [c]	1 hour	0.09 ppm	*	Motor vehicles, paints, coatings, and solvents.
	8 hours	0.070 ppm	0.070 ppm	
Carbon Monoxide (CO)	1 hour	20.0 ppm	35.0 ppm	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9.0 ppm	
Nitrogen Dioxide (NO_2)	Annual Average	0.030 ppm	0.053 ppm	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
	1 hour	0.18 ppm	0.100 ppm	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	*	0.030 ppm	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	1 hour	0.25 ppm	0.075 ppm	
	24 hours	0.04 ppm	0.14 ppm	
Respirable Particulate Matte (PM_{10}) [d]	Annual Arithmetic Mean	20.0 µg/m^3	*	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	50.0 µg/m^3	150.0 µg/m^3	
Respirable Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	12.0 µg/m^3	12.0 µg/m^3	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	*	35.0 µg/m^3	
Lead (Pb)	30-Day Average	1.5 µg/m^3	*	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Calendar Quarterly	*	1.5 µg/m^3	
	Rolling 3-Month Average	*	0.15 µg/m^3	
Sulfates (SO_4) [e]	24 hours	25 µg/m^3	*	Industrial processes.
Visibility Reducing Particles	8 hours	ExCo[f] =0.23/km visibility of 10≥ miles	No Federal Standard	Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size, and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt.

TABLE 5.3-3 AMBIENT AIR QUALITY STANDARDS FOR CRITERIA POLLUTANTS

Pollutant	Averaging Time	California Standard [a]	Federal Primary Standard [b]	Major Pollutant Sources
Hydrogen Sulfide	1 hour	0.03 ppm	No Federal Standard	Hydrogen sulfide (H_2S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas, and can be emitted as the result of geothermal energy exploitation.
Vinyl Chloride	24 hour	0.01 ppm	No Federal Standard	Vinyl chloride (chloroethene), a chlorinated hydro-carbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites, due to microbial breakdown of chlorinated solvents.

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

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

- **AB 1493: Pavley Fuel Efficiency Standards**. Pavley I is a clean-car standard that reduces emissions from new passenger vehicles (light-duty auto to medium-duty vehicles) from 2009 through 2016. In January 2012, CARB approved the Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025.
- **Heavy-Duty (Tractor-Trailer) GHG Regulation**. The tractors and trailers subject to this regulation must either use EPA SmartWay certified tractors and trailers or retrofit their existing fleet with SmartWay-verified technologies. The regulation applies primarily to owners of 53-foot or longer box-type trailers, including both dry-van and refrigerated-van trailers, and owners of the heavy-duty tractors that pull them on California highways. These owners are responsible for replacing or retrofitting their affected vehicles with compliant aerodynamic technologies and low-rolling-resistance tires. Sleeper-cab tractors

model year 2011 and later must be SmartWay certified. All other tractors must use SmartWay-verified low-rolling-resistance tires. This rule has criteria air pollutant co-benefits.

- SB 1078 and SB 107: Renewables Portfolio Standards. A major component of California's Renewable Energy Program is the renewables portfolio standard established under Senate Bills 1078 (Sher) and 107 (Simitian). Under this standard, certain retail sellers of electricity were required to increase the amount of renewable energy each year by at least 1 percent in order to reach at least 20 percent by December 30, 2010.
- California Code of Regulations (CCR) Title 20: Appliance Energy Efficiency Standards. The 2006 Appliance Efficiency Regulations (20 CCR secs. 1601–1608) were adopted by the California Energy Commission on October 11, 2006, and approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally regulated appliances and non–federally regulated appliances. This code reduces natural gas use from appliances.
- 24 CCR, Part 6: Building and Energy Efficiency Standards. Energy conservation standards for new residential and nonresidential buildings adopted by the California Energy Resources Conservation and Development Commission (now the California Energy Commission) in June 1977. This code reduces natural gas use from buildings.
- 24 CCR, Part 11: Green Building Standards Code. Establishes planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants. This code reduces natural gas use from buildings.

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

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

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

technology" to minimize emissions. To date, CARB has established formal control measures for 11 TACs that are identified as having no safe threshold.

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

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

- 13 CCR Chapter 10 Section 2485.: Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling. Generally restricts on-road diesel-powered commercial motor vehicles with a gross vehicle weight rating of greater than 10,000 pounds from idling more than five minutes.
- 13 CCR Chapter 10 Section 2480: Airborne Toxic Control Measure to Limit School Bus Idling and Idling at Schools. Generally restricts a school bus or transit bus from idling for more than five minutes when within 100 feet of a school.
- 13 CCR Section 2477 and Article 8: Airborne Toxic Control Measure for In-Use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets and Facilities Where TRUs Operate. Regulations established to control emissions associated with diesel-powered TRUs.

Local and Regional Regulations

Shasta County Air Quality Management District (SCAQMD)

The SCAQMD has the responsibility of enforcing federal and State air quality regulations in Shasta County. The SCAQMD adopts and enforces controls on stationary sources of air pollutants through its permit and inspection programs, and it regulates agricultural burning. All projects in Shasta County are subject to applicable SCAQMD rules and regulations in effect at the time of construction. Descriptions of specific rules applicable to the proposed project may include, but are not limited to:

- SCAQMD Rule 2:1, New Source Review, establishes pre-construction review requirements for new and modified stationary sources of air pollution for use of Best Available Control Technology (BACT), analysis of air quality impacts, and to ensure that the operation of such sources does not interfere with the attainment or maintenance of ambient air quality standards. The regulation provides for no net increase in emissions from new or modified stationary sources that emit, or have the potential to emit, 25 tons per year or more of any non-attainment pollutant or its precursors.
- SCAQMD Rule 2:1A, Permits Required, specifies requirements to obtain an Authority to Construct/Permit to Operate for uses that may cause the issuance of air contaminants.

- SCAQMD Rule 2:6, Open Burning: General Provisions, states that burning in the City of Shasta Lake is allowed from November 1 to April 30 when the fire is ignited between the hours of 10:00 AM and 3:00 PM; fires must be completely out by 5:00 PM. This rule also discusses permit requirements for open outdoor burning.
- SCAQMD Rule 2:7, Conditions of Open Burning, includes measures to minimize smoke from open burning.
- SCAQMD Rule 3:15, Cutback and Emulsified Asphalt, includes regulations to limit emissions of volatile organic compounds (VOCs) from the use, manufacture, or sale of cutback and emulsified asphalt in paving, construction, or maintenance of parking lots, streets, and highways.
- SCAQMD Rule 3:16, Fugitive, Indirect, or Non-Traditional Sources, includes measures to minimize the emission of fugitive dust during earth-moving, construction, demolition, bulk storage, and other activities that could result in wind erosion. This rule identifies Reasonably Available Control Measures (RAMC) that could be considered to prevent or reduce the emission and transport of fugitive dust (applying dust suppressants, using fences, barriers, and/or wind breaks/screens, revegetating disturbed surfaces, cleaning paved streets, improving road surfaces, and/or controlling vehicular speeds in unpaved areas.
- SCAQMD Rule 3:23, Fireplace and Solid Fuel Heating Device Usage, establishes emissions limits for woodstoves, pellet stoves, and fireplaces.
- SCAQMD Rule 3:24, Transportation Control Measure (TCM), includes requirements for significant trip generators (a facility that has 100 or more persons scheduled to arrive at one site between the hours of 6:00 AM and 10:00 AM Monday through Friday). The purpose of this rule is to improve air quality, minimize traffic congestion, and encourage ridesharing and other methods to reduce vehicle trips through public education and requiring annual trip reduction reports from significant trip generators.
- SCAQMD Rule 3:31, Architectural Coatings, establishes VOC content limits for architectural coatings that are supplied, sold, offered for sale, applied, solicited for application, or manufactured for use within the County.
- SCAQMD Rule 3:32, Adhesives and Sealants, limits the emissions of VOCs from adhesives and sealants and associated primers, and from related surface preparation solvents, cleanup solvents, and strippers.

Indirect Emission Sources Thresholds

SCAQMD coordinates with the planning agency having jurisdiction over the proposed project to apply standard mitigation measures (SMMs) and best available mitigation measures (BAMMs) to the project as listed in the respective Air Quality Elements (or equivalent). SMMs are applied to all projects, while the list of BAMMs found in the respective Air Quality Element (or equivalent) are reviewed by the planning agency staff for consideration of specific project applicability at two distinct indirect emission thresholds, as shown in Table 5.3-4, *Thresholds of Significance for Criteria Pollutants of Concern*.

TABLE 5.3-4 THRESHOLDS OF SIGNIFICANCE FOR CRITERIA POLLUTANTS OF CONCERN

Threshold	ROG	NO_X	PM_{10}
Level A	25 lbs/day	25 lbs/day	80 lbs/day
Level B	137 lbs/day	137 lbs/day	137 lbs/day

Source: SCAQMD 2003

If the project's indirect and area wide emissions are greater than the Level A thresholds but less than Level B thresholds, appropriate Level A mitigation as listed in the jurisdiction's Air Quality Element (or equivalent) to the General Plan should be implemented by the project applicant. If the project's indirect and area wide emissions remain above the Level B threshold of 137 pounds per day (25 Tons per year) after applying all feasible mitigation measures, the project is considered to have a significant impact from an air quality perspective and an EIR is appropriate for the project.

Air Quality Attainment Plans

Northern Sacramento Valley Air Quality Attainment Plan

The City of Redding is located at the northern end of the NSVAB. In 1994, the air districts in the NSVAB, which includes the Shasta County Air Quality Management District (SCAQMD), prepared an air quality attainment plan for ozone. Updated every three years since adoption, the current 2021 Air Quality Attainment Plan includes forecast reactive organic gases (ROG) and nitrogen oxide (NO_X) emissions (ozone precursors) for the entire NSVAB through the year 2025.

The 2021 Air Quality Attainment Plan provides local guidance for air basins to achieve attainment of ambient air quality standards. Areas that meet ambient air quality standards are classified as attainment areas; areas that do not meet these standards are classified as nonattainment areas. Areas for which there is insufficient data are designated unclassified. The attainment status for the Shasta County portion of the NSVAB is in Table 5.3-5, *Federal and State Ambient Air Quality Attainment Status for Shasta County*. Shasta County is nonattainment for ozone standards (CARB 2023a).

TABLE 5.3-5 FEDERAL AND STATE AMBIENT AIR QUALITY ATTAINMENT STATUS FOR SHASTA COUNTY

Pollutant	Federal	State
8-Hour Ozone (O_3)	Unclassified/attainment	Nonattainment
Coarse Particulate Matter (PM_{10})	Unclassified/attainment	Attainment
Fine Particulate Matter ($PM_{2.5}$)	Unclassified/attainment	Attainment
Carbon Monoxide (CO)	Unclassified/attainment	Unclassified
Nitrogen Dioxide (NO_2)	Unclassified/attainment	Attainment
Sulfur Dioxide (SO_2)	Unclassified/attainment	Attainment

Source: CARB 2023a

Redding Municipal Code

Section 6.12.210, Odor Control

Section 6.12.210, Odor Control, of Chapter 6.12, Cannabis, of the Redding Municipal Code requires that all cannabis businesses shall install a ventilation and filtration system to prevent all odors generated from the cannabis business from escaping from the buildings on site, such that the odor cannot be detected outside of the building(s). The ventilation and filtration system must be approved by the building official and installed prior to commencing operations.

Chapter 16.12, Clearing Grading, Fills, and Excavation

Chapter 16.12 of the Municipal Code establishes minimum requirements for grading, clearing, and erosion and sediment control. The chapter requires issuance of a grading permit prior to any clearing or grading on privately owned land that is larger than one acre in size. Both an interim and a final erosion and sediment control plan are required as part of the grading permit process and must be prepared by a licensed professional and approved by the City Engineer. The plans must address the potential for soil erosion due to stormwater runoff and wind and include best management practices designed to ensure sediment does not leave the construction site. The City is responsible for inspection of construction sites to ensure compliance with provisions of the grading permit.

Section 18.34.030, Permit Requirements for New Development

Section 18.34.030 (B) of the Municipal Code addresses requirements for industrial uses and states that industrial or manufacturing uses which may be objectionable by reason of producing offensive odor, dust, noise, bright lights, vibration, project scale, or traffic volumes or involving the storage or use of explosives or other dangerous materials may be denied a site development permit.

Section 18.40.110, Performance Standards – Citywide

Section 18.40.110 (C), Performance Standards-Citywide, Odors, of the Municipal Code states that no use, process or activity shall produce objectionable odors detectable by a reasonable person that are perceptible without instruments at the property lines of an "R" district.

Chapter 18.46, Non-Conforming Uses, Structures, Sites and Parcels

Chapter 18.46, Nonconforming Uses, Structures, Sites and Parcels, of the Municipal Code, which addresses existing land uses in the City that present conflicts with conforming land uses under the zoning code, states that no nonconforming use that involves the storage, use or generation of hazardous materials, presses, products, or wastes or other activity that may be detrimental to public health or safety because of the potential to generate dust, glare, heat, noise, noxious gases, odor, smoke, vibration, or other conditions that would be incompatible with surrounding uses may be substituted for an existing nonconforming use even if the use is of the same or less intensive nature.

City of Redding 2000-2020 General Plan

Goals and Policies

The existing General Plan Air Quality Element contains the following goals and policies that address air quality:

- Goal 1: Effective communication, cooperation, and coordination in developing and implementing community and regional air quality programs.
    - Policy 1 Air Quality Analysis: The City will require an air quality impact analysis using the recommended methods promulgated by the Air Quality Management District (AQMD) for all projects that are subject to CEQA review and which exceed emissions thresholds established by the AQMD.
    - Policy 2 Report on Cumulative Air Quality Impacts: The City Department of Planning and Community Development will submit a report to the Planning Commission for approval which identifies the cumulative transportation and air quality impacts of all General Plan amendments approved during the previous year in the Annual General Plan Status Report.
    - Policy 3 Tracking Program for Cumulative Air Quality Impacts: The City will establish an information program for decision makers that tracks the cumulative emissions of all approved projects so there is a relative understanding of the impacts of small and large projects as well as proposed projects.
    - Policy 4 Uniform Air Quality Assessment Guidelines: The City will support the development, refinement, and use of uniform air quality impact-assessment guidelines that will provide standard criteria for determining significant environmental effects, that will provide a uniform method of calculating project emissions, and that will provide standard mitigation measures to reduce air quality impacts.
    - Policy 5 Uniform Countywide Air Quality Programs: The City will coordinate with other jurisdictions in the County to establish parallel air quality programs, application of CEQA, and implementation measures (trip-reduction ordinances, wood stove ordinance, and indirect source programs, etc.).
    - Policy 6 Review Projects in Other Jurisdictions: The City will notify and request comments from neighboring cities and the County and affected agencies during review of General Plan amendments involving two acres or more and other significant discretionary projects which may affect the adjoining jurisdiction.
    - Policy 7 Comprehensive Land Use, Transportation, and Air Quality Planning: The City will continue to integrate land use, transportation, and air quality planning to make the most efficient use of public resources and to carry out the policies and goals of this element.
    - Policy 8 Regional and Local Plan Consistency: All City submittal of projects to be included in regional transportation plans (Regional Transportation Improvement Plan

[RTIP], County's Congestion Management Plan [CMP], etc.) should be consistent with the goals and policies of this General Plan Element.

- Policy 9 Transit Planning: The City should consult with transit providers to determine project impacts on long-range transit plans and ensure that impacts are mitigated.
- Policy 10 Consolidation of Transit Services: The City should continue to support the upgrading and consolidation of transit services within the metropolitan area to maximize the efficiency of transit services while minimizing the costs of transit services. This policy would also apply to small transit providers serving special groups like seniors. Consolidating these services can increase ridership per vehicle and reduce miles traveled.
- Policy 11 Transit and Affordable Housing: The City should work with the Housing Authority, transit providers, and developers to accommodate the construction of low-income housing developments that use transit-oriented and pedestrian-oriented design principles.
- Policy 12 Air Quality Education: The City should support and participate in the air quality education programs of the AQMD. The City should assist in educating developers and the public on the benefits of pedestrian and transit-friendly development.
- Policy 13 New Transportation Technology: The City should anticipate new technology in transportation so that opportunities are not foreclosed by relying on old technology.
- Policy 14 Trip-Reduction Programs: The City will, as much as possible, take the lead in implementing innovative employer-based, trip reduction programs by ensuring that employment contracts negotiated with unions are flexible and allow workers to participate in programs that reduce commute trips.
- Policy 15 Replacement of Conventional Fuel Vehicles: The City should adopt a schedule to replace or convert conventional fuel vehicles with alternative fuel vehicles as rapidly as feasible based on available funds.
- Policy 16 Teleconferencing and Telework Centers: The City should support the development of a teleconference center for the community and small telecommunication work centers in new development. This can be accomplished by working with the telephone company and other interested public and private agencies, developers, and hotel operators in developing a multi-user teleconferencing center and small telework centers.

- Goal 2: Reduce motor vehicle trips and vehicle miles traveled and increase average vehicle ridership.
  - Policy 17 Transit and Pedestrian-Oriented Design Guidelines: The City shall make air quality and mobility prime considerations when reviewing any proposed change to the land-use pattern. Such consideration shall include, as much as possible, increased transit and pedestrian mobility. This step shall be part of the CEQA process and apply

reasonable Best Available Mitigation Measures (BAMM) to projects that exceed the significance thresholds promulgated by the Air Quality Management District.

- Policy 18 High Density and Transit: The City shall, as much as possible, continue to plan high-density development in areas that can be fitted with a transit system.
- Policy 19 Mixed Use—Bicyclists and Pedestrians: The City shall continue to encourage mixed-use developments near employment centers that provide commercial services such as day-care centers, restaurants, banks, and stores.
- Policy 20 Funding for Pedestrian and Bicyclist Mobility: The City should provide funding opportunities and options for the development of pedestrian and bicyclist corridor construction.
- Policy 21 Parking and Multi-modal Transfer Sites: The City will work with the Redding Area Bus Authority in planning multi-modal transfer sites that incorporate auto parking areas, bike parking, transit, pedestrian and bicycle paths, and park and ride pick-up points.
- Policy 22 Leap-Frog Development: The City shall continue to encourage compact infill development.
- Policy 23 Higher Densities: The City shall consider redesignating vacant lands suitable for higher densities and transit/pedestrian-oriented developments during future General Plan updates and periodic reviews.
- Policy 24 Single-Family and Mixed-Use Conflicts: The City shall encourage projects within urban areas that will improve the effectiveness of the transit system and will not adversely affect existing single-family development.
- Policy 25 Sphere of Influence: The City will work with the Local Agency Formation Commission, Cities of Anderson, Shasta Lake, and the County in establishing a hard edge urban limit line for the boundary of the metropolitan area of the County and commitment to providing public services only within the urban areas.
- Policy 26 Pedestrian, Bicycle, and Transit Funding: The City should ensure that state and federal funds earmarked for bicycle and transit improvements are used for those purposes and vigorously pursue funds for new bicycle and transit improvements.
- Policy 27 Bus Turnouts and Shelters: As a condition of project approval, the City shall require dedication of land for bus turnouts and shelters at sites deemed appropriate and necessary.
- Policy 28 Bikeway and Pedestrian Plan: The City shall ensure that the Regional Bikeway Plan and the City's Comprehensive Bikeway Plan include a comprehensive system of bikeways and pedestrian paths, which is planned and constructed in accordance with the adopted plan, based on analysis of existing and future use by the area to be served.

- Goal 3: Reduce particulate emissions from sources under the jurisdiction of the City.
  - Policy 29 Reduce Particulates: The City will require measures to reduce particulate emissions from construction, grading, and demolition to the maximum extent feasible.

- Policy 30 Unpaved Roads and Alleys: The City will develop a priority schedule for paving roads and alleys based on availability of funds, grants, and cooperation of adjoining property owners.

- Goal 4: Minimize air pollutant emissions from wood burning fireplaces and appliances.
  - Policy 31 Phase 2 Wood Stoves: The City will only allow developers to install low emitting, Environmental Protection Agency (EPA) certified Phase 2 or more stringent fireplace inserts and/or wood stoves or pellet stoves.
  - Policy 32 Green or Wet Wood: The City should encourage the AQMD to annually advertise the importance of burning only seasoned dry wood.
  - Policy 33 Changeout: The City should encourage the AQMD to adopt a countywide rule that requires a changeout for existing wood heating devices at the time of change of property ownership. The rule should be proposed if the County continues to exceed state PM_{10} standards. The community needs a minimum of two years lead time before this rule takes effect.

Standard Mitigation Measures

Per the existing Redding General Plan, all projects that contribute to cumulative air quality impacts and should employ the appropriate SMMs which help to implement the SCAQMD's guidance, as explained above. The SMMs listed in the 2000-2020 General Plan are provided in Table 5.4-6, *Recommended Standard Mitigation Measures for All Projects*. The SMMs listed herein are retained in the General Plan Update.

TABLE 5.3-6 RECOMMENDED STANDARD MITIGATION MEASURES FOR ALL PROJECTS
Provide energy-efficient process systems, such as water heaters, furnaces, and boiler units.
Apply nontoxic soil stabilizers according to manufacturer's specification to all inactive construction areas (previously graded areas inactive for ten days or more).
Reestablish ground cover on the construction site through seeding and watering prior to final occupancy.
All grading operations of a project shall be suspended when winds (as instantaneous gusts) exceed 20 miles per hour as directed by the AQMD.
All new wood burning devices shall be EPA Phase II certified.
Streets should be designed to maximize pedestrian access to transit stops.
Large residential, commercial, and industrial projects should include bus shelters at transit access points.
Provide temporary traffic control as appropriate during all phases of construction to improve traffic flow (e.g. flag person).
Schedule construction activities that affect traffic flow to off-peak hours.
Water active construction sites at least twice daily as directed by the Public Works Department.
All truck hauling dirt, sand, soil, or other loose materials should be covered or should maintain at least two feet of freeboard (i.e., minimum vertical distance between top of the load and the trailer) in accordance with the requirements of CVC Section 23114. This provision is enforced by local law enforcement agencies.
Sweep streets at the end of the day if visible soil materials are carried onto adjacent public paved roads (recommend water sweeper with reclaimed water).
Install wheel washers where vehicles enter and exit unpaved roads onto paved roads, or wash off trucks and any equipment leaving the site each trip.

Source: Redding 2000

Best Available Mitigation Measures

As explained above under the SCAQMD's regulations, each jurisdiction under the SCAQMD contains BAMMs in their respective Air Quality Elements (or equivalent) that apply to projects that would exceed the thresholds shown in Table 5.3-4. For example, if a project's emissions exceed the Level A significance thresholds contained in Table 5.3-4, that project would be required to implement all feasible and applicable Level A BAMMs in addition to all feasible and applicable SMMs. If that project's emissions continue to exceed the Level B significance thresholds, that project would also be required to implement all feasible and applicable Level B BAMMs. The existing 2000-2020 Redding General Plan Air Quality Element contains the following BAMMs applicable to residential projects in Table 5.3-7, *Recommended BAMMs for Residential Projects*. The BAMMs applicable to commercial and industrial projects are shown in Table 5.3-8, *Recommended BAMMs for Commercial/Industrial Projects*. The BAMMs herein are retained in the General Plan Update.

TABLE 5.3-7 RECOMMENDED BAMMS FOR RESIDENTIAL PROJECTS

Level A Measures
Implement all applicable Standard Mitigation Measures.
Contribute to traffic-flow improvements that reduce emissions and are not growth-inducing (e.g., right-of-way, capital improvements, etc.).
Install an electrical outlet at the front and back of all residential units for electrical yard equipment.
Level B Measures
Implement all applicable Standard Mitigation Measures and Level "A" Mitigation Measures
Construct, contribute, or dedicate land for the provision of off-site bicycle trails linking the facility to designated bicycle commuting routes in accordance with an adopted citywide or countywide plan.
Synchronize traffic signals along streets impacted by development.
Construct on-site and off-site bus turnouts, passenger benches, and shelters.
Provide for pedestrian access between bus service and major points within the development.
Construct off-site pedestrian facility improvements such as overpasses and wider sidewalks.
Include neighborhood retail sales and services within or adjacent to residential subdivisions.
Orient building structures and install landscape that takes advantage of passive solar design principles.
Install solar water heaters for at least 25 percent of the residential units in the development.
Incorporate mixed use development in order to achieve a balance of commercial, employment, and housing options within the project site.
Provide neighborhood park(s) or other recreational options such as trails within development to minimize vehicle travel to other parks or commercial areas.
Provide densities of six units or greater to support transit.

Source: Redding 2000

TABLE 5.3-8 RECOMMENDED BAMMS FOR COMMERCIAL/INDUSTRIAL PROJECTS
Level A Measures
Implement all applicable Standard Mitigation Measures.
Contribute to traffic-flow improvements that are not growth-inducing (e.g., right-of-way, capital improvements, etc.).
Provide preferential parking spaces for carpools and vanpools and provide 7-foot 2-inch minimum vertical clearance in parking facilities for vanpool access.
Level B Measures
Implement all applicable Standard Mitigation Measures and Level "A" Mitigation Measures
Telecommuting programs, alternate work schedules, and guaranteed ride home programs shall be established as appropriate.
Provide for transit-use incentives such as subsidized transit passes and accommodation of unusual work schedules to encourage transit use.
Convert fleet vehicles to clean-burning fuel as appropriate.
Shower/locker facilities shall be provided when appropriate for bicycling and pedestrian commuters.
Construct off-site bicycle and pedestrian facility improvements such as trails linking the facility to designated pedestrian/bicycle commuting routes.
Provide on-site services such as cafeterias, food vending machines, automatic tellers, etc., as appropriate.
Contribute to construction of off-site park-n-ride lots.
Provide on-site child care and after-school facilities or contribute to off-site development within walking distance.
Construct on-site pedestrian facility improvements such as walk paths and building access which is physically separated from street and parking lot traffic.
Implement compressed work-week schedules where weekly work hours are compressed into fewer than five days, such as 9/80, 4/40 or 3/36.
Construct on-site and off-site bus turnouts, passenger benches, or shelters.
Provide adequate bicycle storage/parking facilities.
Implement alternative transportation program such as Caltrans rideshare.

Source: Redding 2000

5.3.1.4 EXISTING CONDITIONS

Northern Sacramento Valley Air Basin

The proposed Project is located at the northern end of the Northern Sacramento Valley Air Basin (NSVAB). The NSVAB consists of seven counties: Sutter, Yuba, Colusa, Butte, Glenn, Tehama, and Shasta. The NSVAB is bounded on the north and west by the Coastal Mountain Range and on the east by the southern end of the Cascade Mountain Range and the northern end of the Sierra Nevada. These mountain ranges reach heights in excess of 6,000 feet above mean sea level, with individual peaks rising much higher. The mountains form a substantial physical barrier to locally created pollution as well as to pollution transported northward on prevailing winds from the Sacramento metropolitan area.

The environmental conditions of Shasta County are conducive to potentially adverse air quality conditions. The basin area traps pollutants between two mountain ranges to the east and the west. This problem is exacerbated by a temperature inversion layer that traps air at lower levels below an overlying layer of

warmer air. Prevailing winds in the area are generally from the south and southwest. Sea breezes flow over the San Francisco Bay Area and into the Sacramento Valley, transporting pollutants from the large urban areas. Growth and urbanization in Shasta County have also contributed to an increase in emissions.

Air Pollutants of Concern

Criteria Air Pollutants

The air pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and state laws. These regulated air pollutants are known as "criteria air pollutants" and are categorized into primary and secondary pollutants. Primary air pollutants are those that are emitted directly from sources. Carbon monoxide (CO), reactive organic gases (ROG), nitrogen oxide (NO_X), sulfur dioxide (SO_2), coarse particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), lead, and fugitive dust are primary air pollutants. Of these, CO, SO_2, PM_{10}, and $PM_{2.5}$ are criteria pollutants. ROG and NO_X are criteria pollutant precursors and go on to form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O_3) and nitrogen dioxide (NO_2) are the principal secondary pollutants.

Sources and health effects commonly associated with criteria pollutants are summarized in Table 5.3-1.

Criteria Air Pollutant Monitoring Data

Ambient air quality in Redding, can be inferred from ambient air quality measurements conducted at air quality monitoring stations. Existing levels of ambient air quality and historical trends and projections in the region are documented by measurements made by the SCAQMD. These measurements are affected by pollutants generated by the urbanized land uses in Shasta County as well as by land uses in the entire NSVAB and beyond. The County maintains air quality monitoring stations for hourly ozone, PM_{10}, and $PM_{2.5}$ at the County Health Department on Breslauer Way in Redding. No other pollutant monitoring information is available for Shasta County. Table 5.3-9, *Ambient Air Quality Monitoring Data*, summarizes the published data since 2019 for each year that the monitoring data is provided at the County Health Department Building monitoring station.

TABLE 5.3-9 AMBIENT AIR QUALITY MONITORING DATA

Pollutant Standards		2019	2020	2021
Ozone (O_3)	Max 1-hour concentration (ppm)	0.072	0.077	0.089
	Max 8-hour concentration (ppm) (state/federal)	0.070	0.070 / 0.069	0.067 / 0.068
	Number of days above state/ federal 1-hour standard	0 / 0	0 / 0	0 / 0
	Number of days above state/federal 8-hour standard	0/ 0	0 / 0	0/ 0
Particulate Matter (PM_{10})	Max 24-hour concentration (µg/m^3) (state/federal)	28.1 / 26.4	94.4 / 95.4	121.6 / 126.2
	Number of days above state/federal standard	* / 0	23 / 0	0 / 0
Particulate Matter ($PM_{2.5}$)	Max 24-hour concentration (µg/m3) (state/federal)	24.1 / 24.1	68.3 / 68.3	165.3 / 165.3
	Number of days above federal standard	0	18.4	26.4

Notes: ug/m3 = micrograms per cubic meter; ppm = parts per million; * = No data currently available to determine the value.
Source: CARB 2023b

5.3.2 THRESHOLDS OF SIGNIFICANCE

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

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

AQ-2 Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.

AQ-3 Expose sensitive receptors to substantial pollutant concentrations.

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

AQ-5 In combination with past, present, and reasonably foreseeable projects, result in cumulative impacts with respect to air quality.

5.3.3 PROPOSED GENERAL PLAN POLICIES

Community Design and Development Element

- Policy CDD10A: Establish standards for infill projects in existing residential neighborhoods that respect existing neighborhood scale and character as funding allows.
- Policy CDD10C: Consider establishing incentives for medium- to high-density, mixed-use developments, where appropriate, with emphasis on Downtown and in the "Mixed Use Neighborhood Overlay" Districts. Review and amend as necessary the Mixed Use Neighborhood

Overlay zoning district to ensure that it serves to facilitate and incentivize the development of new mixed use neighborhoods to the extent feasible.

- Policy CDD10D: Encourage development in the City to include inviting, attractive, accessible, and walkable urban mixed-use neighborhoods combining residential, commercial, recreational, open space, and employment to maximize the use of underused urban lots.
- CDD10D: Encourage development in the City to include inviting, attractive, accessible, and walkable urban mixed-use neighborhoods combining residential, commercial, recreational, open space, and employment to maximize the use of underused urban lots.
- Policy CDD11A: Encourage developers to create new residential developments in infill priority areas that are available to a broad segment of the community. The developments should be pedestrian and bicycle friendly, to make efficient use of available infrastructure and at densities that will help facilitate the provision and use of public transit where it is available.
- Policy CDD11C: Consider developing form-based codes specific to infill priority areas and develop small lot zoning standards for existing lots below the City's minimum lot size to facilitate residential development in infill priority areas.
- Policy CDD11D: Explore options for incentivizing parcel assemblage in infill priority areas to support residential and mixed-use developments.
- Policy CDD11E: Facilitate to the extent feasible, the construction of new affordable housing units that are within walking distance to transit, everyday services, schools, and employment centers.

Community Health, Wellness, and Environmental Justice Element

- Policy EJ3A: Utilize the goals and policies contained within the Natural Resources Element to address impacts on the community at large. Strive to ensure that no part of the community suffers disproportionately from adverse human health or environmental effects, and enable all residents to live in a clean and healthy environment.
- Policy EJ3B: Utilize the Zoning Ordinance and other development regulations require adequate buffering and/or effective technologies to protect sensitive land uses where appropriate. Generally, avoid siting new sensitive land uses (such as residences, day care centers, educational and/ or health facilities), within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, and/ or more than 40 trucks with operating transport refrigeration units (TRUs) per day, or where TRU operations exceed 300 hours per week). Such buffers may vary in depth depending on the type and concentration of pollutants.
- Policy EJ3C: Partner with local, regional, and federal agencies to seek grants and other opportunities towards the development and expansion of clean air centers, building ventilation upgrades, and other available and accessible technological advancements to provide better air quality and to reduce negative health impacts during wildfires and extreme weather events.

- **Policy EJ3E:** Consider the development and adoption of a Climate Action and Resiliency Plan. Support plans, standards, regulations, incentives, investments, and seek grants and other funding to reduce the impacts of climate change on vulnerable residents.
- **Policy EJ3F:** Work with Shasta County Air Quality Management District or other appropriate entities to develop a public information campaign to educate residents on the risks and mitigation measures; to be undertaken when living within 1,000 feet of a freeway.
- **Policy EJ3G:** Monitor changes in technology that will prevent and mitigate transportation-related noise and air quality impacts on residential and sensitive uses in the community. Support traffic and highway improvements that will reduce noise and air quality impacts of vehicles. Alternatives to sound walls should be considered where possible.

Public Safety Element

- **Policy PS10D**: Partner with local, regional, and federal agencies, as appropriate, to seek grants and other opportunities towards development and expansion of clean air centers, building ventilation upgrades, and other available and accessible technological advancements to provide better air quality to vulnerable residents to reduce negative health impacts of wildfires.

Transportation Element

- **Policy T1A**: Strive to ensure that where complete streets infrastructure is constructed, it improves transportation choices for pedestrians, bicyclists, motorists, and public transportation riders and that users of all ages and abilities are considered in the planning, design, approval, construction, and operation of new streets, and the alteration and maintenance phases of existing streets by:
    - Including infrastructure that promotes a safe means of travel for all users along the right of way, such as sidewalks, shared-use paths, bicycle lanes (including protected bicycle lanes or buffered bicycle lanes where feasible) or paved shoulders.
    - Providing pedestrian and bike connections from developments to adjacent main streets, open space areas, parks, transit stops, schools, commercial and employment centers, and other activity centers as opportunities arise.
    - Designing new development to incorporate street connectivity for all users.
    - Including new or alteration of existing infrastructure that facilitates safe crossing of the right-of-way for all users, such as: accessible curb ramps, high-visibility crosswalks, pedestrian refuge islands, smaller curb radii, corner bulb-outs, pedestrian signals, and bicycle detection at traffic signals where warranted.
    - Incorporating features that improve the comfort, convenience, and safety of users such as pedestrian-oriented/wayfinding signs, pedestrian-scale lighting, benches and other street furniture, bicycle parking facilities, comfortable and attractive public transportation stops and facilities, street trees, landscape, and planting strips.

- Policy T2A: Support the provision of a connected network of low-stress walk and bikeways to connect major activity centers, including the provision of appropriate low-stress walk and bikeway access to Downtown Redding and the Redding Transit Center by considering implementation of the measures identified below. Low-stress bikeways should generally consist of separated bikeways (Class IV bikeways), sometimes referred to as “protected bicycle lanes”, on arterial or collector streets; bicycle boulevard treatments on local streets; or multi-use paths.
    - Work to identify and prioritize routes for a connected network of low-stress walk and bikeways, identifying barriers to low-stress travel with plans to address them. and Incorporate maps and plans into future updates of the Redding Active Transportation Plan. Pursue funding to construct the network.
    - Work to identify networks for walking and biking to connect with key travel nodes, and activity centers, including transit nodes and strategic growth areas. Consider accessibility to all neighborhoods and housing, striving to ensure access to a connected network of low-stress walk and bikeways within one-half-mile radius to all residents. Key travel nodes and activity nodes include Downtown Redding, Redding Transit Center, transit nodes (where multiple transit lines intersect), schools, City Hall, County Government Center, Shasta College, Simpson University, major parks and recreation centers, employment centers/business parks, neighborhood commercial nodes and regional commercial centers.
    - As funding permits, develop design standards for the low-stress walk and bikeway network that establishes a "kit of parts" set of standards for the three low-stress facility types: 1) separated bike lanes on arterial and collector streets, 2) neighborhood greenways, and 3) off-street paths and trails. An implementation strategy to construct needed improvements to the network should be established.
    - Work with the Cities of Anderson and Shasta Lake, and Shasta County to identify low-stress walk, bike routes that connect to the downtown core strategic-growth areas of the cities and towns of Shasta County.
    - Support to the extent feasible and as funding allows operation of amenities and programming to enable daily transportation by people biking and walking, including bikeshare services, the Shasta Bike Depot at the Redding Transit Center, secure bike parking, short-term bike parking racks, and similar secure bike parking and e-bike charging stations to meet existing and future needs for the encouragement and education of those who travel via walking or biking.
    - Work with the local school districts to develop specific transportation plans associated with schools and the surrounding neighborhoods to address conflicts with; traffic, pedestrian movements, safety during school hours, and bicycle facilities to and from schools. This may include a plan to implement slower speed school zones while children are present and flashing beacons to identify when these school zones are in effect.

- Policy T3A: Support the provision of enhanced transit service that is timely, cost-effective, responsive to growth patterns, and meet the diverse needs of existing and future transit demand. by:
    - Working with the Shasta Regional Transportation Agency (SRTA) and public transit providers including the Redding Area Bus Authority (RABA) on an ongoing basis to plan and implement additional public transit services.
    - Supporting to the extent feasible and as funding allows the continuation and expansion of private commercial or nonprofit bus operations to provide additional regional transit opportunities for residents.
    - Promoting coordination of public transit, intercity rail, bicycle share program, intercity bus, and air transportation services to enhance the transportation options available for residents and visitors to the Redding community.
    - Supporting to the extent feasible and as funding allows provision of intercity bus service.
    - Developing policies and procedures to implement shared mobility devices to help enhance public transit options. These micro-transit shared mobility type devices could include scooters and e-bikes, but may be expanded as technology develops.
- Policy T3B: Provide physical measures to enhance transit service by considering to undertake the following:
    - Require new development to install and maintain passenger amenities at designated bus stops when relevant to accommodating project trips or mitigating VMT as appropriate.
    - Provide bus facilities along arterial streets as indicated in an applicable transit development plan. Determine the precise locations during the development plan review or at the time of major street improvement or reconstruction.
    - Work with RABA to provide safe, attractive, well-lit, comfortable, and protected waiting areas for bus passengers.
- Policy T4A: Support measures that help reduce VMT below regional averages on a “residential per capita” and “per employee” basis by:
    - Encouraging employers, colleges, and schools to provide incentives and facilities (e.g., showers) for employees and students utilizing alternatives to the single-occupant automobile, such as carpools, vanpools, buses, bicycling, and walking.
    - Encouraging employers, including government agencies, to allow telecommuting and flex time and to promote staggered shifts or base work hours that do not coincide with peak-period traffic to reduce peak-hour trips.

- Policy T7A: Strive to maintain adequate on-street and public off- street parking areas, including electric vehicle charging stations, to meet ongoing parking demands by considering the following measures:
    - Pursue funding options and strategies for the construction and maintenance of shared parking facilities/structures Downtown.
    - Seek funding to provide electric charging stations at parking lots and rest areas for cars, trucks, and bicycles throughout the City.
    - Encourage and facilitate the provision of electric-vehicle charging facilities in new parking lots and multi-family residential developments.
    - Strive to install secure bicycle parking with electric charging stations and large enough for cargo bikes in the Downtown area and at City parks, civic buildings, and other community centers.
- Policy T7B: Endeavor to ensure that required parking provisions for private development supports efforts to encourage multimodal travel and reduce VMT by:
    - Pursuing maximum and minimum standards for automobile parking spaces in transit corridors and Downtown to promote use of alternate modes of travel as may be appropriate.
    - Pursuing minimum standards for bicycle parking, including both long-term and short-term bicycle parking spaces.
- Policy T7C: Generally, prohibit on-street automobile parking on arterial streets if there is not adequate space for bike lanes and parking lanes outside the Downtown area to reduce congestion and conflicts.
- Policy T7D: Work to ensure the provision of adequate curbside or off-street space where applicable to accommodate passenger pick-up/drop-off activity by transportation network companies (TNC), and delivery services.

Natural Resources Element

- Policy NR13A: Utilize the following thresholds that have been adopted by regional agencies when determining air quality impacts of discretionary projects. Update the thresholds as may be recommended by the SCAQMD from time to time.

  Level "A": Up to:
    - 25 pounds per day of oxides of nitrogen
    - 25 pounds per day of reactive organic gases
    - 80 pounds per day of fine particulate matter (PM2.5)
    - 80 pounds per day of inhalable particulate matter (PM10)

Level "B": Up to:

- 137 pounds per day of oxides of nitrogen
- 137 pounds per day of reactive organic gases
- 137 pounds per day of inhalable particulate matter (PM10)

- Policy NR13B: Utilize the process discussed in this Element to apply SMM and BAMM to discretionary projects and as one of the determinants of when an EIR is required to address air quality impacts. Update Emission Reduction Efficiency percentages as recommended by SCAQMD.
- Policy NR13C: Coordinate with the SCAQMD to use consistent and accurate procedures in the review of projects which may have air quality impacts. Refer development applications that exceed Level "A" thresholds to the SCAQMD for review and comment. Incorporate the recommendations as appropriate.
- Policy NR13D: Encourage efforts to reduce the amount of vehicle miles traveled (VMT) by encouraging mixed-use development, promoting a jobs/housing balance, and encouraging alternative transportation such as walking, cycling, and use of public transit.
- Policy NR13E: Work with the SCAQMD and other partners as appropriate to meet the state and federal ambient air quality standards in order to protect all residents from the health effects of air pollution.
- Policy NR13F: Coordinate with SCAQMD in evaluating the exposure of sensitive receptors to toxic air contaminants and odors, and impose appropriate conditions on projects to protect public health and safety so as to reduce the exposure of sensitive receptors to toxic air contaminants and/ or noxious odors.
- Policy NR13G: Consider referring all project applications that involve sensitive receptor uses that would be constructed in proximity to freeways, industrial uses, truck routes, petroleum fuel stations and similar uses to the SCAQMD for comment and recommendations.

5.3.4 IMPACT DISCUSSION

5.3.4.1 METHODOLOGY

Emissions Quantification

Impacts related to air quality resulting from implementation (construction and operation) of the proposed project are discussed below. The impact analysis is based on calculations of the criteria air pollutant and ozone precursor emissions that would result from projected future growth at buildout of the proposed project. Buildout of the General Plan Update with up to 8,066 new dwelling units, 43,383 new residents, 5,591,974 new nonresidential square footage, and 9,781 new employees were utilized to determine the increase in criteria air pollutants as a result of the proposed project. To identify the expected growth in

nonresidential building square footage between 2020 and 2045, the existing nonresidential square footage inventory was provided by the City and multiplied by the same growth rate that employment would experience between 2020 and 2045.

To identify emissions generated by development facilitated by the General Plan Update in its horizon year of 2045 when compared to existing conditions, several emission sources and data were retrieved and analyzed for existing and future 2045 conditions. Quantification methodology for all emissions presented in this analysis are provided below.

- Building Energy. Emissions associated with natural gas use for residential and nonresidential land uses in the City were calculated based on data provided by Pacific Gas and Electric (PG&E). Existing 2020 emissions are based on the 2019-2021 annual average natural gas use. Forecasts for year 2045 are adjusted for increases in population for residential natural gas use and nonresidential square footage for nonresidential natural gas use in the City.
- Propane Use. For propane emissions, proposal consumption was identified for residential uses only, using US Census Bureau data for houses using bottled, tank, or LP gas for house heating fuels and US Energy Information Administration data for propane consumption, and was applied to the growth in residential units through 2045. Nonresidential propane consumption was not identified as that is not anticipated to be a substantial contribution to propane consumption in the City. Please refer to Appendix 5.3-1 for propane source emission calculations.
- Transportation. Transportation emissions forecasts were modeled using emissions data from CARB's EMFAC2021 V1.0.2 web database. Model runs were based on daily VMT data provided by GHD) and calendar year 2020 (existing) and 2045 emission rates.[1] The VMT is based on the origin-destination using the Shasta County Transportation Model and includes the full trip length for land uses in the City and a 50 percent reduction in the trip length for external-internal/internal-external trips based on the recommendations of CARB's Regional Targets Advisory Committee under SB 375.[2]

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

[2] For accounting purposes, there are three types of trips:

- Internal-Internal. Vehicle trips that originated and terminated within the City (Internal-Internal, I-I). Using the accounting rules established by RTAC, 100 percent of the length of these trips and their emissions are attributed to the City.
- Internal-External/External-Internal. Vehicle trips that either originated or terminated (but not both) in the City (Internal-External or External-Internal, I-X and X-I). Using the accounting rules established by RTAC, 50 percent of the trip length for these trips is attributed to the City.
- External-External. Vehicle trips that neither originated nor terminated in the City. These trips are commonly called pass-through trips (External-External, X-X). Using the accounting rules established by RTAC, these trips are not counted toward the City's VMT or emissions.

- **Off-Road Equipment.** OFFROAD is a database of equipment use and associated emissions for each county compiled by CARB. Off-road equipment in the City is based on year 2020 emission rates for Shasta County obtained from CARB's OFFROAD V1.0.3 web database. OFFROAD was used to estimate emissions from lawn and garden, light commercial, and construction equipment in the City. To determine the percentage of emissions attributable to the City, light commercial equipment is estimated based on employment for Redding as a percentage of Shasta County and forecast based on the change in employment in the City. Construction equipment use is estimated based on building permit data for Redding and County of Shasta from data compiled by the US Census and assumes that construction emissions for the forecast year would be similar to historical levels. Lawn and garden equipment is based on the percentage of population in Redding compared to Shasta County and forecast based on the change in population in the City.
- **Hearth Use.** The daily existing and proposed project wood-fired hearth and stove use in the City are based on the default values contained in CalEEMod and residential dwelling unit estimates for existing (2020) and future (2045) conditions.

Industrial sources of emissions that require a permit from SCAQMD are not included in the community criteria air pollutant emission inventory.

AQ-1: The proposed project would conflict with or obstruct implementation of the 2021 Air Quality Attainment Plan. [Threshold AQ-1]

CEQA requires that projects be evaluated for consistency with the applicable air quality management plan(s). A consistency determination plays an important role in local agency project review by linking local planning and individual projects to the air quality plans. It fulfills the CEQA goal of informing decision makers of the environmental effects of a project under consideration at a stage early enough to ensure that air quality concerns are fully addressed. It also provides the local agency with ongoing information as to whether they are contributing to the clean air goals of the air quality management plans. Typically, a project is deemed inconsistent with air quality management plans if it would result in population, employment, land use, or VMT that exceeds the growth estimates assumed in the applicable air quality management plan, since such exceedances would hinder achievement of Federal and State AAQS.

Consistency with the 2021 Air Quality Attainment Plan

The 2021 Air Quality Attainment Plan (AQAP) provides local guidance for air basins to achieve attainment of Federal and State AAQS. Due to the regional nature of the ozone challenges and the fact that the Northern Sacramento Valley Planning Area (NSVPA) counties share the same air basin, the NSVPA Air Districts jointly prepared the original 1991 AQAP and subsequent triennial updates, including SCAQMD. Areas that meet these standards are classified as attainment areas; areas that do not meet these standards are classified as nonattainment areas. Areas for which there is insufficient data are designated unclassified. Shasta County is nonattainment-transitional for ozone standards.

The 2021 AQAP proposes strategies and regulations for the three-year planning cycle for the 2021 AQAP (2022 through 2024). Continued attention is given to reducing ROG and NO_X emissions from transportation and areawide emission sources with implementation of regulations and planning requirements from earlier AQAP planning cycles. The Shasta County Air Pollution Control Board adopted the 2021 AQAP on April 5, 2022.

Control Measures

To attain and maintain air quality standards, the NSVPA Air Districts, including SCAQMD, have adopted control measures to limit the amount of air pollutant releases from sources. The NSVPA Air Districts have regulatory authority over stationary sources of air pollutants and some area sources. The following control measures have been adopted by SCAQMD to reduce emissions from new development either through the planning process or through control of specific sources of emissions:

- Air Quality Element. The City of Redding Air Quality Element was adopted with the previous General Plan Update in 2000. It has been reformatted and its policies are contained in the Natural Resources Element of this General Plan Update.
- Smoking Vehicle Program. SCAQMD relies on the CARB smoking vehicle program.
- Wood Stoves and Fireplaces. SCAQMD adopted Rule 3:2, Fireplace and Solid Fuel Heating Device Usage, in 1994 which requires all wood-heating devices used for the first time in existing buildings and all new residential and commercial building projects to meet emission and performance requirements equivalent to EPA Phase II devices.
- Backyard Residential Burning. SCAQMD adopted Rule 2:6, Open Burning: General Provisions, in 1994. Rule 2:6 generally prohibits burning waste in an open outdoor fire. Section (7) of Rule 2:6 discusses exceptions for residential landscape debris burning.
- Architectural Coatings. SCAQMD adopted Rule 3:31, Architectural Coatings, in 2003. This rule establishes ROG content limits for architectural coatings that are supplied, sold, offered for sale, applied, solicited for application, or manufactured for use within the County. Rule 3:32, Adhesives and Sealants, adopted in 2003, limits the emissions of ROGs from adhesives and sealants and associated primers, and from related surface preparation solvents, cleanup solvents, and strippers.
- Fugitive Dust During Construction. Rule 3:16, Fugitive, Indirect, or Non-Traditional Sources, was adopted by SCAQMD in 1986 and includes measures to minimize the emission of fugitive dust during earth-moving, construction, demolition, bulk storage, and other activities that could result in wind erosion. This rule identifies Reasonably Available Control Measures (RAMC) that could be considered to prevent or reduce the emission and transport of fugitive dust (applying dust suppressants, using fences, barriers, and/or wind breaks/screens, revegetating disturbed surfaces, cleaning paved streets, improving road surfaces, and/or controlling vehicular speeds in unpaved areas.

SCAQMD's existing rules provide consistency with the AQAP's control measures and apply to all new development in Shasta County and the City of Redding. However, the proposed project also includes several policies in the Community Development and Design Element, Transportation, Environmental Justice, and Natural Resources Elements, as seen in Section 5.3.3, Proposed General Plan Policies, that aim to reduce emissions associated with transportation by encouraging alternative modes of transportation and land use patterns that reduce VMT.

Project Consistency with Emissions Projections in the 2021 AQAP

A project's consistency with the AQAP can also be determined based on its consistency with projections in the AQAP. The 2021 AQAP's emission projections for area, mobile, and stationary sources in the NSVPA through 2040 are based in part on a projected population for Shasta County of 182,059 and projected countywide average daily VMT of 8,490,000 by year 2040. Population estimates in the 2021 AQAP are based on California Department of Finance, Demographic Research Unit population estimates; VMT estimates are based on CARB's on-road mobile source emissions inventory model (EMFAC2017 v1.0.3).

As discussed in Impact AIR-2 below, development under the 2023-2045 General Plan would generate ozone precursor emissions (ROG and NO_X). For this analysis, estimated areawide and mobile source emissions under the proposed General Plan Update were compared to the estimated area and mobile source emissions projected in the 2021 AQAP for year 2025. Because it is not possible to estimate stationary source emissions that could occur with implementation of the proposed General Plan Update, a comparison of stationary source emissions is not included. As indicated in Table 5.3-10, *Comparison of NSVPA and 2023-2045 General Plan Ozone Precursor Emissions – Areawide and Mobile Sources*, the ROG and NO_X emissions that would be generated by activity under the 2023-2045 General Plan in 2045 would exceed the projections in the AQAP for 2025.

TABLE 5.3-10 COMPARISON OF NSVPA AND 2023-2045 GENERAL PLAN OZONE PRECURSOR EMISSIONS – AREAWIDE AND MOBILE SOURCES

Ozone Precursor	Projected 2025 NSVPA Emissions (Tons/Day)	Percentage of 2025 Projected Emissions Attributable To Redding (Tons/Day)[1]	Projected Emissions in 2045 Under General Plan Buildout (Tons/Day)	Do Project Emissions Exceed AQAP Projections for Redding?
NOx				
Areawide Sources	5.020	0.68	0.33	No
Mobile Sources	41.821	5.67	0.31	No
Stationary Sources	21.185	2.87	-	N/A
TOTAL (Without Stationary Sources)	**46.84**	**6.36**	**0.90**	**No**
ROG				
Areawide Sources	40.6	5.51	10.85	Yes
Mobile Sources	27.39	3.72	0.02	No
Stationary Sources	26.03	3.53	-	N/A
TOTAL (Without Stationary Sources)	**67.99**	**9.22**	**44.70**	**Yes**

[1] The proportion of the 2025 projected emissions in the NSVPA attributable to Redding was calculated by determining the proportion of Redding's population within the seven-county NSVPA based on the year 2020 in the Department of Finance's E-5 Population and Housing Estimates for Cities, Counties, and the State, 2020-2022. That proportion (13.57%) was applied to each of the emissions sources for the NSVPA listed in the AQAP to determine the proportion of those emissions attributable to Redding.
Source: SVABCC 2021; PlaceWorks 2023, Appendix 5.3-1

As shown in Table 5.3-10, the proposed project would exceed the ozone precursor emissions forecast prepared by the NSVPA Air Districts in the 2021 AQAP, specifically the areawide ROG emissions. The proposed project's exceedance of the proportional NSVPA areawide ROG emissions forecast is principally attributable to the use of wood-burning hearths and stoves. While the 2021 AQAP emissions forecast horizon is in year 2025 and the proposed project's emissions forecast is in year 2045, the 2021 AQAP does not provide emissions forecasts farther into the future. Because the extent of growth in population, employment, and land use development through 2025 from the proposed project is unknown at this time, the 2045 emissions forecast from the proposed project was compared against the 2021 AQAP emissions forecast for 2025 as a conservative assessment of whether the proposed project would be consistent with the 2021 AQAP.

Although individual projects under the 2023-2045 General Plan would be subject to SCAQMD's adopted rules that ensure new and modified sources of air pollution do not interfere with the attainment or maintenance of AAQS, cumulative emissions due to buildout of the City under the proposed project would exceed the emissions projected in the 2021 AQAP. As such, Mitigation Measures AQ-1 and AQ-2 would be required to ensure that future development projects facilitated by the proposed project implement the applicable SMMs and BAMMs contained in the Natural Resources Element. Nonetheless, due to the programmatic nature of this Draft EIR, it is not possible to estimate project-specific emissions or identify quantifiable reductions that would result from project-specific implementation of the Natural Resources

Element SMMs and BAMMs. Therefore, the potential for future projects to conflict with or obstruct implementation of the 2021 AQAP is considered significant and unavoidable.

Level of Significance Before Mitigation: Impact AQ-1 would be potentially significant.

Mitigation Measures

AQ-1 The City shall ensure that discretionary development shall incorporate all applicable Standard Mitigation Measures (SMMs) contained in the General Plan Natural Resources Element to reduce emissions to be less than the applicable thresholds. These SMMs include but are not limited to the most recent SCAQMD recommendations for construction. SMMs retained in the General Plan Update are listed below:

- Provide energy-efficient process systems, such as water heaters, furnaces, and boiler units.
- Apply nontoxic soil stabilizers according to manufacturer's specification to all inactive construction areas (previously graded areas inactive for ten days or more).
- Reestablish ground cover on the construction site through seeding and watering prior to final occupancy.
- All grading operations of a project shall be suspended when winds (as instantaneous gusts) exceed 20 miles per hour as directed by the AQMD.
- All new wood burning devices shall be EPA Phase II certified.
- Streets should be designed to maximize pedestrian access to transit stops.
- Large residential, commercial, and industrial projects should include bus shelters at transit access points.
- Provide temporary traffic control as appropriate during all phases of construction to improve traffic flow (e.g. flag person).
- Schedule construction activities that affect traffic flow to off-peak hours.
- Water active construction sites at least twice daily as directed by the Public Works Department.
- All truck hauling dirt, sand, soil, or other loose materials should be covered or should maintain at least two feet of freeboard (i.e., minimum vertical distance between top of the load and the trailer) in accordance with the requirements of CVC Section 23114. This provision is enforced by local law enforcement agencies.
- Sweep streets at the end of the day if visible soil materials are carried onto adjacent public paved roads (recommend water sweeper with reclaimed water).

- Install wheel washers where vehicles enter and exit unpaved roads onto paved roads, or wash off trucks and any equipment leaving the site each trip.

AQ-2 Applicants of future discretionary development projects that would generate construction-related or operational-related emissions that exceed applicable thresholds, shall include, but are not limited to, Best Available Mitigation Measures (BAMMs) recommended by SCAQMD, to the extent feasible and applicable to the project. BAMMs retained in the General Plan Update are listed below:

Residential Level A BAMMs

- Implement all applicable Standard Mitigation Measures.
- Contribute to traffic-flow improvements that reduce emissions and are not growth-inducing (e.g., right-of-way, capital improvements, etc.).
- Install an electrical outlet at the front and back of all residential units for electrical yard equipment.

Residential Level B BAMMs

- Implement all applicable Standard Mitigation Measures and Level "A" Mitigation Measures.
- Construct, contribute, or dedicate land for the provision of off-site bicycle trails linking the facility to designated bicycle commuting routes in accordance with an adopted citywide or countywide plan.
- Synchronize traffic signals along streets impacted by development.
- Construct on-site and off-site bus turnouts, passenger benches, and shelters.
- Provide for pedestrian access between bus service and major points within the development.
- Construct off-site pedestrian facility improvements such as overpasses and wider sidewalks.
- Include neighborhood retail sales and services within or adjacent to residential subdivisions.
- Orient building structures and install landscape that takes advantage of passive solar design principles.
- Install solar water heaters for at least 25 percent of the residential units in the development.
- Incorporate mixed use development in order to achieve a balance of commercial, employment, and housing options within the project site.

- Provide neighborhood park(s) or other recreational options such as trails within development to minimize vehicle travel to other parks or commercial areas.
- Provide densities of six units or greater to support transit.

Commercial/Industrial Level A BAMMs

- Implement all applicable Standard Mitigation Measures.
- Contribute to traffic-flow improvements that reduce emissions and are not growth-inducing (e.g., right-of-way, capital improvements, etc.).
- Provide preferential parking spaces for carpools and vanpools and provide 7-foot 2-inch minimum vertical clearance in parking facilities for vanpool access.

Commercial/Industrial Level B BAMMs

- Implement all applicable Standard Mitigation Measures and Level "A" Mitigation Measures.
- Telecommuting programs, alternate work schedules, and guaranteed ride home programs shall be established as appropriate.
- Provide for transit-use incentives such as subsidized transit passes and accommodation of unusual work schedules to encourage transit use.
- Convert fleet vehicles to clean-burning fuel as appropriate.
- Shower/locker facilities shall be provided when appropriate for bicycling and pedestrian commuters.
- Construct off-site bicycle and pedestrian facility improvements such as trails linking the facility to designated pedestrian/bicycle commuting routes.
- Provide on-site services such as cafeterias, food vending machines, automatic tellers, etc., as appropriate.
- Contribute to construction of off-site park-n-ride lots.
- Provide on-site child care and after-school facilities or contribute to off-site development within walking distance.
- Construct on-site pedestrian facility improvements such as walk paths and building access which is physically separated from street and parking lot traffic.
- Implement compressed work-week schedules where weekly work hours are compressed into fewer than five days, such as 9/80, 4/40 or 3/36.
- Construct on-site and off-site bus turnouts, passenger benches, or shelters.
- Provide adequate bicycle storage/parking facilities.
- Implement alternative transportation program such as Caltrans rideshare.

Level of Significance After Mitigation: Impact AQ-1 would be significant and unavoidable.

Implementation of the appropriate SMMs and BAMMs would ensure that the City incorporates emission reduction measures into the requirements for individual development projects; however, given the growth in population and employment within the City and the magnitude of emissions reductions needed to achieve consistency with the NSVPA 2025 emissions forecast, it is uncertain whether appropriate SMMs and BAMMs would reduce individual project emissions to less-than-significant levels. Therefore, GHG emissions are considered significant and unavoidable.

AQ-2:	Construction of the proposed project would generate regional and localized emissions of criteria air pollutants or precursor emissions in excess of the SCAQMD thresholds, resulting in a cumulatively considerable net increase of criteria pollutants for which the project region is non-attainment under an applicable federal or state ambient air quality standard and potentially exposing sensitive receptors to substantial pollutant concentrations. [Thresholds AQ-2 and AQ-3]

Regional Construction Emissions

The General Plan Update would accommodate future development for residential, commercial, recreational, and industrial uses. The future development and other physical changes that could result from the implementation of the General Plan Update implementation would generate construction-related emissions of criteria air pollutants and precursors, including ROG, NO_X, PM_{10}, and $PM_{2.5}$ from site preparation (e.g., excavation, clearing), off-road equipment, material delivery, worker commute trips, and other activities (e.g., building construction, asphalt paving, application of architectural coatings). Typical construction activities that could occur with land use development include use of all-terrain forks, forklifts, cranes, pick-up and fuel trucks, compressors, loaders, backhoes, excavators, dozers, scrapers, pavement compactors, welders, concrete pumps, concrete trucks, and off-road haul trucks as well as other diesel-powered equipment as necessary. Fugitive dust emissions of PM_{10} and $PM_{2.5}$ would be associated primarily with site preparation and grading and would vary as a function of the soil silt content, soil moisture, wind speed, acreage of disturbance, and mobile sources. Emissions of ozone precursors would occur from the exhaust of construction equipment and on-road vehicles. Paving and the application of architectural coatings also would result in off-gas emissions of ROG. PM_{10} and $PM_{2.5}$ would also be emitted from off-road equipment and vehicle exhaust.

Construction activities associated with the 2023-2045 General Plan would occur over the buildout horizon of the plan, causing short-term emissions of criteria air pollutants. For the proposed General Plan Update, which is a broad policy plan, it is not possible to determine whether the scale and phasing of individual projects would exceed the SCAQMD's thresholds of criteria pollutants of concern (see Table 5.3-4). Overall, air quality emissions related to construction must be addressed on a project-by-project basis, and information regarding specific development projects, soil types, and the locations of receptors would be

needed to quantify the level of impact associated with construction activity. Nonetheless, to provide a reasonable representation of what construction emissions could be in a given year, CARB's OFRROAD database was utilized to quantify reasonably expected annual construction emissions. OFFROAD is a database of equipment use and associated emissions for each county compiled by CARB. Off-road equipment in the City is based on year 2020 emission rates for Shasta County obtained from CARB's OFFROAD V1.0.3 web database. OFFROAD was used to estimate emissions from lawn and garden, light commercial, and construction equipment in the City. To determine the percentage of emissions attributable to the City, light commercial equipment is estimated based on employment for Redding as a percentage of Shasta County and forecast based on the change in employment in the City. Construction equipment use is estimated based on building permit data for Redding and County of Shasta from data compiled by the US Census and assumes that construction emissions for the forecast year would be similar to historical levels. Lawn and garden equipment is based on the percentage of population in Redding compared to Shasta County and forecast based on the change in population in the City. All quantified construction emissions associated with the proposed project are included in the daily operational emission estimates presented in Table 5.3-11.

As stated in Section 5.3.1.3, *Regulatory Background*, all discretionary projects in the City are recommended to implement SMMs (see Table 5.3-6) to minimize emissions and contribute to a reduction in cumulative impacts. Projects that generate unmitigated emissions above Level A (see Table 5.3-4) must implement BAMMs (see Tables 5.3-7 and 5.3-8) in addition to the SMMs. If a project is not able to reduce emissions below the Level B threshold, emissions offsets for reducing existing sources of pollution are required. If after applying the emissions offsets, a project's emissions still exceed the Level B threshold, impacts are considered significant and unavoidable. Mitigation Measure AQ-1 would require that all projects under the 2023-2045 General Plan implement all applicable SMMs in the Natural Resources Element in addition to any applicable SCAQMD recommendations for construction. Mitigation Measure AQ-2 would similarly require projects that generate emissions that exceed the SCAQMD thresholds to implement BAMMs to the extent feasible and applicable to the proposed project.

While implementation of the construction-related SMMs and BAMMs, as required by Mitigation Measures AQ-1 and AQ-2, would reduce construction-generated emissions of criteria air pollutants and precursors, it cannot be guaranteed that emissions from all individual discretionary projects would be reduced to below the SCAQMD's thresholds. As such, due to Shasta County's nonattainment-transitional status for ozone CAAQS, construction activities associated with implementation of the General Plan Update may result in adverse air quality impacts to surrounding land uses and may contribute to the existing air quality condition in the City. Therefore, impacts due to construction emissions would be potentially significant.

Localized Construction Emissions

Within the NSVAB, localized risks are primarily associated with exposure to TAC emissions. As discussed in Section 5.3.1.2, *Air Pollutants of Concern,* TACs are a defined set of airborne pollutants that may pose a present or potential hazard to human health. Sources of TAC emissions during construction activities include

off-road construction vehicle and equipment use and on-road vehicle use for material and soil hauling. Identification of potential impacts to sensitive receptors resulting from project-generated TACs would require project-specific information for future individual land use development projects that is not currently known. Therefore, assessment of future development projects facilitated by the proposed project that would be subject to CEQA would undergo their own review of potential construction-related localized impacts and identify appropriate and feasible mitigation to implement to reduce potentially significant impacts. Implementation of appropriate SMMs and BAMMs would reduce construction emissions for future individual development projects; however, because project-specific information is not available, it is not possible to determine whether implementation of the SCAQMD SMMs and BAMMs would reduce localized impacts to sensitive receptors or identify additional quantifiable mitigation measures that would reduce project-specific construction emissions to ensure that localized emissions generated during construction of future development projects under the General Plan Update do not expose sensitive receptors to substantial pollutant concentrations. As such, this impact would be potentially significant.

Level of Significance Before Mitigation: Impact AQ-2 would be potentially significant.

Mitigation Measures

Implementation of Mitigation Measures AQ-1 and AQ-2.

Level of Significance After Mitigation: Impact AQ-2 would be significant and unavoidable.

The City would consult with the SCAQMD as necessary to identify project-specific SMMs, BAMMs, and other measures that could be implemented to achieve compliance with established thresholds. Mitigation Measures AQ-1 and AQ-2 would require implementation of SMMs and BAMMs for project with the potential to exceed the SCAQMD significance thresholds. However, due to the programmatic nature of this Draft EIR, it is not possible to identify quantifiable mitigation measures that would reduce project-specific construction emissions below the SCAQMD's significance thresholds or ensure that localized emissions generated during construction of future development projects under the General Plan Update do not expose sensitive receptors to substantial pollutant concentrations. Therefore, the potential for construction activities under the 2023-2045 General Plan to result in a cumulatively considerable net increase of a criteria pollutant or ozone precursor for which the project area is in non-attainment is possible, and therefore considered potentially significant and unavoidable.

AQ-3	Operation of the proposed project would generate regional and localized emissions of criteria air pollutants or precursor emissions in excess of the SCAQMD thresholds, resulting in a cumulatively considerable net increase of criteria pollutants for which the project region is non-attainment under an applicable federal or state ambient air quality standard and potentially exposing sensitive receptors to substantial pollutant concentrations. [Thresholds AQ-2 and AQ-3]

Regional Operational Emissions

The proposed project would accommodate new development that would operate through the planning horizon year 2045. New residential, commercial, industrial, and recreational development facilitated by the proposed project would result in long-term area-, energy-, and mobile-source emissions. Area source emissions are the combination of many small emission sources that include use of outdoor landscape maintenance equipment, use of consumer products such as cleaning products, use of fireplaces and hearths, and periodic reapplication of architectural coatings. Criteria pollutants generated from energy sources are principally from the on-site use of natural gas and other heating fuels; electricity consumption is not included in energy source emissions as those potential emissions would be generated as the result of the operation of an electricity generation facility which may or may not be within the same air basin and under the same attainment status as the end-use. Mobile source emissions result from the vehicle activity associated with the operation of a given land use development project.

It should be noted that the proposed project would not itself authorize specific development to occur within the City. Future development projects would be subject to the City's standard CEQA review process and would be required to assess project-specific emissions in relation to the SCAQMD significance thresholds. Although specific project-level information for potential future development is not available at this time and the estimation of emissions resulting from future development would be speculative, anticipated maximum daily emissions were quantified to provide an estimate of the potential overall area, energy, and mobile source emissions resulting from the proposed project based on the calculation methodology provided in Section 5.3.4.1, *Emissions Quantification*.

TABLE 5.3-11 PROPOSED PROJECT CRITERIA AIR POLLUTANT EMISSIONS FORECAST

Sectors	Criteria Air Pollutant Emissions (Pounds per Day)		
	ROG	NO_X	PM_{10}
Existing Community Emissions			
Transportation	22	436	90
Energy	28	462	36
Off-Road Equipment[1]	596	894	48
Consumer Products	1,855	0	0
Hearth Use[2]	16,750	567	5,685
Total Average (lbs/day)	**19,251**	**2,360**	**5,859**
Proposed Project Emissions			
Transportation	31	614	127
Energy	32	539	42
Off-Road Equipment[1]	679	922	49
Consumer Products	2,198	0	0
Hearth Use[2]	19,511	660	6,622
Total Average (lbs/day)	**22,451**	**2,736**	**6,840**
Net New Emissions (lbs/day)	3,201	376	981
SCAQMD Threshold for Level A (lbs/day)	25	25	80
SCAQMD Threshold for Level B (lbs/day)	137	137	137
Project Exceeds Thresholds?	**Yes**	**Yes**	**Yes**

Notes: Emissions may not total to 100 percent due to rounding.
1. Off-Road Equipment emissions are associated with on-going construction equipment use, commercial and light industrial equipment use, and landscape equipment use.
2. Hearth emission estimates are not based on a 365-day year and are instead averaged among the 82 days per year homes are expected to use wood-burning hearths, consistent with the CalEEMod 2022 User's Guide.

As shown in Table 5.3-11, the proposed project would result in ROG and PM_{10} emissions which would exceed both the SCAQMD's Level A and Level B significance thresholds. SCAQMD Rule 2:1, New Source Review, establishes pre-construction review requirements for new and modified stationary sources of air pollution. The regulation provides for no net increase in emissions from new or modified stationary sources that emit, or have the potential to emit, 25 tons per year or more of any non-attainment pollutant or its precursors. The use of Best Available Control Measures is required to ensure that projects with stationary source emissions do not interfere with the attainment or maintenance of Federal or State AAQS.

As previously discussed, the Redding General Plan includes SMMs (see Table 5.3-6) that the City and SCAQMD recommend be applied to all projects in the City. The City recommends that BAMMs (see Tables 5.3-7 and 5.3-7) be implemented to reduce emissions from projects that exceed the SCAQMD Level A thresholds. These BAMMs primarily apply to operational emissions, targeting the reduction in VMT and passive solar design. Mitigation Measures AQ-1 and AQ-2 would ensure that all projects under the 2023-2045 General Plan implement the applicable SMMs and BAMMs.

Development projects accommodated by the 2023-2045 General Plan would be analyzed on a case-by-case basis when detailed information regarding operational activities is known. Future projects would be subject to the General Plan policies identified in Section 5.3.3, as well as SCAQMD and State rules and regulations, including, but not limited to those identified in Section 5.3.1.3, *Regulatory Background*. Nonetheless, the proposed project would result in regional operational emissions that exceed the SCAQMD's significance thresholds. As such, this impact would be potentially significant.

Localized Operational Emissions

Within the NSVAB, localized risks are primarily associated with exposure to TAC emissions. As discussed in Section 5.3.1.2, *Air Pollutants of Concern,* TACs are a defined set of airborne pollutants that may pose a present or potential hazard to human health. Common sources of operational TAC emissions are stationary sources (e.g., dry cleaners, diesel backup generators, and gasoline stations), which are subject to SCAQMD permit requirements. Another common and often more significant source type is on-road motor vehicles on high-volume roads, such as I-5, SR-44, and SR-299, and off-road sources such as construction equipment and diesel-powered trains traveling on the Union Pacific corridor.

The SCAQMD identified the following types of land use conflicts that could result in the exposure of sensitive receptors to excessive pollutant concentrations in their CEQA Land Use Protocol Guidelines:

- Development projects with sensitive receptors in close proximity to a congested intersection or roadway with high levels of emissions from motor vehicles. High concentrations of carbon monoxide, fine particulate matter, or toxic air contaminants are the most common concerns.
- Development projects with sensitive receptors close to an industrial source of toxic air contaminants.
- Development projects with sensitive receptors close to a source of odorous emissions. Although odors generally do not pose a health risk, they can be quite unpleasant and often lead to citizen complaints to the District and to local governments.

Identification of potential impacts to sensitive receptors resulting from project-generated TACs would require project-specific information for future individual land use development projects that is not currently known. Therefore, consistent with SCAQMD's CEQA Land Use Protocol Guidelines, the proposed project could result in a potentially significant community risk and hazard impact if the General Plan Update does not take preventative measures to protect development that could house sensitive receptors near a congested roadway or industrial sources of TACs. In addition to SCAQMD's guidance on TACs, CARB's Air Quality and Land Use Handbook (2005) recommends the following:

Avoid the siting of new sensitive land uses (e.g., residences, schools) within 50 feet of:

- Typical gasoline fueling stations.

Avoid the siting of new sensitive land uses within 300 feet of:

- Large gasoline fueling stations (with a throughput of more than 3.6 million gallons of gasoline per year); and
- Dry-cleaning operations using perchloroethylene.

Avoid the siting of new sensitive land uses within 500 feet of:

- Freeways, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day; and
- Dry-cleaning operations using perchloroethylene and 2 or more machines.

Avoid the siting of new sensitive land uses within 1,000 feet of:

- Distribution centers that accommodate more than 100 trucks per day, more than 40 trucks with operating transport refrigerated units (TRUs) per day, or where TRU unit operations exceed 300 hours per week; and
- Major rail service or maintenance yards.

The 2023-2045 General Plan includes Policy EJ3B in the draft Environmental Justice Element which directs the City to ensure that zoning and other development regulations require adequate buffering and/or effective technologies to protect sensitive land uses. Policy EJ3B states: generally, avoid siting new sensitive land uses (such as residences, day care centers, educational and/ or health facilities), within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, and/ or more than 40 trucks with operating transport refrigeration units (TRUs) per day, or where TRU operations exceed 300 hours per week). Such buffers may vary in depth depending on the type and concentration of pollutants.

As CARB has phased out the use of perchloroethylene in dry cleaners by January 1, 2023, under the Airborne Toxic Control Measure for Emissions of Perchloroethylene from Dry Cleaning Operations, the proposed project would not present the potential to site sensitive receptors within proximity to dry cleaning operations using perchloroethylene. In addition, according to the City's Traffic Flow Map (Redding 2022), no urban or rural roads in the City exceed 100,000 or 50,000 vehicles daily, respectively. As such, the proposed project would not result in the siting of new sensitive receptors within distances identified by CARB to high volume roads which may present a health risk. As previously stated, the proposed project would include Policy EJ3B, which would act to reduce sensitive receptor exposure to TACs and subsequent health impacts originating from distribution centers. Gasoline dispensing stations and major rail service or maintenance yards still present potential health impacts to sensitive receptors throughout and near the City. As such, the proposed project could result in the placement of new TAC sources close to receptors that may expose sensitive receptors to substantial pollutant concentrations.

The 2023-2045 General Plan also includes a variety of additional policies that aim to reduce the potential growth of vehicle use through encouraging the use of alternative modes of transportation, monitoring and improving existing sources of TACs throughout the City and reducing overall health impacts related to air

quality in general. These include policies that would encourage infill and mixed-use development such as Policy CDD10A, Policy CDD10C, Policy CDD10D, and Policy CDD10E in the Community Development and Design Element and policies that encourage alternative modes of transportation such as Policy T1A, Policy T2A, Policy T3A, Policy T3B, and Policy T7D in the Transportation Element. Additional policies that aim to reduce impacts from air pollutants include Policy EJ3A, Policy EJ3C, Policy EJ3E, Policy EJ3F, and Policy EJ3G in the Environmental Justice Element.

While policies of the 2023-2045 General Plan target various strategies for reducing human health impacts and exposure of sensitive receptors to substantial pollutant concentrations, the proposed project could still result in the placement of new TAC sources that may expose sensitive receptors to substantial pollutant concentrations. It is not possible to identify quantifiable mitigation measures that would reduce project-specific operational emissions to ensure that localized emissions generated during operation of future development projects under the General Plan Update do not expose sensitive receptors to substantial pollutant concentrations. As such, this impact would be potentially significant.

Level of Significance Before Mitigation: Impact AQ-3 would be potentially significant.

Mitigation Measures

Implementation of Mitigation Measures AQ-1 and AQ-2.

Level of Significance After Mitigation: Impact AQ-3 would be significant and unavoidable.

Under Mitigation Measures AQ-1 and AQ-2, SMMs would be implemented, and the City would consult with the SCAQMD as necessary to identify project-specific BAMMs and other measures that could be implemented to achieve compliance with established thresholds. However, due to the programmatic nature of this Draft EIR, it is not possible to identify quantifiable mitigation measures that would reduce project-specific ROG emissions below the SCAQMD's significance thresholds. Therefore, the potential for development under the 2023-2045 General Plan to result in a cumulatively considerable net increase of a criteria pollutant or ozone precursor for which the project area is in non-attainment is possible, and therefore considered potentially significant and unavoidable.

Contributing to nonattainment status would also contribute to worsening health effects associated with these criteria air pollutants. Known health effects related to ozone include worsening of bronchitis, asthma, and emphysema and a decrease in lung function. Health effects associated with particulate matter include premature death of people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, decreased lung function, and increased respiratory symptoms. Reducing emissions would further contribute to reducing possible health effects related to criteria air pollutants.

It is speculative for this broad-based policy plan to determine how exceeding the regional thresholds would affect the number of days the region is in nonattainment since mass emissions are not correlated with concentrations of emissions, or how many additional individuals in the air basin would be affected by the health effects cited above.

This EIR quantifies the increase in criteria air pollutants emissions in the City. However, at a programmatic level analysis, it is not feasible to quantify the increase in TACs from stationary sources associated with the proposed project or meaningfully correlate how regional criteria air pollutant emissions above the SCAQMD's significance thresholds correlate with basin-wide health impacts.

To determine cancer and noncancer health risk, the location, velocity of emissions, meteorology, and topography of the area as well as the locations of receptors are equally important as model parameters as the quantity of TAC emissions. The white paper in Appendix 5.3-1, "We Can Model Regional Emissions, But Are the Results Meaningful for CEQA," describe several of the challenges of quantifying local effects—particularly health risks—for large-scale, regional projects, and these are applicable to both criteria air pollutants and TACs. Similarly, the two amicus briefs filed by the air districts on the Friant Ranch case (see Appendix 5.3-1) describe two positions regarding CEQA requirements, modeling feasibility, variables, and reliability of results for determining specific health risks associated with criteria air pollutants. The discussions also include the distinction between criteria air pollutant emissions and TACs with respect to health risks. The following paragraphs summarize major points about the infeasibility of assessing health risks of criteria air pollutant emissions and TACs associated with implementation of a general plan.

To achieve and maintain air quality standards, the SMAQMD has established numerical emission indicators of significance for regional and localized air quality impacts of the construction and operational phases of a local plan or project. SMAQMD has established the thresholds based on scientific and factual data that is contained in the federal and state Clean Air Acts and recommends that these thresholds be used by lead agencies in making a determination of significance. The numerical emission indicators are based on the recognition that the air basin is a distinct geographic area with a critical air pollution problem for which AAQS have been promulgated to protect public health. The thresholds represent the maximum emissions from a plan or project that are expected not to cause or contribute to an exceedance of the most stringent applicable national or state AAQS. By comparing the plan's emissions to the thresholds, an EIR assesses whether these emissions directly contribute to any regional or local exceedances of the applicable AAQS and exposure levels.

SMAQMD currently does not have methodologies that would provide the city with a consistent, reliable, and meaningful analysis to correlate specific health impacts with a proposed project's mass emissions. For criteria air pollutants, exceedance of the regional significance thresholds cannot be used to correlate a project to quantifiable health impacts unless emissions are sufficiently high to use a regional model. SMAQMD has not provided methodology to assess the specific correlation between mass emissions generated and their effect on health (see Appendix 5.3.1: San Joaquin Valley Air Pollution Control District's amicus brief, and South Coast Air Quality Management District's amicus brief).

Ozone concentrations depend on a variety of complex factors, including the presence of sunlight and precursor pollutants, natural topography, nearby structures that cause building downwash, atmospheric stability, and wind patterns. Secondary formation of particulate matter and ozone can occur far from sources because of regional transport by wind and topography (e.g., low-level jet stream). Photochemical modeling depends on all emission sources in the entire domain (i.e., modeling grid). Low resolution and spatial averaging produce "noise" and modeling errors that usually exceed individual source contributions. Because of the complexities of predicting ground-level ozone concentrations in relation to the National and California AAQS, it is not possible to link health risks to the magnitude of emissions exceeding the significance thresholds.

Current models used in CEQA air quality analyses are designed to estimate potential project construction and operation emissions for defined projects. The estimated emissions are compared to significance thresholds, which are keyed to reducing emissions to levels that will not interfere with the region's ability to attain the health-based standards. This serves to protect public health in the overall region, but there is currently no CEQA methodology to determine the impact of emissions (e.g., pounds per day) on future concentration levels (e.g., parts per million or micrograms per cubic meter) in specific geographic areas. CEQA thresholds, therefore, are not specifically tied to potential health outcomes in the region.

The EIR must provide an analysis that is understandable for decision making and public disclosure. Regional-scale modeling may provide a technical method for this type of analysis, but it does not necessarily provide a meaningful way to connect the magnitude of a project's criteria pollutant emissions to health effects without speculation. Additionally, this type of analysis is not feasible at a general plan level because the location of emissions sources and quantity of emissions are not known. However, because cumulative development in the city would exceed the regional significance thresholds, the proposed project could contribute to an increase in health effects in the basin until the attainment standards are met.

AQ-4: The proposed project would not result in other emissions that would adversely affect a substantial number of people. [Threshold AQ-4]

Construction activities that have the potential to emit odors and similar emissions include operation of diesel equipment, generation of fugitive dust, and paving (asphalt). Odors and similar emissions from construction would be intermittent and temporary, and generally would not extend beyond the construction area. Projects that have a potential to generate odorous emissions include, but are not limited to, cannabis cultivation, processing, and manufacturing facilities; wastewater treatment facilities; transfer stations; asphalt batch plants; food processing facilities; painting/coating operations (e.g., auto body shops), chemical manufacturing facilities, and similar uses.

While odors could be generated during construction activities, the proposed project would not directly result in construction of any development project. Identification of potential impacts to odor receptors resulting from construction-generated odors, such as equipment exhaust, would require project-specific information for future individual land use development projects that is not currently known. Per the

SCAQMD CEQA Land Use Protocol Guidelines, any project with the potential to frequently expose members of the public to objectionable odors will be deemed to have a significant impact. Odor impacts on residential areas and other sensitive receptors, such as hospitals, day-care centers, schools, etc., warrant the closest scrutiny, but consideration should also be given to other land uses where people may congregate, such as recreational facilities, work sites, and commercial areas. Examples of facilities that have the potential to produce odors and may require special attention in the environmental review process, as identified by SCAQMD, include the following:

- Wastewater Treatment Facilities
- Sanitary Landfills
- Transfer Stations
- Composting Facilities
- Asphalt Batch Plants
- Chemical Manufacturing
- Fiberglass Manufacturing
- Polyester Resin Use Painting/Coating Operations (e.g., auto body shops)
- Food Processing Facilities
- Rendering Plants

If a proposed project is determined to be a potentially significant odor source, mitigation measures should be required. These guidelines further state that the most effective mitigation strategy is to provide a sufficient distance, or buffer zone, between the source and the receptor(s).

The City of Redding contains several of above listed land uses, such as the Waste Transfer Station on Abernathy Road, the Buckeye Water Treatment Plant and Foothill Water Treatment Plan, and a variety of auto-body shops throughout the City.

However, the City's Municipal Code contains several ordinances that would eliminate, or limit odors emitted by various land uses. For example, Section 18.40.110 (C), Performance Standards-Citywide, Odors, states that no use, process, or activity shall produce objectionable odors detectable by a reasonable person that are perceptible without instruments at the property lines of an "R" district. Section 18.34.030 (B) addresses requirements for industrial uses and states that industrial or manufacturing uses which may be objectionable by reason of producing offensive odor, dust, noise, bright lights, vibration, project scale, or traffic volumes or involving the storage or use of explosives or other dangerous materials may be denied a site development permit.

Chapter 18.46, Nonconforming Uses, Structures, Sites and Parcels, of the Municipal Code, which addresses existing land uses in the City that present conflicts with conforming land uses under the zoning code, states that no nonconforming use that involves the storage, use or generation of hazardous materials, presses, products, or wastes or other activity that may be detrimental to public health or safety because of the potential to generate dust, glare, heat, noise, noxious gases, odor, smoke, vibration, or other conditions that would be incompatible with surrounding uses may be substituted for an existing nonconforming use even if the use is of the same or less intensive nature. Section 6.12.210, Odor Control, requires that all cannabis businesses install ventilation and filtration systems to limit odors from cannabis uses.

In addition to the City's Municipal Code, the proposed project does not include any changes to land use designations and thus would not result in the introduction of new odor sources beyond what is currently allowed. Nonetheless, these existing requirements in the Municipal Code would minimize odor emissions from adversely affecting a substantial number of people within the City, and impacts would be less than significant.

Level of Significance Before Mitigation: Impact AQ-4 would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation: Impact AQ-4 would be less than significant.

5.3.5 CUMULATIVE IMPACTS

AQ-5	The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in significant cumulative impacts with respect to air quality.

The cumulative area of analysis is the NSVAB, which includes Redding. Like GHG emissions impacts, air quality impacts are regional in nature because no single project generates enough emissions that would cause an air basin to be designated a nonattainment area. Furthermore, per SCAQMD, projects generating emissions that exceed the regional significance thresholds would not only be considered to result in a significance project-level impact but would also be considered to result in a cumulative impact. Thus, the impacts previously discussed are evaluated in the cumulative context and no additional cumulative analysis is needed.

In summary, the 2023-2045 General Plan would not be consistent with the applicable 2021 AQAP because the projected emissions for ozone precursors (NO_X and ROG) generated by buildout of the proposed General Plan Update would exceed the projected levels of these emissions in the AQAP. Since SCAQMD is in non-attainment status for ozone, this impact is considered significant and unavoidable. The proposed project is

also expected to generate construction and operational emissions that would exceed the SCAQMD thresholds. Implementation of Mitigation Measures AQ-1 and AQ-2 would reduce construction and operational emissions for future projects under the 2023-2045 General Plan by ensuring that all projects implement the applicable SMMs and BAMMs; however, due to the programmatic nature of this Draft EIR, it cannot be determined whether implementation of Mitigation Measures AQ-1 and AQ-2 would reduce emissions below the specified thresholds during construction or operation.

The proposed project was also determined to result in less than significant impacts with respect to sensitive receptors due to the inclusion of Policy EJ3B, as well as the proposed project not resulting in any changes to existing land use designations. Furthermore, any odor generating uses under the proposed project would be subject to the provisions of the City's Municipal Code ensuring that impacts related to odors and other emissions are less than significant. Overall, cumulative impacts to air quality are considered significant and unavoidable.

Level of Significance Before Mitigation: AQ-5 would be potentially significant.

Mitigation Measures

Implement Mitigation Measures AQ-1 and AQ-2.

Level of Significance After Mitigation: AQ-5 would be significant and unavoidable. Though implementation of mitigation would reduce cumulative air quality impacts to the extent feasible, Impact AQ-5 would remain significant and unavoidable.

5.3.6 REFERENCES

Bay Area Air Quality Management District (BAAQMD). 2017, May. California Environmental Quality Act Air Quality Guidelines. http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.

California Air Resources Board (CARB). 1999. Final Staff Report: Update to the Toxic Air Contaminant List. https://ww2.arb.ca.gov/sites/default/files/classic/toxics/tac/update98/update98.htm.

_____. 2005, April. Air Quality and Land Use Handbook: A Community Health Perspective. http://www.aqmd.gov/docs/default-source/ceqa/handbook/california-air-resources-board-air-quality-and-land-use-handbook-a-community-health-perspective.pdf.

_____. 2016, May 4. Ambient Air Quality Standards. https://ww2.arb.ca.gov/sites/default/files/2020-07/aaqs2.pdf.

_____. 2017, April. Strategies to Reduce Air Pollution Exposure Near High-Volume Roadways https://ww2.arb.ca.gov/sites/default/files/2017-10/rd_technical_advisory_final.pdf.

_____. 2022, November. Area Designations Maps: State and National https://ww2.arb.ca.gov/resources/documents/maps-state-and-federal-area-designations

_____. 2023a (Accessed). Common Air Pollutants: Air Pollution and Health, https://ww2.arb.ca.gov/resources/common-air-pollutants.

_____.2023b (Accessed). Air Pollution Data Monitoring Cards (2019, 2020, and 2021), https://www.arb.ca.gov/adam/topfour/topfour1.php.

Department of Finance (DOF). 2022. E-5 Population and Housing Estimates for Cities, Counties, and the State, 2020-2022. https://dof.ca.gov/forecasting/demographics/estimates/e-5-population-and-housing-estimates-for-cities-counties-and-the-state-2020-2022/

Office of Environmental Health Hazard Assessment (OEHHA). 2007. Air Toxicology and Epidemiology: Air Pollution and Children's Health.

Redding, City of. 2000. City of Redding 2000-2020 General Plan: Air Quality Element. https://www.cityofredding.org/home/showpublisheddocument/5497/635791167033300000

_____. 2022. Traffic Flow Map, https://redding.maps.arcgis.com/apps/webappviewer/index.html?id=1dc76656439a4a62b41e475516963897.

Sacramento Valley Air Quality Engineering and Enforcement Professionals (SVAQEEP). 2021. Draft Northern Sacramento Valley Planning Area: 2021, Triennial Air Quality Attainment Plan. https://www.co.shasta.ca.us/docs/libraries/resource-management-docs/aq-docs/2021_nsvaq_attainment_plan.pdf

Shasta County Air Quality Management District (SCAQMD). 2003, November. Protocol for Review Land Use Permitting Activities. https://www.shastacounty.gov/sites/default/files/fileattachments/air_quality/page/2415/scaqmd-ceqa-land-use-protocol.pdf

Shasta Regional Transportation Agency (SRTA). 2015. 2015 Regional Transportation Plan for Shasta County. https://www.srta.ca.gov/DocumentCenter/View/1881/SRTA_2015_RTP_Final_Adopted_June_2015_with_appendices?bidId=

_____. 2018. Regional Housing Need Allocation (RHNA). https://www.srta.ca.gov/240/Regional-Housing-Need-Allocation-RHNA

South Coast Air Quality Management District (South Coast AQMD). 2005. Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning, http://www.aqmd.gov/docs/default-source/planning/air-quality-guidance/complete-guidance-document.pdf.

_____. 2020, February 3. Health and Environmental Effects of Hazardous Air Pollutants. https://www.epa.gov/haps/health-and-environmental-effects-hazardous-air-pollutants.

United States Environmental Protection Agency (USEPA). 2002. Health Assessment Document for Diesel Engine Exhaust.

_____. 2023 (Accessed). Criteria Air Pollutants. https://www.epa.gov/criteria-air-pollutants.

This page intentionally left blank.

5.4 BIOLOGICAL RESOURCES

This chapter describes the regulatory framework and existing conditions in the Plan Area related to biological resources, and the potential impacts of the project on biological resources. The information in this section is based partly on the following technical studies:

- *Biological Resources Technical Memorandum*, ECORP Consulting, Inc., November 2022. A complete copy of this report is included as Appendix 5.4-1 to this EIR.

Information and analysis from the Biological Resources Technical Memorandum only focuses on the proposed sphere of influence (SOI). Development beyond the SOI will require more analysis as part of the annexation process and that the nature of biological resources will change between the baseline and planning horizon therefore making any analysis now premature.

5.4.1 ENVIRONMENTAL SETTING

5.4.1.1 REGULATORY FRAMEWORK

This section summarizes key federal, state, and local regulations, plans, and programs that provide protection and management of sensitive biological resources in Redding.

Federal Regulations

Endangered Species Act

The Federal Endangered Species Act (ESA) protects fish and wildlife species, and their habitats, that have been identified by the U.S. Fish and Wildlife Service (USFWS) or National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS) as threatened or endangered. Endangered refers to species, subspecies, or distinct population segments that are in danger of extinction through all or a significant portion of their range. Threatened refers to species, subspecies, or distinct population segments that are likely to become endangered in the near future.

The ESA is administered by the USFWS and the NMFS. In general, NMFS is responsible for protection of ESA-listed marine species and anadromous fish, whereas other listed species are under USFWS jurisdiction. Provisions of ESA Sections 7 and 9 are relevant to the General Plan update and are summarized below.

Endangered Species Act Authorization Process for Federal Actions (Section 7)

Section 7 of the ESA provides a means for authorizing *take* of threatened and endangered species by federal agencies. Under Section 7, the federal agency conducting, funding, or permitting an action (the lead federal agency, such as the U.S. Army Corps of Engineers [USACE]) must consult with USFWS or NMFS, as appropriate, to ensure that the proposed action will not jeopardize endangered or threatened species or destroy or adversely modify designated critical habitat. If a proposed project "may affect" a listed species

or designated critical habitat, the lead agency is required to prepare a biological assessment evaluating the nature and severity of the expected effect. In response, USFWS or NMFS issues a biological opinion, with a determination that the proposed action either:

- May jeopardize the continued existence of one or more listed species (jeopardy finding) or result in the destruction or adverse modification of critical habitat (adverse modification finding), or
- Will not jeopardize the continued existence of any listed species (no jeopardy finding) or result in adverse modification of critical habitat (*no adverse modification finding*).

The biological opinion issued by the USFWS or NMFS may stipulate discretionary "reasonable and prudent" conservation measures. If the project would not jeopardize a listed species, the USFWS or NMFS issues an incidental take statement to authorize the proposed activity.

Endangered Species Act Prohibitions (Section 9)

Section 9 of the ESA prohibits the take of any fish or wildlife species listed under the ESA as endangered. Take of threatened species also is prohibited under Section 9, unless otherwise authorized by federal regulations. In some cases, exceptions may be made for threatened species under ESA Section 4[d]; in such cases, the USFWS or NMFS issues a "4[d] rule" describing protections for the threatened species and specifying the circumstances under which take is allowed. *Take*, as defined by ESA, means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." *Harm* is defined as "any act that kills or injures the species, including significant habitat modification." In addition, Section 9 prohibits removing, digging up, cutting, and maliciously damaging or destroying federally listed plants on sites under federal jurisdiction.

Section 10

When no discretionary action is being taken by a federal agency but a project may result in the take of listed species, an incidental take permit under Section 10 of the ESA is necessary. The purpose of the incidental take permit is to authorize the take of federally listed species that may result from an otherwise lawful activity, not to authorize the activities themselves. To obtain an incidental take permit, an application must be submitted that includes a Habitat Conservation Plan (HCP). The purpose of the HCP planning process is to ensure that adequate minimization and mitigation for impacts to listed species and/or their habitat will occur.

Critical Habitat

For the purpose of designating Critical Habitat, habitat is defined as the abiotic and biotic setting that currently or periodically contains the resources and conditions necessary to support one or more life processes of a species. Critical Habitat designations identify, to the extent known and using the best scientific data available, physical or biological features essential to the conservation of the species. These include features that occur in specific areas and that are essential to support the life-history needs of the

species, including but not limited to water characteristics, soil type, geological features, sites, prey, vegetation, symbiotic species, or other features. A feature may be a single habitat characteristic, or a more complex combination of habitat characteristics. Features may include habitat characteristics that support ephemeral or dynamic habitat conditions (i.e., conditions that are temporary, short-term, and/or changing). Features may also be expressed in terms relating to principles of conservation biology, such as patch size, distribution distances, and connectivity.

Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) establishes a management system for national marine and estuarine fishery resources. This legislation requires that all federal agencies consult with NMFS regarding all actions or proposed actions permitted, funded, or

undertaken that may adversely affect essential fish habitat (EFH). EFH is defined as "waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." The legislation states that migratory routes to and from anadromous fish spawning grounds are considered EFH. The phrase *adversely affect* refers to the creation of any impact that reduces the quality or quantity of EFH. Federal activities that occur outside EFH but that may, nonetheless, have an impact on EFH waters and substrate also must be considered in the consultation process.

Clean Water Act, Section 404

The United States Army Corps of Engineers (Corps) regulates discharge of dredged or fill material into "waters of the United States."[1] Any filling or dredging within waters of the United States requires a permit , which entails assessment of potential adverse impacts to Corps wetlands and jurisdictional waters and any mitigation measures that the Corps requires. Section 7 consultation with USFWS may be required for impacts to a federally listed species. If cultural resources may be present, Section 106 review may also be required. When a Section 404 permit is required, a Section 401 Water Quality Certification is also required from the Regional Water Quality Control Board (RWQCB).

Clean Water Act

The federal Clean Water Act (CWA) was enacted as an amendment to the federal Water Pollution Control Act of 1972, which outlined the basic structure for regulating discharges of pollutants to waters of the

[1] "Waters of the United States," as applied to the jurisdictional limits of the Corps under the Clean Water Act, includes all waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the tide; all interstate waters, including interstate wetlands; and all other waters, such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds whose use, degradation, or destruction could affect interstate or foreign commerce; water impoundments; tributaries of waters; territorial seas; and wetlands adjacent to waters. The terminology used by Section 404 of the Clean Water Act includes "navigable waters," which is defined at Section 502(7) of the act as "waters of the United States, including the territorial seas."

United States. The CWA serves as the primary federal law protecting the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands.

The CWA empowers the US Environmental Protection Agency (EPA) to set national water quality standards and effluent limitations and includes programs addressing both point-source and nonpoint-source pollution. Point-source pollution is pollution that originates or enters surface waters at a single, discrete location, such as an outfall structure or an excavation or construction site. Nonpoint-source pollution originates over a broader area and includes urban contaminants in stormwater runoff and sediment loading from upstream areas. The CWA operates on the principle that all discharges into the nation's waters are unlawful unless specifically authorized by a permit; permit review is the CWA's primary regulatory tool. The following sections provide additional details on specific sections of the CWA.

Permits for Fill Placement in Waters and Wetlands (Section 404)

CWA 404 regulates the discharge of dredged and fill materials into waters of the United States. Waters of the United States refers to oceans, bays, rivers, streams, lakes, ponds, and wetlands. On June 22, 2020, the EPA and the Department of the Army published the Navigable Waters Protection Rule to define "Waters of the United States" (85 Federal Register 22250). The agencies streamlined the definition into four categories of jurisdictional waters, provided clear exclusions for many water features that traditionally have not been regulated, and defined terms in the regulatory text that have never been defined before.

The Navigable Waters Protection Rule regulates traditional navigable waters and the core tributary systems that provide perennial or intermittent flow into them.

The four categories of federally regulated waters are:

- The territorial seas and traditional navigable waters.
- Perennial and intermittent tributaries to those waters.
- Certain lakes, ponds, and impoundments.
- Wetlands adjacent to jurisdictional waters.

Applicants must obtain a permit from the USACE for all discharges of dredged or fill material into waters of the United States, including adjacent wetlands, before proceeding with a proposed activity. The USACE may issue either an individual permit evaluated on a case-by-case basis or a general permit evaluated at a program level for a series of related activities. General permits are preauthorized and are issued to cover multiple instances of similar activities expected to cause only minimal adverse environmental effects. Nationwide permits (NWPs) are a type of general permit issued to cover particular fill activities. Each NWP specifies particular conditions that must be met for the NWP to apply to a particular project. Potential waters of the United States in the city would be under the jurisdiction of the Sacramento District of the USACE.

Compliance with CWA 404 requires compliance with several other environmental laws and regulations. The USACE cannot issue an individual permit or verify the use of a general permit until the requirements of the National Environmental Policy Act, ESA, and National Historic Preservation Act (NHPA) have been met. In addition, the USACE cannot issue or verify any permit until a water quality certification or a waiver of certification has been issued pursuant to CWA 401.

Permits for Stormwater Discharge (Section 402)

CWA 402 regulates construction-related stormwater discharges to surface waters through the National Pollutant Discharge Elimination System (NPDES) program, administered by the EPA. In California, the State Water Resources Control Board is authorized by the EPA to oversee the NPDES program through the Regional Water Quality Control Boards (RWQCB) (see the related discussion under "Porter-Cologne Water Quality Control Act" below). The city is under the jurisdiction of the Central Valley RWQCB.

NPDES permits are required for projects that disturb more than one acre of land. The NPDES permitting process requires the project applicant to file a public notice of intent (NOI) to discharge stormwater and prepare and implement a stormwater pollution prevention plan (SWPPP). The SWPPP includes a site map and a description of proposed construction activities. In addition, it describes the best management practices (BMP) that will be implemented to prevent soil erosion and discharge of other construction-related pollutants (e.g., petroleum products, solvents, paints, and cement) that could contaminate nearby water resources. Permittees are required to conduct annual monitoring and reporting to ensure that BMPs are correctly implemented and effective in controlling the discharge of stormwater-related pollutants.

Water Quality Certification (Section 401)

Under CWA 401, applicants for a federal license or permit to conduct activities that may result in the discharge of a pollutant into waters of the United States must obtain certification from the state in which the discharge would originate or, if appropriate, from the interstate water pollution control agency with jurisdiction over affected waters at the point where the discharge would originate. Therefore, all projects that have a federal component and may affect State water quality (including projects that require federal agency approval, such as issuance of a CWA 404 permit) also must comply with CWA Section 401. In California, the State Water Resources Control Board is authorized to issue CWA 401 water quality certification through the RWQCB. If the USACE determines a wetland is not subject to regulation under CWA 404, CWA 401 water quality certification is not required. However, the RWQCB may impose waste discharge requirements if fill material is placed into waters of the State (see the related discussion under "Porter-Cologne Water Quality Control Act," below).

National Pollutant Discharge Elimination System Program

The federal Water Pollution Control Act established the National Pollutant Discharge Elimination System (NPDES) permit program to control discharges of pollutants from point sources (Section 402). The NPDES Permit Program is the primary federal program that regulates point-source and nonpoint-source discharges

to waters of the United States. The SWRCB issues both general and individual NPDES permits for certain activities.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 U.S. Government Code 703–711) implements international treaties between the US and other nations devised to protect migratory birds, any of their parts, eggs, and nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. As authorized by the MBTA, the USFWS issues permits to qualified applicants for the following types of activities: falconry, raptor propagation, scientific collecting, special purposes (i.e., rehabilitation, education, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal. The regulations governing migratory bird permits can be found in 50 CFR part 13 General Permit Procedures and 50 CFR part 21 Migratory Bird Permits. The State of California has incorporated the protection of birds of prey in Sections 3800, 3513, and 3503.5 of the California Fish and Game Code.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act of 1940 (as amended) provides for the protection of bald eagle and golden eagle by prohibiting the take, possession, sale, purchase, barter, offer to sell, purchase or barter, transport, export or import, of any bald or golden eagle, alive or dead, including any part, nest, or egg, unless allowed by permit (16 USC 668(a); 50 CFR 22). USFWS may authorize take of bald eagles and golden eagles for activities where the take is associated with, but not the purpose of, the activity and cannot practicably be avoided (50 CFR 22.26).

State Regulations

California Endangered Species Act

The California Endangered Species Act (CESA) establishes State policy to conserve, protect, restore, and enhance threatened or endangered species and their habitats. CESA mandates that State agencies should not approve projects that jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. For projects that would affect species that are on the federal and State lists, compliance with the federal ESA satisfies CESA if the California Department of Fish and Wildlife (CDFW) determines that the federal incidental take authorization is consistent with CESA under California Fish and Game Code Section 2080.1. For projects that would result in take of species that are only State listed, the project proponent must apply for a take permit under Section 2081(b) of the California Fish and Game Code.

California Fish and Game Code

Under the California Fish and Game Code, the CDFW provides protection from "take" for a variety of species. The CDFW also protects streams, water bodies and riparian corridors through the streambed alteration agreement process under Section 1601 to 1606 of the California Fish and Game Code. The Fish and Game Code stipulates that it is "unlawful to substantially divert or obstruct the natural flow or substantially change the bed, channel or bank of any river, stream or lake" without notifying CDFW, incorporating necessary mitigation, and obtaining a streambed alteration agreement. CDFW's jurisdiction extends to the top of banks and often includes the outer edge of riparian vegetation canopy cover.

California Native Plant Protection Act

The California Native Plant Protection Act of 1977 (CNPPA) prohibits importation of rare and endangered plants into California, "take" of rare and endangered plants and sale of rare and endangered plants. CESA defers to the CNPPA, which ensures that State-listed plant species are protected when State agencies are involved in projects subject to CEQA. In this case, plants listed as rare under the CNPPA are not protected under CESA but under CEQA.

California Natural Communities

Sensitive natural communities are natural community types considered to be rare or of a "high inventory priority" by the CDFW. Although sensitive natural communities have no legal protective status under ESA or CESA, they are provided some level of consideration under CEQA. Appendix G of the CEQA Guidelines identifies potential impacts on a sensitive natural community as one of six criteria to consider in determining the significance of a proposed project. While no thresholds are established as part of this criterion, it serves as an acknowledgement that sensitive natural communities are an important resource and, depending on their rarity, should be recognized as part of the environmental review process. The level of significance of a project's impact on any particular sensitive natural community will depend on that natural community's relative abundance and rarity.

As an example, a discretionary project that has a substantial adverse effect on any riparian habitat, native grassland, valley oak woodland, and/or other sensitive natural community would normally be considered to have a significant effect on the environment. Further loss of a sensitive natural community could be interpreted as substantially diminishing habitat, depending on its relative abundance, quality and degree of past disturbance, and the anticipated impacts to the specific community type.

California Oak Woodlands Conservation Act

The California Oak Woodlands Conservation Act was enacted in 2001 to protect oak woodland habitats that were being diminished due to development, firewood harvesting, and agricultural conversions. The Oak Woodlands Conservation Program was established to provide funding opportunities for private landowners, conservation organizations, and cities and counties to conserve and restore oak woodlands.

The program authorizes the Wildlife Conservation Board to purchase oak woodland conservation easements and provide grants for land improvements and oak restoration efforts.

Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Water Quality Act, the RWQCB regulates actions that would involve "discharging waste, or proposing to discharge waste, within any region that could affect the water of the state" (Water Code 13260(a)). Waters of the state are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (Water Code 13050 (e)). The RWQCB regulates all such activities, as well as dredging, filling, or discharging materials into waters of the State, that are not regulated by the USACE due to a lack of connectivity with a navigable water body. The RWQCB may require issuance of WDRs for these activities. Although all waters of the United States that are within the borders of California are also waters of the state, the converse is not true (i.e., not all waters of the State are also waters of the United States). Thus, California retains authority to regulate discharges of waste into any waters of the state, regardless of whether the USACE has concurrent jurisdiction under CWA 404.

California Fish and Game Code Special Protections for Birds

In addition to protections contained within the California ESA and California Fish and Game Code § 3511 described above, the California Fish and Game Code includes several sections that specifically protect certain birds:

- Section 3800 states that it is unlawful to take nongame birds, such as those occurring naturally in California that are not resident game birds, migratory game birds, or fully protected birds, except when in accordance with regulations of the California Fish and Game Commission or a mitigation plan approved by CDFW for mining operations.
- Section 3503 prohibits the take, possession, or needless destruction of the nest or eggs of any bird.
- Section 3503.5 protects birds of prey (which includes eagles, hawks, falcons, kites, ospreys, and owls) and prohibits the take, possession, or destruction of any birds and their nests.
- Section 3505 makes it unlawful to take, sell, or purchase egrets, ospreys, and several exotic non-native species, or any part of these birds.
- Section 3513 specifically prohibits the take or possession of any migratory nongame bird as designated in the MBTA.

Lake or Streambed Alteration Agreements

Section 1602 of the California Fish and Game Code requires individuals or agencies to provide a Notification of Lake or Streambed Alteration to CDFW for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake." CDFW reviews the proposed reviews the proposed actions and, if necessary, proposed measures to protect affected fish

and wildlife resources. The final proposal mutually agreed upon by CDFW and the applicant is the Lake and Streambed Alteration Agreement.

Local Regulations

2000-2020 Redding General Plan

The following policies are included in the existing General Plan regarding biological resources. The numbering is from the existing General Plan and therefore may not be consecutive.

Natural Resources Element

- Goal NR5: Preserve and protect the significant habitats, plants, and wildlife that exist in the planning area.
    - Policy NR5A: Minimize the disruption of sensitive habitat caused by new development by encouraging innovative design and site planning and establishing performance standards for habitat protection.
    - Policy NR5B: Work to preserve and enhance fisheries in the Sacramento River and those streams or stream segments identified on Figure 3-2.
    - Policy NR5C: Maintain and update data and information regarding areas of significant biological value within the Planning Area to:
        - Provide critical information to the community.
        - Facilitate resource conservation.
        - Facilitate appropriate management of development activities.
- Goal NR6: Protect "special status" plant and animal species; preserve and protect creek corridors, riparian areas, vernal pools, and wetlands.
    - Policy NR6A: Preserve watercourses, vernal pools, riparian habitat, and wetlands in their natural state to the extent feasible. Fully mitigate unavoidable adverse impacts such as wetland filling or disturbance.
    - Policy NR6B: Provide adequate buffering of sensitive habitats whenever necessary. Buffer size should be based upon the type of habitat as well as its size and habitat value.
    - Policy NR6C: Ensure that uses allowed within riparian corridors:
        - Minimize the creation of erosion, sedimentation, and increased runoff.
        - Emphasize retention and enhancement of natural riparian vegetation.
        - Provide for unimpaired passage of fish and wildlife.

        - Avoid activities or development of new features that result in disturbance or dispersal of wildlife.
        - Avoid channelization.
        - Avoid substantial interference with surface and subsurface flows.
        - Incorporate natural vegetation buffers.
    - Policy NR6D: Continue to require new development to provide minimum river and creek-corridor development setbacks (buffer areas) in accordance with Figure 3-3 and Zoning Code Chapter 18.48. These setbacks may be modified based on project/resource-specific circumstances and appropriate mitigation. These buffer areas should be dedicated, or a permanent conservation easement granted to the City as a condition of development approval.
    - Policy NR6E: Strive to conserve all "special-status species" within the Planning Area. Ensure implementation of statutory protection for these species.
    - Policy NR6F: Support public and private efforts to establish habitat mitigation banks, habitat conservation plans, conservation easements, and other mechanisms that serve to protect sensitive habitats and species.
    - Policy NR6G: Ensure implementation of policies and regulations for protection of those wildlife species having statutory protection under local, state, and/or federal laws.
- Goal NR7: Recognize the aesthetic and biological values of oak Woodlands and other natural vegetation.
    - Policy NR7A: Promote existing native oaks, especially valley oaks, by establishing standards for the design of development projects. The preservation of stands of trees within developments is preferred over preservation of individual trees, with the exception of special-status species and heritage trees.
    - Policy NR7B: Identify and establish appropriate "tree mitigation areas" to be used for the planting of native trees in concert with development project mitigation.
- Goal NR8: Recognize and protect linkages and migratory corridors.
    - Policy NR8A: Maintain, where possible, the habitat linkages/wildlife corridors and sensitive habitats that are created by the open-space ("Greenway") network established by this General Plan. Require development in areas depicted as "Greenway" on the General Plan Diagram to consider corridor impacts and, where necessary, provide alternate usable links between habitat types or areas and/or provide alternate development plans that avoid the open-space network and sensitive habitats.

- Policy NR8B: Maintain and preserve other natural habitat linkages and wildlife corridors in the City where feasible. Discourage development impacts to these linkages and corridors and fully mitigate associated unavoidable adverse impacts.

- Goal NR9: Promote and facilitate habitat preservation, restoration, and enhancement.
  - Policy NR9A: Encourage the acquisition, preservation, restoration, and enhancement of native vegetation with a focus on wetlands and riparian habitat that will improve the biological value and integrity of the City's natural resources. Encourage native landscape in unvegetated, manmade areas, such as along streets and in abandoned lots.
  - Policy NR9B: Encourage education and community involvement in the protection and enhancement of local biological resources.

City of Redding Municipal Code

The Redding Municipal Code provides tree protection through the Streets and Sidewalks Ordinance, Chapter 13.40, Trees and Shrubs, and through the Zoning Ordinance, Chapter 18.45, Tree Management. Chapter 13.40 regulates trees on public areas and plant strips, and Chapter 18.45 regulates trees on private land.

Chapter 18.45, Tree Management, requires either: 1) approval to remove trees associated with an application for a discretionary development permit (e.g., use permit, subdivision, specific plan); or 2) a tree permit for the removal of any tree that exceeds six inches diameter at breast height in instances where a discretionary permit is not required. The ordinance focus is on preservation of stands of trees and those exceptional trees that because of their characteristics are determined to be “candidate” trees and should be considered for preservation. The findings for issuance of a tree permit for the proposed Project are in section 18.45.070 A and B of the Redding Municipal Code, summarized as follows:

1. An application for a discretionary project is also considered an application for tree removal in instances where trees will be affected by the development.
2. Where identified candidate trees cannot be preserved, the development should address the preservation of the most desirable candidate trees.
3. The Development Services Director may waive the requirement to identify candidate trees based on the characteristics of the site. Confirmation of the determination to waive the requirement to identify and save candidate trees rests with the Project’s approving body.

In instances where a tree removal permit is required, a permit may be denied if it includes removal of a listed landmark or heritage tree in the plan established by Chapter 13.40. A provision of the permit may require replanting of trees at appropriate locations on the property or off-site location to replace those that will be removed. The size and number of trees to be replanted is at the discretion of the Development

Services Department Director, but must bear a reasonable relationship to the value, size, type, and similar considerations as the tree approved for removal.

5.4.1.2 EXISTING CONDITIONS

Site Characteristics and Land Use

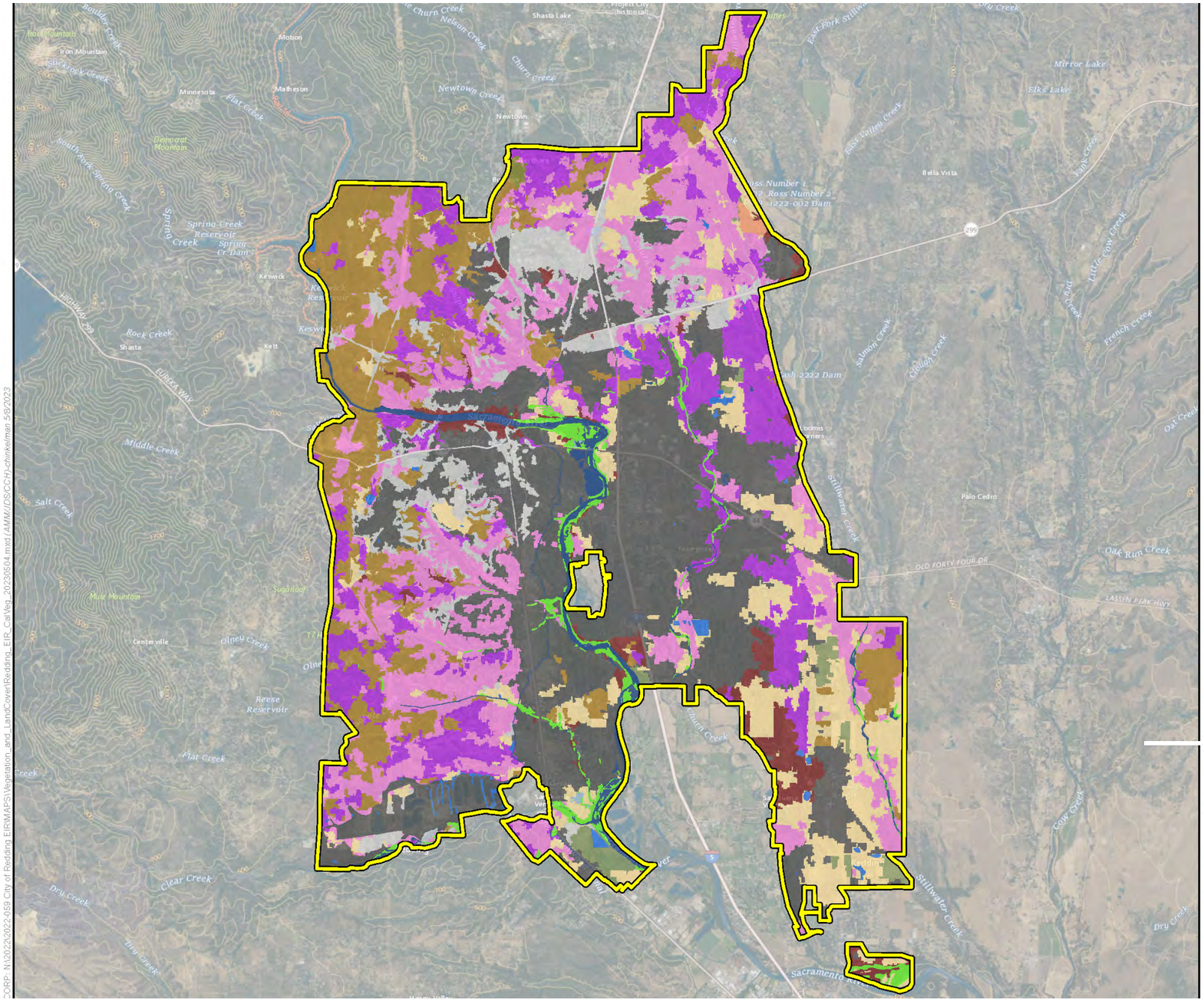
The SOI is characterized by a mixture of urban and woodland land cover types. The SOI islocated within the Inner North Coast Ranges and Cascade Range Foothills geographic subdivisions, with a very small portion on the western side that is located within the Klamath Ranges (Baldwin et al. 2012). The average winter low temperature in the vicinity of the SOI is 38.1° Fahrenheit, while the average summer high temperature is 93° Fahrenheit (NOAA 2022a).

Land use in the SOI includes commercial, industrial, residential, and recreational uses. The central portion of the SOI includes the City of Redding and is classified as urban. The surrounding landscape consists of agriculture, low- and medium-density residential areas, and undeveloped open space. As shown in Table 5.4-1, *CalVeg Land Cover Types and acreage within Redding Sphere of Influence*, Urban (15,199 acres, Blue Oak Woodland (8,814 acres), Mixed Chaparral (6,567 acres), and Annual Grassland (5,371 acres) land cover types cover large portions of the SOI. Figure 5.4-1, *CalVeg – Land Cover,* shows the CalVeg land cover types within Redding's SOI.

TABLE 5.4-1 CALVEG LAND COVER TYPES AND ACREAGE WITHIN REDDING SPHERE OF INFLUENCE

Land Cover Type (CalVeg)	Acres	Land Cover Percent
Urban	15,199	30.76
Blue Oak Woodland	8,814	17.84
Mixed Chaparral	6,567	13.29
Blue Oak-Foothill Pine	6,275	12.70
Annual Grassland	5,371	10.87
Barren	3,166	6.41
Valley Oak Woodland	1,324	2.68
Riverine	989	2.00
Valley Foothill Riparian	730	1.48
Cropland	566	1.15
Lacustrine	262	0.53
Pasture	86	0.17
Montane Hardwood	54	0.11
Fresh Emergent Wetland	14	0.03
Grand Total:	**49,416**	**100.00**

Source: ECORP Consulting, Inc. 2023, May. Biological Resources Technical Memorandum for the City of Redding General Plan Update. Prepared for the City of Redding. (Appendix 5.4-1)



Source: ECORP, 2022.

0 2
Scale (Miles)

Figure 5.4-1
CalVeg – Land Cover

This page intentionally left blank.

California Aquatic Resource Inventory

The California Aquatic Resource Inventory (CARI; San Francisco Estuary Institute [SFEI] 2017) is a statewide map of surface waters and related habitats combining multiple national and regional datasets, including the National Wetlands Inventory and the National Hydrography Dataset. CARI includes aquatic resource features mapped using a variety of remote sensing and modeling techniques. As such, these aquatic features may or may not exist as represented. In addition, CARI data varies in detail, accuracy, and age, and is meant to be used as a tool to assist with an aquatic resource delineation but not as the only source of information (SFEI 2017). Therefore, it is recommended that ground-level surveys be conducted to determine the presence of aquatic resources subject to the jurisdiction of state and federal agencies prior to making site-specific land use decisions.

According to CARI (SFEI 2017; California Wetlands Monitoring Workgroup 2022), 18 aquatic feature types have been mapped within Redding:

- Fluvial Natural
- Fluvial Unnatural
- Depressional Perennial Natural Emergent
- Depressional Perennial Natural Non-vegetated
- Depressional Perennial Non-vegetated
- Depressional Perennial Unnatural Emergent
- Depressional Perennial Unnatural Non-vegetated
- Depressional Perennial Unnatural Vegetated
- Depressional Seasonal
- Depressional Seasonal Natural Emergent
- Depressional Seasonal Natural Forested
- Depressional Seasonal Natural Shrub-Scrub
- Depressional Seasonal Unnatural Emergent
- Depressional Seasonal Unnatural Forested
- Depressional Seasonal Unnatural Non-vegetated
- Depressional Seasonal Unnatural Shrub-Scrub
- Depressional Unnatural Non-vegetated
- Lacustrine Unnatural Non-vegetated

Figure 5.4-2, *California Aquatic Resources Inventory*, shows the distribution of these aquatic features within the SOI.

Fluvial systems are dominated by rivers and streams. The fluvial unnatural aquatic feature type corresponds to irrigation canals and drainage ditches. Fluvial natural corresponds to portions of the Sacramento River and its tributaries in the surrounding area, such as Olney Creek, Tadpole Creek, and Clear Creek. Depressional perennial or seasonal features consist of both natural and unnatural wetlands. Unnatural wetland features include manufactured lakes and ponds, agricultural ponds, and manufacturing and construction-related ponds (e.g., Shasta Redi-Mix ponds). Natural wetland features include natural floodplain features, riparian forests, and depressional wetlands found throughout the City. Lacustrine unnatural non-vegetated features include manufactured ponds and lakes and can be found along the Sacramento River south of the terminus of Gravel Plant Road, north of Riverview Country Club, and on the west side of the river, south of the Highway 44 crossing.

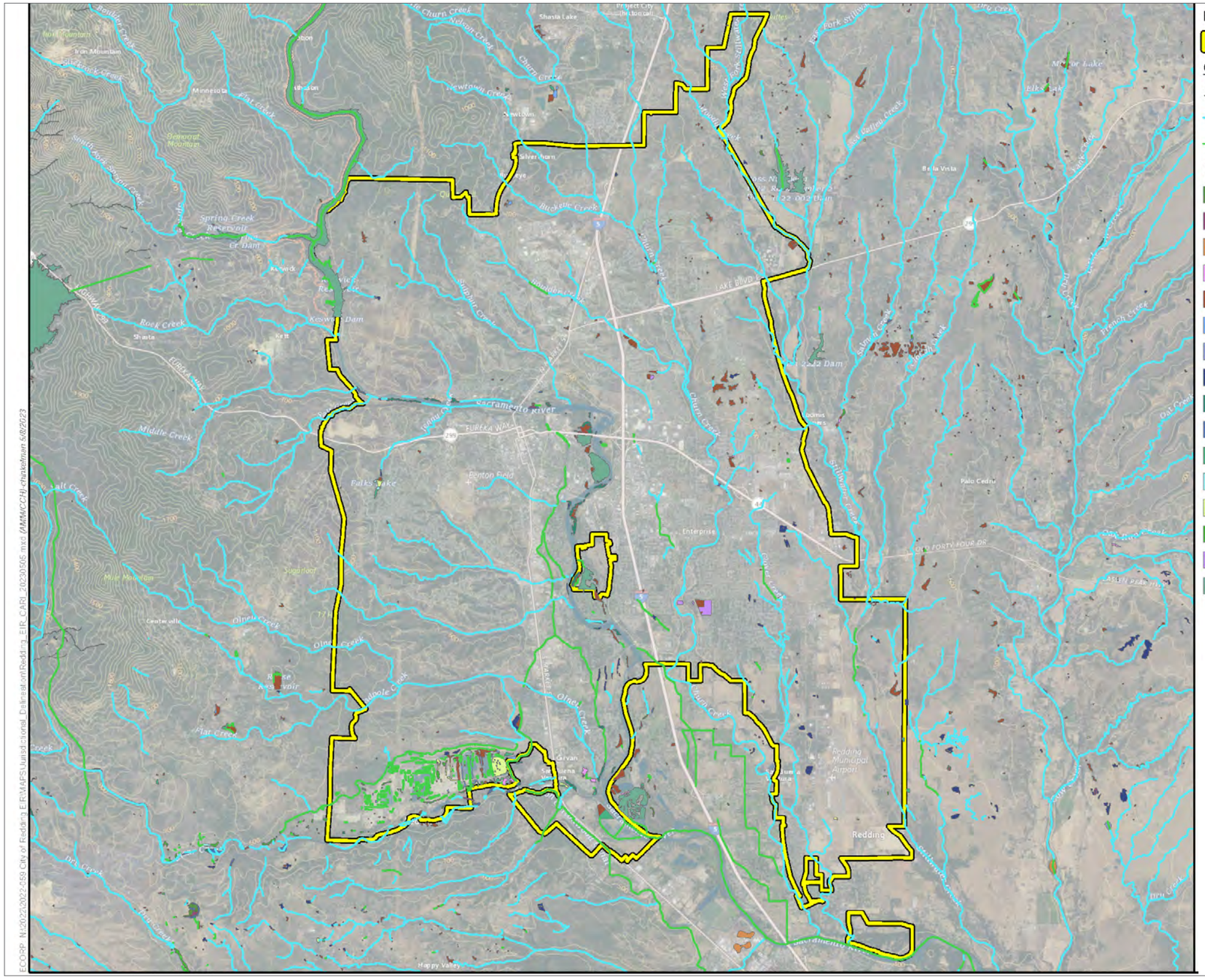
Special Status Species

Based on results provided by the California Natural Diversity Database a total of 84 special-status species have documented occurrences or have potential to occur within the SOI. This includes 35 plants; 6 invertebrates; 14 fish; 3 amphibians; 1 reptile; 15 birds; and 10 mammals.

Plants

A total of 35 special-status plant species have potential or low potential to occur within the SOI as presented below. A large portion of the rare plants can be found in cismontane woodland, lower coniferous forest, chaparral, and valley and foothill grassland. Several species are also commonly associated with wetlands and vernal pool habitat types. Attachment B found in Appendix 5.4-1 provides additional details on each species and its habitat requirements.

- Shasta maidenhair fern (*Adiantum shastense*)
- Shasta ageratina (*Ageratina shastensis*)
- Henderson's bent grass (*Agrostis hendersonii*)
- Sanborn's onion (*Allium sanbornii* var. *sanbornii*)
- Slender silver moss (*Anomobryum julaceum*)
- Shasta County arnica (*Arnica venosa*)
- Depauperate milk-vetch (*Astragalus pauperculus*)
- Big-scale balsamroot (*Balsamorhiza macrolepis*)
- Watershield (*Brasenia schreberi*)
- Sulphur Creek brodiaea (*Brodiaea matsonii*)
- Thread-leaved beakseed (*Bulbostylis capillaris*)
- Northern clarkia (*Clarkia borealis* ssp. *borealis*)
- Silky cryptantha (*Cryptantha crinita*)
- Tripod buckwheat (*Eriogonum tripodum*)
- Shield-bracted monkeyflower (*Erythranthe glaucescens*)
- Shasta limestone monkeyflower (*Erythranthe taylorii*)
- Shasta fawn lily (*Erythronium shastense*)
- Boggs Lake hedge-hyssop (*Gratiola heterosepala*)
- Red Bluff dwarf rush (*Juncus leiospermus* var. *leiospermus*)
- Dubious pea (*Lathyrus sulphureus* var. *argillaceus*)
- Legenere (*Legenere limosa*)
- Broad-lobed leptosiphon (*Leptosiphon latisectus*)
- Bellinger's meadowfoam (*Limnanthes floccosa* ssp. *bellingeriana*)
- Woolly meadowfoam (*Limnanthes floccosa* ssp. *floccosa*)
- Baker's navarretia (*Navarretia leucocephala* ssp. *bakeri*)
- Shasta snow wreath (*Neviusia cliftonii*)
- Slender Orcutt grass (*Orcuttia tenuis*)
- Ahart's paronychia (*Paronychia ahartii*)
- Nuttall's ribbon-leaved pondweed (*Potamogeton epihydrus*)
- Sanford's arrowhead (*Sagittaria sanfordii*)
- Redding checkerbloom (*Sidalcea celata*)
- Maverick clover (*Trifolium piorkowskii*)
- Shasta huckleberry (*Vaccinium shastense* ssp. *shastense*)
- Oval-leaved viburnum (*Viburnum ellipticum*)
- Brazilian watermeal (*Wolffia brasiliensis*)



Source: ECORP, 2022.

0 2
Scale (Miles)

Figure 5.4-2
California Aquatic Resources Inventory

This page intentionally left blank.

Invertebrates

A total of six special-status invertebrate species have documented occurrences or have potential to occur within the SOI as presented below. Of the invertebrate species listed, the fairy shrimp, linderiella, and tadpole shrimp species are restricted to vernal pools and wetlands. Valley elderberry longhorn beetles are restricted to their host plant, species of the genus Sambucus. Monarch butterflies are not restricted to any particular habitat, but the caterpillars feed on milkweed (*Asclepias* sp.) while adults typically roost in Monterey Pine, Monterey Cypress, and Eucalyptus species. Attachment B found in Appendix 5.4-1 provides additional details on each species.

- Conservancy fairy shrimp (*Branchinecta conservatio*)
- Vernal pool fairy shrimp (*Branchinecta lynchi*)
- California linderiella (*Linderiella occidentalis*)
- Vernal pool tadpole shrimp (*Lepidurus packardi*)
- Valley elderberry longhorn beetle (*Desmocerus californicus* ssp. *dimorphus*)
- Monarch butterfly (*Danaus plexippus*)

Fish

A total of 14 special-status fish species have documented occurrences or have the potential to occur within the SOI as presented below. The majority of these fish are anadromous and require, clean, unrestricted flows to complete their life cycle. The mainstem of the Sacramento River provides habitat for many of these species, but floodplains and tributaries to the Sacramento River within the SOI may also provide habitat for special-status fish species. Attachment A found in Appendix 5.4-1 provides additional details on each species.

- Pacific Lamprey (*Entosphenus tridentatus*)
- River Lamprey (*Lampetra ayresi*)
- Western brook lamprey (*Lampetra richardsoni*)
- Green sturgeon (Southern distinct population segment [DPS]) (*Acipenser medirostris*)
- White sturgeon (*Acipenser transmontanus*)
- Steelhead (CA Central Valley DPS) (*Oncorhynchus mykiss irideus*)
- Chinook salmon (Central Valley spring-run evolutionary significant unit [ESU]) (*Oncorhynchus tshawytscha*)
- Chinook Salmon (Central Valley fall/late-fall-run ESU) (*Oncorhynchus tshawytscha*)
- Chinook salmon (Sacramento River winter-run ESU) (*Oncorhynchus tshawytscha*)
- Central California Roach (*Hesperoleucus symmetricus* ssp. *symmetricus*)
- Sacramento Hitch (*Lavinia exilicauda* ssp. *exilicauda*)
- Hardhead (*Mylopharodon conocephalus*)
- Sacramento splittail (*Pogonichthys macrolepidotus*)
- Riffle Sculpin (*Cottus gulosus*)

Amphibians

A total of three special-status amphibian species have documented occurrences or have the potential to occur within the SOI as presented below. Habitats within the SOI that could support special status amphibians include limestone outcrops within mixed-conifer and hardwood forests, wetlands, vernal pools, grasslands, and riverine habitats. Attachment B found in Appendix 5.4-1 provides additional details on each species.

- Shasta Salamander Complex (*Hydromantes* sp.*)*
- Western spadefoot (*Spea hammondii*)
- Foothill yellow-legged frog (Northwest/North Coast Clade) (*Rana boylii*)

Reptiles

A total of one special-status reptile species, the western pond turtle (*Actinemys marmorata*), was identified as having the potential to occur in the SOI or vicinity. Slow moving portions of the Sacramento River with ample vegetation and basking sites provide habitat for this species. Additionally, lacustrine habitats such as ponds, wetlands, irrigation ditches, and detention basins may provide suitable habitat. Attachment B found in Appendix 5.4-1 provides additional details on this species.

Birds

A total of 15 special-status bird species have documented occurrences or have the potential to occur within the SOIas presented below. Habitats likely to support special-status birds include riverine habitats along the Sacramento River both with and without emergent vegetation, riparian, oak woodland, chaparral, and urban habitats. Attachment B found in Appendix 5.4-1 provides additional details on each species.

- Clark's grebe (*Aechmophorus clarkii*)
- Great egret (*Ardea alba*)
- Osprey (*Pandion haliaetus*)
- Golden eagle (*Aquila chrysaetos*)
- Bald eagle (*Haliaeetus leucocephalus*)
- Long-eared owl (*Asio otus*)
- Nuttall's woodpecker (*Dryobates nuttallii*)
- Olive-sided flycatcher (*Contopus cooperi*)
- Yellow-billed magpie (*Pica nuttallii*)
- Oak titmouse (*Baeolophus inornatus*)
- Bank swallow (*Riparia riparia*)
- Wrentit (*Chamaea fasciata*)
- California thrasher (*Toxostoma redivivum*)
- Lawrence's goldfinch (*Spinus lawrencei*)
- Tricolored blackbird (*Agelaius tricolor*)

Other Protected Birds

In addition to the above-listed special-status birds, all native or naturally occurring birds and their occupied nests/eggs are protected under the California Fish and Game Code and the MBTA. The SOI supports potential nesting habitat for a variety of common birds protected under these regulations.

Mammals

A total of 10 special-status mammal species have documented occurrences or have the potential to occur within the SOI as presented below. Many of the special-status bat species can be found in valley riparian forest, oak woodland, or other habitats with large trees for roosting. Habitats with rocky outcrops and urban habitats may also support special-status bat species. Higher elevation habitats such as montane hardwood may support porcupine and fisher. Attachment B found in Appendix 5.4-1 provides additional details on each species.

- Pallid bat (Antrozous *pallidus*)
- Townsend's big-eared bat (*Corynorhinus townsendii*)
- North American Porcupine (*Erethizon dorsatum*)
- Spotted bat (*Euderma maculatum*)
- Silver-haired bat (*Lasionycteris noctivagans*)
- Western red bat (*Lasiurus blossevillii*)
- Hoary bat (*Lasiurus cinerus*)
- Long-eared myotis (*Myotis evotis*)
- Yuma myotis (*Myotis yumanensis*)
- Fisher (Northern California/Southern Oregon DPS) (*Pekania pennanti*)

Critical Habitat and Essential Fish Habitat

There is Critical Habitat mapped within the SOI for slender Orcutt grass, vernal pool fairy shrimp, and vernal pool tadpole shrimp (USFWS 2022). As shown in Figure 5.4-3, *Sensitive Natural Communities,* the SOI also includes Critical Habitat for green sturgeon, Sacramento River winter-run ESU Chinook salmon, Central Valley spring-run ESU Chinook salmon, and California Central Valley DPS steelhead; and Essential Fish Habitat for Chinook salmon (NOAA 2022b; NOAA 2022c). Critical habitat components for each species are listed below.

- Slender Orcutt Grass, Vernal Pool Fairy Shrimp, and Vernal Pool Tadpole Shrimp – vernal pools, seasonal wetlands, and swales
- Green Sturgeon – Sacramento River
- Chinook Salmon (Sacramento River winter-run ESU) – Sacramento River
- Chinook Salmon (Central Valley spring-run ESU) – Churn Creek, Clear Creek, Olney Creek, Sacramento River

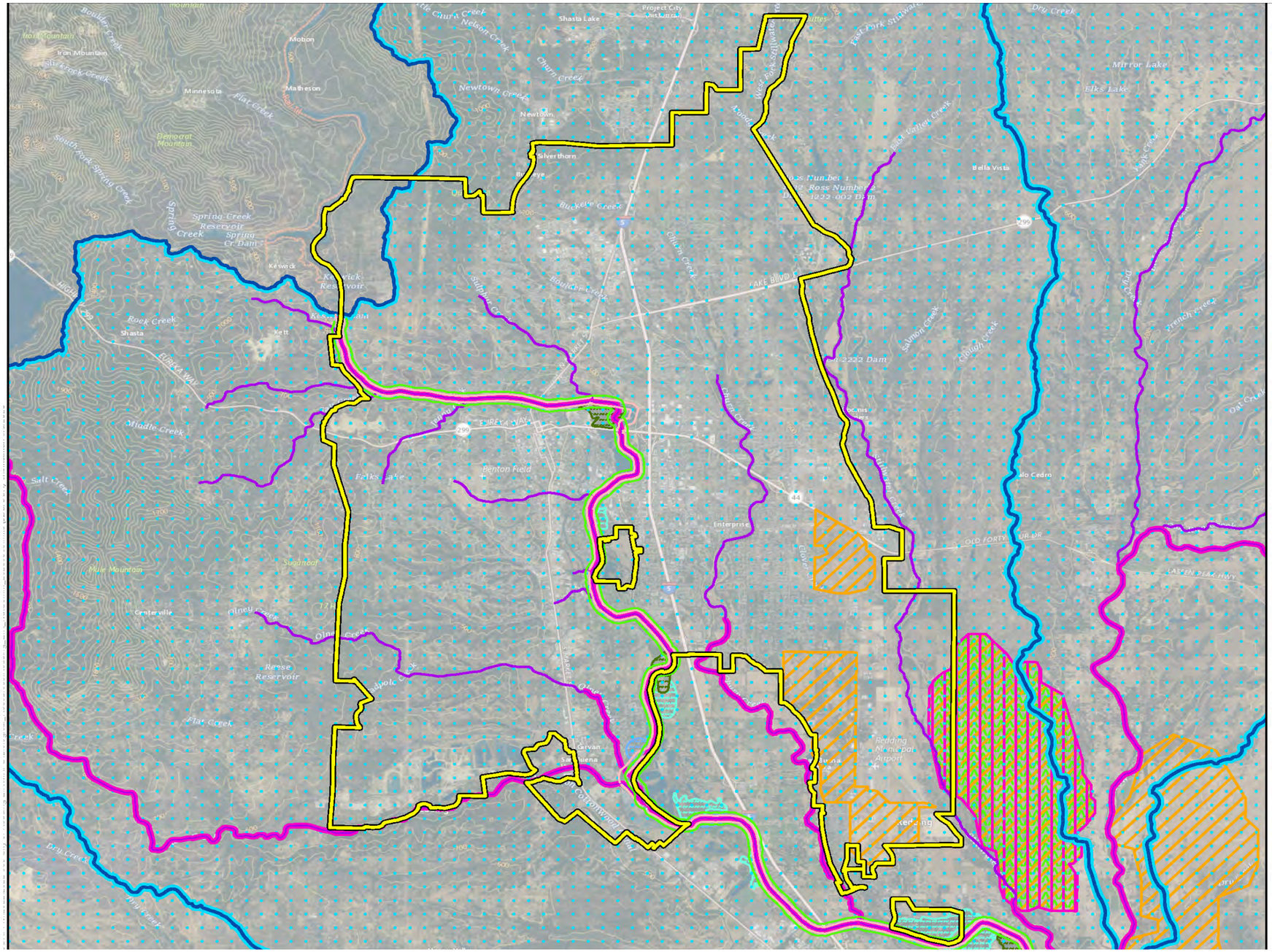
- Steelhead (California Central Valley DPS) – Calaboose Creek, Canyon Creek, Churn Creek, Clear Creek, Jenny Creek, Middle Creek, Olney Creek, Rock Creek, Salt Creek, Stillwater Creek, Sulphur Creek, Oregon Gulch

Sensitive Natural Communities and Wildlife Corridors

Three sensitive natural communities were identified during the literature review: Great Valley Cottonwood Riparian Forest, Great Valley Oak Riparian Forest, and Great Valley Willow Scrub. These communities are restricted to areas immediately adjacent to the Sacramento River. Figure 5.4-3, *Sensitive Natural Communities,* depicts these sensitive natural communities.

A review of aerial imagery reveals that the three sensitive natural communities found in the SOI are connected by narrow strips of habitat on the banks of the Sacramento River. Large portions of the SOI are urban, which effectively fragments the riparian habitat corridor from upland habitats in the surrounding area. Preservation of the remaining riparian areas along the Sacramento River corridor and tis tributary streams will help preserve these sensitive natural communities and maintain connectivity with natural habitat areas outside the SOI.

The Sacramento River and associated riparian corridor represents a significant migratory fish and wildlife corridor through the SOI . Based on CDFW habitat connectivity mapping, the Sacramento River, Churn Creek, and Stillwater Creek are all identified as riparian corridors providing north-south habitat connectivity through the SOI. Undeveloped open space areas surrounding the City provide terrestrial connectivity.



Source: ECORP, 2023.

0 2
Scale (Miles)

Figure 5.4-3
Sensitive Natural Communities

This page intentionally left blank.

5.4.2 THRESHOLDS OF SIGNIFICANCE

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

BIO-1 Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

BIO-2 Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

BIO-3 Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

BIO-4 Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.

BIO-5 Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

BIO-6 Conflict with the provisions of an adopted habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

BIO-7 In combination with past, present, and reasonably foreseeable projects, result in significant cumulative impacts with respect to biological resources.

5.4.3 PROPOSED GENERAL PLAN POLICIES

The following relevant policies of the Redding General Plan Update may reduce the potential impacts on biological resources as a result of implementation of the proposed project.

Natural Resources Element

- Policy NR4A: Prioritize avoidance/minimization of development-related disturbances of sensitive habitats and "special status species" by encouraging innovative site design and planning. Ensure implementation of statutory protection for these species and require appropriate mitigation if disturbed.

- Policy NR4B: Work to preserve and enhance the fisheries of the Sacramento River and those tributary streams and stream segments depicted in Figure 1 and/or other streams or water bodies identified by appropriate regulatory agencies.
- Policy NR4C: Maintain and update data and information regarding areas of significant biological value within the Planning Area to:
    - Provide critical information to the community.
    - Facilitate resource conservation.
    - Facilitate appropriate management of development activities.
- Policy NR4D: Provide adequate buffering of sensitive habitats based on the type of habitat, its size, value and requirements of regulatory agencies. Work with other agencies and organizations as appropriate to establish habitat mitigation banks, habitat conservation plans, conservation easements, and other mechanisms that serve to protect sensitive habitats and species.
- Policy NR4E: Encourage education, community volunteerism and stewardship in the protection and enhancement of local biological resources.
- Policy NR4F: Prioritize retaining city-owned properties that contain environmentally sensitive areas.
- Policy NR4G: Encourage landowners to work with local agencies to establish conservation easements to protect and preserve sensitive resources.
- Policy NR4H: Encourage landowners to undertake invasive species management as appropriate; prioritize continuation of the City's invasive species management efforts particularly along the City's river and stream corridors.
- Policy NR4I: Periodically review the City's landscaping requirements and recommendations to remove plant species that are known or suspected to be invasive within the Planning Area's varied habitat types.
- Policy NR5A: Continue to require new development to provide at least the minimum river and creek-corridor development setbacks (buffer areas) in accordance with Figure 1 and the Redding Municipal Code (RMC). These setbacks may be modified based on project/resource-specific circumstances and appropriate mitigation. Consider requiring dedication of these areas to the City for open space and public uses and/or establish a permanent conservation easement granted to the City or other appropriate organizations as a condition of development approval.
- Policy NR5B: In addition to the protection of the stream corridors depicted in Figure 1, work with project developers to also protect those secondary stream tributaries depicted in Figure 4, vernal pools, riparian habitats, and wetlands in their natural state to the extent feasible. Where appropriate, undertake restoration and provide development buffers from these resources. The mitigation of all adverse impacts on wetland resources are required in compliance with State and Federal regulations protecting such resources, and if applicable, threatened or endangered species.

- Policy NR5C: Encourage the acquisition, preservation, restoration, and enhancement of native vegetation with a focus on wetlands and riparian habitat that will improve the biological value and integrity of the City's natural resources. Encourage native landscape in unvegetated, manmade areas, such as along streets and in abandoned lots.
- Policy NR5D: Uses allowed within riparian corridors should:
    - Minimize the creation of erosion, sedimentation, and increased runoff.
    - Emphasize retention and enhancement of natural riparian vegetation.
    - Provide for unimpaired passage of fish and wildlife.
    - Avoid activities or development of new features that result in disturbance or dispersal of wildlife.
    - Avoid channelization to the extent feasible except as may be necessary to preserve public safety.
    - Avoid substantial interference with surface and subsurface flows.
    - Incorporate natural vegetation buffers.
- Policy NR6A: Strive to preserve and protect existing native oaks, especially valley oaks that are often associated with riparian habitats, in the design and review of development projects. The preservation of stands of trees within developments is generally preferred over preservation of individual trees, with the exception of special-status species, heritage trees, and other trees as may be identified in the City's Municipal Code.
- Policy NR6B: Consider identifying appropriate "areas" to be used for the planting of native trees when desirable to offset development impacts to woodland resources. This General Plan explicitly recognizes that there are tradeoffs between the goals and policies that promote infill development over outward expansion and resultant impacts to woodland resources within the future urban footprint.
- Policy NR6C: Periodically review and consider amendments to the City's Tree Management Ordinance to assess tree replacement requirements, tree planting requirements, potential fees or other mechanism(s) to facilitate the planting of trees in the City and funding of an urban forestry program.
- Policy NR6D: Strive to protect and manage the urban forest to reduce energy demand, increase carbon sequestration, and reduce urban heat gain.
- Policy NR6E: Consider undertaking measures to maintain and expand the urban forest by:
    - Maintaining existing City trees through regular, scheduled service.
    - Planting new trees to replace those that require removal and enhance the street tree canopy, where needed.
    - Requiring street and parking lot tree planting in new development.

- Working with commercial parking lot owners to improve the shade canopy.
- Implementing the Zoning Code's tree protection regulations.
- Using volunteer groups and property owners to plant new trees, care for newly planted trees, maintain young trees, and provide information and instructions regarding such care and maintenance.
- Exploring funding opportunities for the urban forest program.
- Incorporate existing trees into development projects where appropriate while utilizing effective construction practices to minimize to avoid impacts to those trees.
- Periodically reviewing the landscape requirements of the RMC, including but not limited to the off-street parking and landscape standards ordinances as well as the species and other information contained in the City's "Street Tree List."
- Consider undertaking the review, update, and implementation of the Heritage Tree provisions of RMC Section 13.40.020, particularly as part of an urban forestry program should be established.

- Policy NR7A: Strive to maintain, preserve, and enhance the habitat linkages/wildlife corridors and sensitive habitats that are created by the open-space ("Greenway") network established by this General Plan. Require development in areas defined as "Greenway" to consider corridor impacts and, where necessary, provide alternate usable links between habitat types or areas and/or provide alternate development plans that avoid the open-space network and sensitive habitats.
- Policy NR7B: Maintain and preserve other natural habitat linkages and wildlife corridors in the City where feasible. Discourage development impacts to these linkages and corridors and fully mitigate adverse impacts.
- Policy NR7C: Explore options to prevent unlawful uses and damage to public and private open space areas and ensure habitat values are maintained and/ or enhanced.
- Policy NR8A: Where appropriate, require as a condition of development approval, public dedication of flood-prone lands adjacent to the Sacramento River and those tributary streams identified on Figure 1. Exceptions to this policy may be made based on:
  - the provisions of any adopted specific plan, or
  - approval by the City in consideration of special circumstances unique to a flood-prone area where the extent of flooding is largely dictated by inadequate drainage improvements, or
  - when an entire parcel is constrained by floodplain, and/or where the flooding occurs within a developed area.
- Policy NR8B: Strive to preserve land publicly dedicated as open space. Development in these areas, except as required to provide public facilities, such as roads, utilities, and trails, should be restricted

to passive, low impact uses that minimize removal of existing vegetation and maintain or increase the existing habitat value, while providing adequate protection from wildland fires. Coordinate with other entities as appropriate to establish conservation easements that will ensure long term protection and necessary maintenance.

- Policy NR8C: In those instances where it is determined that public open space dedication is not appropriate, require, as a condition of development approval, that private open-space easements be established for significant areas of undeveloped lands that are flood prone or exceed a slope of 20 percent. Use public dedications and/or trail easements when necessary to connect these areas to existing or proposed public open spaces, streets, parks, and similar features.
- Policy NR8D: Periodically update the Parks, Trails, and Open Space Master Plan and use it to implement various policies of this General Plan that address the:
    - Framework for open-space lands.
    - Role of public and private open-space lands.
    - Preservation of important ecological areas.
    - Acquisition and management of public open space land.

Parks, Trails, and Recreation Element

- Policy R2A: Seek to identify and obtain funding to prepare and implement a Regional River Parkway Plan for areas along the Sacramento River between Shasta Dam and the City of Anderson to address:
    - Resource protection.
    - Habitat assessment and management.
    - Recreational opportunities.
    - Location of existing and proposed facilities.
    - Recommendations for speed limits and use restrictions on the river, where warranted.
    - Acquisition of lands.
    - Management and operations.
    - Restoration activities.
- Policy R2B: Preserve and restore native trees and vegetation along the Sacramento River by incorporating these features into park design, where feasible.
- Policy R2F: Plan, encourage and support projects and efforts to preserve and restore native habitat along the Sacramento River and creek corridors in the Planning Area by preserving native plants and by removing invasive non-native plants. Fund and staff regularly scheduled preventative maintenance as budget allows.

- Policy R2G: On a project-by-project basis, strive to protect, enhance, and restore habitat for special-status plants and animal species.
- Policy R3B: As funding allows, remove invasive non-native plants and promote the use of a variety of native and/or drought resistant plants, particularly oak trees, where appropriate, in park and natural open-space areas.
- Policy R13G: Provide buffer zones to act as staging and access points for wildfire protection activities where appropriate
- Policy R13I: Update the City's Tree Management Ordinance as necessary to reflect current standards and programs to protect, preserve, restore and replant native trees.

5.4.4 IMPACT DISCUSSION

BIO-1:	The proposed project would not have a substantial adverse effect, either directly or through habitat modifications, on species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations by the California Department of Fish and Wildlife or United States Fish and Wildlife Service.

Development allowed by General Plan Update could potentially impact special-status species.

Plants

A search of the database queries (Attachment A in Appendix 5.4-1) identified a total of 35 special-status plant species as occurring in the SOI. Nonnative/ornamental and unvegetated biological communities, barren and or urban areas in the SOI are unlikely to support special-status plants. However, construction activities within foothill grassland, wetland, vernal pool, cismontane woodland, lower coniferous forest, chapparal, and valley communities could potentially result in significant impacts on special-status plants as a large portion of rare plants can be found in these vegetation types. There are three federally and/or State-listed plant species known to occur in the SOI: Boggs Lake ledge-hyssop, Shasta snow wreath, and Slender Orcutt grass. Although the rest of the 35 species listed in Section 5.4.1.2, *Existing Conditions*, are not federally or State listed, losses of these special-status plants would cause potentially significant impacts under CEQA.

Wildlife

A total of 35 special-status wildlife species (six invertebrates, three amphibians, one reptile, 15 birds, and 10 mammals) known to occur or have the potential to occur in the SOI. Of these 35 special-status species, there are five invertebrates (Conservancy fairy shrimp, Vernal pool fairy shrimp, Vernal pool tadpole, Shasta Crayfish, Valley elderberry longhorn beetle) one amphibian (California red-legged frog), and four bird

species (Bald eagle, Northern spotted owl, Bank swallow, Tricolored blackbird) listed or considered federal and/or State-listed wildlife species known to occur in the SOI. Development within or near habitat for special-status wildlife species could result in adverse impacts to these species. Potential impacts related to individual species include the following:

- Vernal Pool. The SOI contains vernal pools which help support special status species, including vernal pool fairy shrimp (threatened), vernal pool tadpole shrimp (endangered), and slender Orcutt Grass (threatened) and there are known occurrences of each of these species in the SOI(Attachment A, Appendix 5.4-1). Seasonal wetlands and vernal pools may provide habitat for some or all of these species. As shown in Figure 5.4-3, the USFWS has designated areas of critical habitat for these three species, along the Sacramento River and the southeastern portion of the SOI. Construction within or near these habitats could result in mortality of the listed special status species or destruction of their habitat, which would be considered significant impacts.
- Valley Elderberry Longhorn Beetle. Suitable habitat for valley elderberry longhorn beetle, a federally threatened species, is present in the SOI. Suitable habitat consists of elderberry shrubs with stems 1 inch or greater at ground level. There are CNDDB records for this species within the SOI (Attachment B, Appendix 5.4-1). Significant impacts on valley elderberry longhorn beetle may result from the direct removal of shrubs or soil disturbance within the USFWS's recommended 100-foot-wide no-disturbance buffer during construction-related activities, including grading and clearing (USFWS 1999).
- Special Status Birds. The SOI is within the breeding range for numerous special-status bird species, including four federal or state-listed species(Bald eagle, Northern spotted owl, Bank swallow, Tricolored blackbird) . In addition, non-special status migratory birds could nest within the SOI. All native or naturally occurring birds and their nests are protected under both California Fish and Game Code Section 3503 (active bird nests) and the MBTA. Construction activities in or near habitat for special-status birds could result in nest disturbance or destruction, which could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. Construction activities could also result in the loss of foraging habitat for several bird species. Loss of special-status and non-special status birds, bird eggs, or nests, or any activities resulting in nest abandonment, could constitute a significant impact.
- Special Status Bats. The SOI contains potential roosting and foraging habitat for special-status bats, including the western red bat, Townsend's big-eared bat, pallid bat, spotted bat, and silver-haired bat, as well as for several non-special-status bats. Potential impacts to bats could result from construction-related disturbance of bat roosts, destruction of active roosts, or the loss of individuals. These impacts would be considered significant.

Fish

Development allowed by General Plan Update also has the potential to cause adverse impacts to 14 special-status fish species.

The Sacramento River and associated floodplains and tributaries in the city provide spawning, rearing and migratory habitat for special-status fish species, such as fall/late fall, winter and spring-run Chinook salmon,

Central Valley steelhead, green sturgeon, and river lamprey. As shown in Figure 5.4-3, critical habitat for Chinook salmon and steelhead is designated in the Sacramento River and tributaries to the River that occur in the city, such as Churn Creek and Clear Creek. Figure 5.4-3 also shows the critical habitat for green sturgeon, which is the Sacramento River.

Impacts on fish from construction-related disturbances include increased sedimentation and turbidity, release of contaminants into surrounding waterbodies, noise disturbance, and change in fish habitat. A change in fish habitat could result from the removal of terrestrial vegetation from streambanks, removal of riparian trees and aquatic vegetation, or rip-rapping[2] banks for erosion control. Increases in sedimentation and turbidity have been shown to affect fish physiology, behavior, and habitat. Stress responses are generally higher with increasing turbidity and decreasing particle size. Migrating adult salmonids have been reported to avoid high waterways with silt loads or cease migration when such loads are unavoidable (Cordon and Kelley 1961).

Construction activities may also involve the storage, use or discharge of toxic and other harmful substances near water bodies or in areas that drain to these water bodies. Heavy construction equipment often use petroleum products, such as fuels, lubricants, hydraulic fluids and coolants, all of which may be toxic to fish and other aquatic organisms. An accidental spill or inadvertent discharge of these materials could affect the water quality of the river or water body and thereby affect fish or fish habitat.

Impact Significance Determination

Furthermore, the General Plan Update contains several policies in the Natural Resources Element that would preserve and enhance areas that may provide habitat for special-status species, including the following:

- Policy NR4A: Prioritize avoidance/minimization of development-related disturbances of sensitive habitats and “special status species” by encouraging innovative site design and planning. Ensure implementation of statutory protection for these species and require appropriate mitigation if disturbed.
- Policy NR4B: Work to preserve and enhance the fisheries of the Sacramento River and those tributary streams and stream segments depicted in Figure 1 and/or other streams or water bodies identified by appropriate regulatory agencies.
- Policy NR4C: Maintain and update data and information as necessary regarding areas of significant biological value within the Planning Area to:
    - Provide critical information to the community.

[2] Rip-rap banks are composed of rock or other materials that resist erosion by dissipating the energy of flowing water or waves.

- Facilitate resource conservation.
- Facilitate appropriate management of development activities.

- Policy NR4D: Provide adequate buffering of sensitive habitats based on the type of habitat, its size and value and requirements of regulatory agencies. Work with other agencies and organizations as appropriate to establish habitat mitigation banks, habitat conservation plans, conservation easements, and other mechanisms that serve to protect sensitive habitats and species.

The goals and policies in the Natural Resources Element of the proposed General Plan Update; and compliance with the policies and regulations under the ESA, MBTA, CESA, California Fish and Game Code, CWA, and CNPPA would reduce potential impacts to special-status species associated with new development allowed under General Plan to a less than significant level.

Level of Significance Before Mitigation: BIO-1 would be less than significant.

Mitigation Measures

No mitigation measures are required.

BIO-2:	The proposed project would not have a substantial adverse effect on riparian habitat and other sensitive natural communities identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or United States Fish and Wildlife Service.

The SOI contains sensitive natural communities, including Great Valley Cottonwood, Riparian Forest, Great Valley Oak Riparian Forest, and Great Valley Willow Scrub. Riparian vegetation is an important component for special-status fish species habitat and provides shaded riverine aquatic habitat. Shaded riverine aquatic cover directly influences the quality of fish habitat, affecting cover, food, in-stream habitat complexity, streambank stability, and temperature regulation. Large woody debris usually originates from riparian trees and provides habitat complexity in aquatic environments, an essential component of fish habitat. As shown in Figure 5.4-3, sensitive natural communities are restricted to areas immediately adjacent to the Sacramento River and its tributaries.

Construction projects would also have the potential to affect sensitive natural communities, either directly or indirectly, by spreading or introducing invasive plant species to currently uninfected areas. Invasive species spread aggressively and crowd out native species, potentially altering the species composition of natural communities. A predominance of invasive species reduces the overall habitat quality for native plants and wildlife.

However, the Natural Resources Element of General Plan Update includes several goals policies that would mitigate potential impacts on sensitive natural communities. Goal NR5 directs the City to protect and preserve creek corridors, riparian areas, vernal pools, and wetlands. The policies associated with Goal NR5

would help to implement this goal and protect riparian habitat. For example, Policy NR5A requires new development to provide minimum river and creek-corridor development setbacks from the Sacramento River and identified main and secondary stems of its tributaries, and Policy NR5B addresses working with project developers to protect vernal pools, riparian habitats, and wetlands and to mitigate all adverse impacts.

The policies under Goal NR6 target the protection of the Oak Woodlands natural community. For example, Policy NR6A directs the City to strive to preserve and protect existing native oaks, especially valley oaks that are often associated with riparian habitats in the design and review of development projects, and Policy NR6B directs the City to consider identifying appropriate "areas" to be used for the planting of native trees when desirable to offset development impacts to woodland resources.

In addition, the Parks, Trails, and Recreation Element includes policies which aim to avoid introduction or spread of invasive plant species. For example, Policy R2F seeks to plan, encourage, and support efforts to preserve and restore native habitat along the Sacramento River and creek corridors in the Planning Area by preserving native plants and by removing invasive non-native plants, and Policy R3B aims to remove invasive non-native plants and promote the use of native plants in park and natural open-space areas.

Additionally, disturbance or alteration of streams, lakes, or non-federally protected (non-jurisdictional) wetlands would require a permit, which would include conditions to protect these sensitive natural communities. A Section 1602 streambed alteration agreement would be needed from the CDFW prior to initiation of project construction activities within the city that would divert, obstruct, or change the natural flow of a river, stream or lake, or that would use material from a streambed. Non-jurisdictional wetlands include wetland features that are not hydrologically connected to navigable waters in rivers and are not under USACE jurisdiction. These wetlands would still be considered waters of the State and would be regulated according to waste discharge requirements that would be issued by the RWQCB.

Implementation of the General Plan Update goals and policies, with conditions associated with streambed alteration agreements and waste discharge requirements, would reduce potential impacts on riparian corridors and other sensitive natural communities to a less than significant level.

Level of Significance Before Mitigation: BIO-2 would be less than significant.

Mitigation Measures

No mitigation measures are required.

BIO-3:	The proposed project would not have a substantial adverse effect on state or federally protected wetlands (marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

As shown in Figure 5.4-2, the SOI contains waters of the United States, which include jurisdictional wetlands and other waters. Construction activities could potentially have direct and indirect impacts on waters of the United States. The Natural Resources Element of the General Plan Update contains policies that address potential impacts to wetlands: Policy NR5A, which directs the City to work to preserve the Sacramento River and streams or stream segments identified in Figure NR-1; Policy NR5B which calls for the preservation of watercourses, vernal pools, riparian habitat, and wetlands in their natural state to the extent feasible; and Policy NR5C which encourages the acquisition, preservation, restoration, and enhancement of native vegetation with a focus on wetlands and riparian habitat that will improve the biological value and integrity of the City's natural resources.

In addition, in accordance with the federal Clean Water Act, a formal delineation of waters of the United States would need to be conducted prior to the initiation of construction activities in the SOI where potentially jurisdictional features are present. The results of the delineation, including a report and map, would then be submitted to the Sacramento District of the USACE for verification. If the USACE determines that no waters of the United States are present, a Clean Water Act Section 404 permit would not be required, although waste discharge requirements from the RWQCB might be required. If the USACE determines that waters of the United States are present, a Section 404 permit from the USACE for placement of fill within waters of the United States and a Section 401 water quality certification from the RWQCB would be required. Placement of fill materials into waters of the United States would require compensation to ensure no net loss of aquatic resources. In addition, a Section 1602 streambed alteration agreement is needed from the CDFW if a project were to divert, obstruct, or change the natural flow of a river, stream, or lake. Non-jurisdictional wetlands are regulated by the RWQCB according to waste discharge requirements.Required compensation for the loss of degraded habitat could be less than that for undisturbed habitat, but compensation ratios would ultimately be determined by the resource agencies and be stated in the permit conditions.

Implementation of General Plan Update goals and policies, conditions associated with Section 404 permits and Section 401 water quality certifications, and project specificmitigation measures for the protection of wetlands during construction activities would reduce potential impacts on federally protected wetlands to a less than significant level.

Level of Significance Before Mitigation: BIO-3 would be less than significant.

Mitigation Measures

No mitigation measures are required.

BIO-4: The proposed project could interfere with the movement of a 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.

The City of Redding contains essential movement corridors for native resident and migratory fish and wildlife species, and development allowed by General Plan Update could potentially have adverse impacts on migratory species and corridors. The Sacramento River and associated riparian corridors represent significant migratory fish and wildlife corridors through the SOI. The Sacramento River, Churn Creek, and Stillwater Creek are all identified as riparian corridors providing north-south habitat connectivity through the city, and the undeveloped open space areas surrounding the city provide terrestrial connectivity. Development along these areas could occur and could impede movement of native or migratory species.

The Natural Resources Element of the General Plan Update contains policies that address potential impacts to native resident,migratory fish, and wildlife species and corridors, such as Policy NR7A, which directs the City to maintain, where possible, the habitat linkages/wildlife corridors and sensitive habitats that are created by the open-space ("Greenway") network established by the General Plan Update. Policy NR7A also requires development in areas defined as "Greenway" by the General Plan Update to consider corridor impacts and, where necessary, provide alternate usable links between habitat types or areas and/or provide alternate development plans that avoid the open-space network and sensitive habitats. Policy NR7B discourages development impacts to these linkages and corridors and encourages full mitigation associated with unavoidable adverse impacts.

As mentioned, there are 15 special status bird species within the SOI, four (Bald eagle, Northern spotted owl, Bank swallow, Tricolored blackbird) of which are listed and/or considered federally and or state listed. Additionally, non-special status migratory birds could nest within the SOI. Construction activities in or near habitat for special-status birds could result could interference with the movement of a native resident or migratory wildlife species. However as mentioned in California Fish and Game Code Section 3503 (active bird nests) and the MBTA Section, raptors, such as eagles, owls, and other migratory birds and their nests are protected. In addition, Section 3800 states that it is unlawful to take nongame birds, such as those occurring naturally in California that are not resident game birds, migratory game birds, or fully protected birds, except when in accordance with regulations of the California Fish and Game Commission or a mitigation plan approved by CDFW for mining operations. Therefore, there are regulations in place that would ensure the protection of migratory and native bird species.

The proposed General Plan Update goals and policies, in combination with regulations under the ESA, MBTA, CESA, and California Fish and Game Code, would reduce potential impacts to migratory species to a less than significant level.

Level of Significance Before Mitigation: BIO-4 would be less than significant.

Mitigation Measures

No mitigation measures are required.

BIO-5:	The proposed project would not conflict with any local policies or ordinances protecting biological resources nor with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan. [Threshold BIO-5 and BIO-6]

The City of Redding Municipal Code includes Chapter 18.45, Tree Management Ordinance, which promotes the conservation of mature, healthy trees in the design of new development. In addition, Chapter 13.40, Trees and Shrubs, of the City's Municipal Code regulates trees on public areas and plant strips. The General Plan Update includes Policy NR6C which calls for periodic review of the Ordinance to assess current standards and programs to protect, preserve, restore, and replant native trees and to amend the ordinance as may be necessary. As well as Policy NR6E which considers undertaking measures to maintain and expand the urban forest such as reviewing and updating the Heritage Tree provisions of RMC Section 13.40.020, particularly as part of an urban forestry program should be established. Therefore, the General Plan Update would not conflict with any local policies or ordinances protecting biological resources. The SOI is not within a HCPs, NCCPs or other habitat conservation plans (CDFW 2023). No impact would occur.

Level of Significance Before Mitigation: BIO-5 would have no impact.

Mitigation Measures

No mitigation measures are required.

5.4.5 CUMULATIVE IMPACTS

BIO-6:	The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in significant and unavoidable cumulative impacts with respect to biological resources.

The General Plan Update contains extensive goals and policies that mitigate impacts to lands that support sensitive biological resources, including special-status species, sensitive natural communities, federally protected wetlands, and wildlife and fish movement corridors, to a less than significant level and that additionally minimize the effects of development on biological resources in general. Development allowed by General Plan Update could contribute to the ongoing loss of some undeveloped lands that support such sensitive biological resources in Redding. While future development would comply with existing local, state, and federal regulations, including the policies of the General Plan Update, cumulative loss of habitat

and sensitive natural communities in Redding could potentially contribute to a general decline for the region, and could result in the loss or displacement of wildlife that would have to compete for suitable habitats with existing adjacent populations. Since development outside Redding is beyond the City's ability to regulate or control, the cumulative change may rise to a level of significance and is being treated as a significant and unavoidable impact.

Level of Significance Before Mitigation: BIO-6 would be potentially significant.

Mitigation Measures

There are no feasible mitigation measures.

Level of Significance Before Mitigation: BIO-6 would be significant and unavoidable.

5.4.6 REFERENCES

California Department of Fish and Wildlife (CDFW). 2023 (accessed). NCCP Plan Summaries. https://wildlife.ca.gov/Conservation/Planning/NCCP/Plans

California Wetlands Monitoring Workgroup. 2022. EcoAtlas. https://www.EcoAtlas.org.

Cordone, A.J., and D.W. Kelley. 1961. The influences of inorganic sediment on the aquatic life of streams. Cal. Fish and Game 47:189-228.

National Oceanic and Atmospheric Administration (NOAA). 2022a. National Climatic Data Center 2010 Climate Normals for Redding, California. https:/www.ncdc.noaa.gov/cdoweb/datatools/normal. Accessed June 2022.

———. 2022b. NOAA Fisheries Service. National Marine Fisheries Service Endangered Species Act Critical Habitat Geodatabase. National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Service (NMFS [producer] Accessed 16 June 2022.

———. 2022c. Essential Fish Habitat Mapper, Pacific Council. Available online: https://www.habitat.noaa.gov/apps/efhmapper/?page=page_4.

San Francisco Estuary Institute (SFEI). 2017. California Aquatic Resource Inventory (CARI) Version 0.3. 2017. http://www.sfei.org/data/california-aquatic-resource-inventory-cari-version-03-gisdata#sthash.0SjnlwfO.dpbs.

U.S. Fish and Wildlife Service (USFWS). 2022. USFWS Resource Report List. Information for Planning and Conservation. Available https://ecos.fws.gov/ipac. Accessed April 2022.

This page intentionally left blank.

5.5 CULTURAL AND TRIBAL CULTURAL RESOURCES

This chapter describes the regulatory framework and existing conditions in the Plan Area related to cultural resources and tribal cultural resources, and the potential impacts of the project on cultural resources and tribal cultural resources.

The analysis in this section is based in part on the following information:

- *Cultural Resources Inventory Report*, ECORP Consulting, Inc., November 2022. A complete copy of this report is included as Appendix 5.5-1 to this EIR.

5.5.1 ENVIRONMENTAL SETTING

5.5.1.1 REGULATORY FRAMEWORK

Federal Regulations

National Historic Preservation Act

The National Historic Preservation Act of 1966 (NHPA) coordinates public and private efforts to identify, evaluate, and protect the nation's historic and archaeological resources. The act authorized the National Register of Historic Places, which lists districts, sites, buildings, structures, and objects that are significant in American history, architecture, archaeology, engineering, and culture.

Section 106 (Protection of Historic Properties) of the NHPA requires federal agencies to consider the effects of their undertakings on historic properties. Section 106 review ensures that historic properties are considered during federal project planning and implementation. The Advisory Council on Historic Preservation, an independent federal agency, administers the review process with assistance from state historic preservation offices.

Archaeological Resources Protection Act

The Archaeological Resources Protection Act of 1979 regulates the protection of archaeological resources and sites on federal and Indian lands.

Native American Graves Protection and Repatriation Act

NAGPRA is a federal law passed in 1990 that mandates museums and federal agencies to return certain Native American cultural items—such as human remains, funerary objects, sacred objects, or objects of cultural patrimony—to lineal descendants or culturally affiliated Indian tribes.

National Register of Historic Places

The NRHP is the nation's official list of buildings, structures, objects, sites, and districts worthy of preservation because of their significance in American history, architecture, archaeology, engineering, and culture. The NRHP recognizes resources of local, state, and national significance which have been documented and evaluated according to uniform standards and criteria.

Authorized under the NHPA, the NRHP is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect historic and archaeological resources. The NRHP is administered by the National Park Service, which is part of the US Department of the Interior.

To be eligible for listing in the National Register, a resource must meet at least one of the following criteria:

- Is associated with events that have made a significant contribution to the broad patterns of our history;
- Is associated with the lives of persons significant in our past;
- Embodies the distinctive characteristics of a type, period or method of construction, represents the work of a master, possesses high artistic values, or represents a significant and distinguishable entity whose components may lack individual distinction;
- Has yielded, or may be likely to yield, information important in history or prehistory.

To retain historic integrity, a property will always possess several and often most of the aspects of integrity. These are location, design, setting, materials, workmanship, feeling, and association.

State Regulations

California Environmental Quality Act

The California Environmental Quality Act (CEQA) requires projects such as developments to identify impacts to environmental conditions from the Project, and to address impacts that are found to be potentially significant. Section 15064.5 of the state CEQA Guidelines states that projects that may cause a substantial adverse change to historic resources (including archaeological resources) may have a potentially significant impact. These guidelines identify four ways that a site may qualify as a significant historic resource for the purposes of complying with CEQA:

- If the resource is listed in the California Register of Historic Resources or is deemed eligible for listing by the State Historical Resources Commission.

- If the resource is included in a local register of historic resources (as described in Section 5020.1(k) of the state Public Resources Code),[1] or identified as significant in a survey that meets the requirements of Section 5024.1(g) of the state Public Resources Code (unless the weight of evidence shows that the resource is not significant).
- If the lead agency determines that the resource is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California. Such determinations must be supported by substantial evidence.
- If the lead agency determines that the resource may meet the definition of a historical resource as defined in the state Public Resources Code Sections 5020.1(j) or 5024.1.

State CEQA Guidelines also define the responsibilities of a lead agency to determine if a project may have a significant effect on archaeological resources. If a project will demonstrably damage a unique archaeological resource, the guidelines allow a lead agency to require reasonable efforts to preserve the resources in place (the preferred approach) or to otherwise leave them in an undisturbed state. The Public Resources Code identifies mitigation actions to be taken if such resources are not preserved in place.

Additionally, Section 7050.5 of the California Health and Safety Code, Section 5097.98 of the California Public Resources Code, and Section 15064.5(d) of the state CEQA Guidelines outlines the procedures to be used if Native American human remains are unexpectedly found on non-federal land. The guidelines protect the remains from accidental or deliberate destruction or disturbance, and establish procedures to appropriately and sensitively address such a discovery. The guidelines also establish the Native American Heritage Commission (NAHC) to identify the most likely descendent of any remains and to mediate disputes regarding the disposition.

California Register of Historical Resources

The California Register of Historical Resources (CRHR) is intended to identify, evaluate, register, and protect historic and archaeological resources in California, in a manner very similar to NRHP. The register is managed by California's State Historical Resources Commission and includes the following four criteria:

- Be associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States.
- Be associated with the lives of people important to local, California, or American history.
- Embody the distinct characteristics of a type, period, region, or method of construction; or represent the work of a master or possess high artistic value.
- Have yielded, or be potentially likely to yield, information important to the prehistory or history of the local area, California, or the nation.

[1] According to the Public Resources Code, local registers are "a list of properties officially designated or recognized as historically significant by a local government pursuant to a local ordinance or resolution."

Sites listed on the CRHR must also retain their integrity (the retention of location, design, setting, materials, workmanship, feeling, and association).

California Native American Heritage Commission

The NAHC is the primary state agency responsible for identifying and cataloging Native American cultural resources. It works to prevent irreparable damage to designated sacred sites and interference with expressions of Native American religion in California. The NAHC is authorized to identify the most likely descendant of Native American human remains found outside of a dedicated cemetery, who can then make recommendations on the treatment and disposition of the remains. The NAHC is also responsible for mediating disputes that may arise during the disposition of any remains.

California Native American Historical, Cultural and Sacred Sites Act

The California Native American Historical, Cultural and Sacred Sites Act applies to both State and private lands. This Act requires that upon discovery of human remains, construction or excavation activity cease and the county coroner be notified. If the remains are of Native American descent, the coroner must notify the NAHC. The NAHC then notifies the persons most likely to be descended from the Native American remains. This Act stipulates the procedures that descendants may follow for treating or disposing of the remains and associated grave goods.

California Government Code

California Government Code Section 65352.3-5, formerly known as Senate Bill (SB) 18, states that prior to the adoption or amendment of a city or county's general plan, or specific plans, the city or county shall consult with California Native American tribes that are on the contact list maintained by the NAHC. The intent of this legislation is to preserve or mitigate impacts on places, features and objects, as defined in PRC 5097.9 and PRC 5097.993, that are located within the city or county's jurisdiction. The bill also states that the city or county shall protect the confidentiality of information concerning the specific identity, location, character and use of those places, features and objects identified by Native American consultation. Government Code 65362.3-5 applies to all general and specific plans and amendments proposed after March 1, 2005.

California Senate Bill 18

Existing law provides limited protection for Native American precontact, archaeological, cultural, spiritual, and ceremonial places. These places may include sanctified cemeteries, religious sites, ceremonial sites, shrines, burial grounds, pre-contact ruins, archaeological or historic sites, Native American rock art inscriptions, or features of Native American historic, cultural, and sacred sites.

SB 18 (California Government Code Sections 65352.3 et seq.) was signed into law in September 2004 and went into effect on March 1, 2005. It places new requirements upon local governments for developments within or near "traditional tribal cultural places" (TTCP). Per SB 18, the law requires local jurisdictions to provide opportunities for involvement of California Native American tribes in the land planning process for the purpose of preserving traditional tribal cultural places. The Final Tribal Guidelines recommend that the NAHC provide written information as soon as possible but no later than 30 days after receiving a request to inform the lead agency if the proposed project is determined to be in proximity to a TTCP, and another 90 days for tribes to respond to a local government if they want to consult to determine whether the project would have an adverse impact on the TTCP. There is no statutory limit on the consultation duration. Forty-five days before the action is publicly considered by the local government council, the local government refers action to agencies, following the CEQA public review time frame. The CEQA public distribution list may include tribes listed by the NAHC who have requested consultation, or it may not. If the NAHC, the tribe, and interested parties agree upon the mitigation measures necessary for the proposed project, they would be included in the project's EIR. If both the City of Rancho Cucamonga and the tribe agree the adequate mitigation or preservation measures cannot be taken, neither party is obligated to take action.

SB 18 is triggered before the adoption, revision, amendment, or update of a city's or county's general plan. Although SB 18 does not specifically mention consultation or notice requirements for adoption of amendment of specific plans, the Final Tribal Guidelines advises that SB 18 requirements extend to specific plans as well, because state planning law requires local governments to use the same process for amendment or adoption of specific plans as general plans (defined in Government Code Section 65453). In addition, SB 18 provides a new definition of TTCP requiring a traditional association of the site with Native American traditional beliefs, cultural practices, or ceremonies, or the site must be shown to actually have been used for activities related to traditional beliefs, cultural practices, or ceremonies (previously, the site was defined to require only an association with traditional beliefs, practices, lifeways, and ceremonial activities). SB 18 law also amended Civil Code Section 815.3 and adds California Native American tribes to the list of entities that can acquire and hold conservation easements for the purpose of protecting their cultural places.

Assembly Bill 52

Effective July 1, 2015, Assembly Bill 52 (AB 52) amended CEQA to require that: (1) a lead agency provide notice to California Native American tribes that requested notice of projects proposed by the lead agency; and (2) the lead agency consult with any tribe that responded to the project notice within 30 days of receipt with a request for consultation. Topics that may be addressed during consultation include Tribal Cultural Resources, the potential significance of project impacts, the type of environmental document that should be prepared, and possible mitigation measures and project alternatives.

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 the Statutes of 2004." This includes both federally recognized and unrecognized tribes.

Section 21074(a) of the PRC defines Tribal Cultural Resources for the purpose of CEQA as:

> Sites, features, places, cultural landscapes (geographically defined in terms of the size and scope), sacred places, and objects with cultural value to a California Native American tribe that are any of the following:
>
> a. Included or determined to be eligible for inclusion in the CRHR; and/or
>
> b. Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1; and/or
>
> c. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

Because criteria a and b also meet the definition of a Historical Resource under CEQA, a Tribal Cultural Resource may also require additional consideration as a Historical Resource. Tribal Cultural Resources may or may not exhibit archaeological, cultural, or physical indicators.

Recognizing that California tribes are experts in their tribal cultural resources and heritage, AB 52 requires that CEQA lead agencies provide tribes that request notification an opportunity to consult at the commencement of the CEQA process to identify Tribal Cultural Resources. Furthermore, because a significant effect on a Tribal Cultural Resource is considered a significant impact on the environment under CEQA, consultation is used to develop appropriate avoidance, impact minimization, and mitigation measures.

Assembly Bill 168

AB 168 was signed in 2020 and extends the responsibility of a development proponent to consult with Native American tribes to streamlined ministerial approvals for affordable multifamily housing developments under SB 35. A development with streamlined ministerial approval under SB 35 is not subject to CEQA, allowing for such developments to occur without going through a CEQA review or screening process to determine if they would affect Tribal Cultural Resources.

AB 168 requires a development proponent to submit notice of its intent to apply for streamlined approval to the local government prior to the actual application submittal. The local government is then required to provide formal notice to each California Native American tribe that is culturally affiliated with the geographic area of the proposed development and to engage in a “scoping consultation” regarding the potential effects the proposed development could have on a potential Tribal Cultural Resource (California Code Section 65913.4(b)).

The scoping consultation must commence within 30 days after the proponent submits a notice of intent to apply for ministerial approval and must conclude before the proponent can submit the application.

This bill deems a project ineligible for the streamlined, ministerial approval process and requires it be subject to CEQA if:

> (A) The site of the proposed development is a Tribal Cultural Resource that is on a national, State, tribal, or local historic register list;
>
> (B) The local government and the California Native American tribe do not agree that no potential Tribal Cultural Resource would be affected by the proposed development; or
>
> (C) The local government and California Native American tribe find that a potential Tribal Cultural Resource could be affected by the proposed development and the parties do not document an enforceable agreement regarding the methods, measures, and conditions for treatment of those tribal cultural resources, as provided.

California Public Records Act

Sections 6253 and 6254.10 of the California Government Code (CGC) authorize state agencies to exclude archaeological site information from public disclosure under the California Public Records Act (CPRA) (CGC Sections 6250 et. seq.). In addition, the CPRA and California's open meeting law (The Brown Act, CGC Sections 56950 et. seq.) protect the confidentiality of Native American cultural place information. The CPRA (as amended, 2005) contains two exemptions that aid in the protection of records relating to Native American cultural places by permitting any state or local agency to deny a CRPA request and withhold from public disclosure:

> *…records of Native American graves, cemeteries, and sacred places and records of Native American places, features, and objects described in Section 5097.9 and 5097.993 of the Public Resources Code maintained by, or in the possession of, the Native American Heritage Commission, another state agency, or local agency (CGC Section 6254[r])*
>
> *…records that relate to archaeological site information and reports maintained by, or in the possession of, the Department of Parks and Recreation, the State Historical Resources Commission, the State Lands Commission, another state agency, or local agency, including the records that the agency obtains through a consultation process between a California Native American tribe and a state or local agency (CGC Section 6254.10).*

Likewise, the Information Centers of the California Historical Resources Information System maintained by the Office of Historic Preservation prohibit public dissemination of records search and site location information. In compliance with these requirements, and those of the Code of Ethics for the Society of

California Archaeology and the Register of Professional Archaeologists, the locations of cultural resources are considered restricted information with highly restricted distribution and are not publicly accessible.

California Public Resources Code Section 5097.9

Section 5097.9 of California's Public Resources Code prevents all public agencies or private parties using or operating public property under a contract made after June 30, 1977, from interfering with the free expression or exercise of Native American religion. This section of the Public Resources Code also prohibits damage to a sanctified Native American cemetery, place of worship, shrine, or religious or ceremonial site located on public property unless it is clearly and convincingly in the public interest to do so.

California Health and Safety Code Section 7050.5

Section 7050.5 of the Health and Safety Code makes it a misdemeanor to intentionally disturb, mutilate, or remove interred human remains. It also requires that if human remains are discovered outside of a dedicated cemetery, any excavation or disturbance of the site stop until the county coroner makes a report. Under this section, if the county coroner determines the remains to be of a Native American, the coroner must contact the NAHC within 24 hours.

California Building Standards Code

Title 24 of the California Code of Regulations, known as the California Building Standards Code (CBSC) or simply "Title 24," contains the regulations that govern the construction of buildings in California. The CBSC includes 12 parts which include the California Building Code and California Historical Building Code with regulations for historic buildings.

Local Regulations

2000-2020 Redding General Plan

The following policies are included in the existing General Plan regarding cultural resources. The numbering is from the existing General Plan and therefore may not be consecutive.

Community Development and Design Element

- Goal CDD9: Preserve existing community character and fabric and promote the development of livable and cohesive neighborhoods and districts.
    - Policy CDD9A: Encourage the preservation and rehabilitation of historically or architecturally significant districts, buildings, and structures.

Economic Development Element

- Goal ED6: Establish the Downtown area as a vibrant, health city core that serves as the City's social, cultural, and specialty retail center.

- Policy ED6B: Preserve and enhance historic structures that contribute to the unique character of Downtown and add to the Downtown pedestrian retail attraction.

Natural Resources Element

- Goal NR12: Protect and enhance historical and culturally significant resources within the Planning Area.
  - Policy NR12A: Ensure protection of prehistoric, cultural, and archaeological resources during the development process.
  - Policy NR12B: Refer development proposals that may adversely affect archaeological sites to the California Archaeological Inventory, Northeast Information Center, at Chico State University.
  - Policy NR12C: Encourage public and private efforts to identify, preserve, protect, and/or restore historic buildings, structures, landmarks, and important cultural resources.
  - Policy NR12D: The City shall not knowingly approve any public or private project that may adversely affect an archaeological site without first consulting the Archaeological Inventory, Northeast Information Center, conducting a site evaluation as may be indicated, and attempting to mitigate any adverse impacts according to the recommendations of a qualified archaeologist. City implementation of this policy shall be guided by Appendix "K" of the CEQA Guidelines.

Recreation Element

- Goal R3: Preserve and enhance Redding's historic and cultural heritage in the process of park development.
  - Policy R3A: Protect and enhance historically significant structures and resources located in park and open-space lands.
  - Policy R3B: Ensure that park-development and parkland-acquisition proposals consider potential impacts to historical or archaeological resources and minimize or eliminate those impacts to the fullest extent possible.
  - Policy R3C: Integrate historic resources into park developments, where possible.

City of Redding Municipal Code

Chapter 18.23, Historic/Architectural Preservation, of the Redding Municipal Code is intended to promote the public peace, health, safety, and welfare through identifying historic/architecturally important buildings and structures and assisting property owners in maintaining the character of these important community assets; implement the Mills Act Historic Property Tax Incentive Program by establishing appropriate

administrative procedures; and identify properties appropriate for Mills Act contracts and the application of the California Historical Building Code.

5.5.1.2 EXISTING CONDITIONS

Ethnographic

The project area is located in a region known to have been occupied by the local Wintu tribes. Wintu territory encompassed portions of present-day Trinity, Tehama, Shasta, and Siskiyou counties. The territory is bounded in the southeast by the South Fork Trinity River, in the southwest by Beegum and Little Cow creeks, and in the north by Mount Shasta. There are nine distinct Wintu tribes: Nomti-pom, Wenemem, Dawpom, Elpom, λ'abal-pom, Nomsu's, Dawnom, Norelmaq, and Norelmaq. The Wintu language is in the Penutian language family and is part of the Wintuan language group that includes the Wintu, the Nomlaki, and the Patwin (Heizer 1978).

The Wintu hunted deer, brown bears, quails, rabbits, rats, squirrels and birds. They mostly fished Chinook salmon and steelhead, but also collected suckers, mussels, and clams. The family units would collect acorns, buckeye, manzanita berries, Indian potatoes, Calochortus sp. (pussy's ears), snake's head, clover, miner's lettuce, skunkbush, hazel nuts, pine nuts, and wild grapes. The Wintu would also cultivate many plants for medicine, such as pennyroyal, Oregon grape, soaproot, milkweed, and salt (Heizer 1978).

Village structures included bark houses, steam houses, menstrual huts, and earthen lodge. The bark houses were the family unit's main shelter. Bark houses were conical and made of poles lashed together and covered in bark or branches of evergreen. Steam houses and menstrual huts were domed brush shelters. The semi-subterranean earth lodges were the largest structures, ranging from 15 to 20 feet in diameter with a center pole. Earthen lodges were used by men for gatherings, sweating, shaman initiation, and for single men to sleep in during the winter months (Heizer 1978).

The family unit was the basic organization unit and the village served as the focus of social, political, and economic organization. The position of chief was hereditary, passing from father to eldest son; however, it was necessary that the son be deemed worthy by the villagers. The Wintu were generally known to be a peaceful people, but they did engage in warfare. Wintu wars were typically the result of feuds between individuals or neighboring groups, and these conflicts were generally limited in their scope and severity by strong bonds of kinship. Weapons used included bows and arrows, clubs, thrusting spears, daggers and slings. Wintu funerary practices required an individual to be buried the same day they died, or as soon as their relatives arrived. Individuals were buried in a crouched position, with their elbows placed between their knees and their hands placed on their cheeks. They were then bundled in a deer or bearskin and buried. Funerary objects included personal effects of the deceased, the deceased's dog, and a basket of acorn meal water (Heizer 1978).

Today, the Wintu practice aspects of and value their traditional culture. They are extremely outspoken about the protection of areas important to the tribe, as destruction of these places negatively affect emotional health of tribal members. In addition, tribal reorganization and recognition are important issues, which remain at the forefront (LaPena 2014).

Pre-Contact

The Wintu population prior to contact with Europeans is estimated to have been over 14,000. A malaria epidemic swept through the Central and Upper Sacramento Valley in 1830-1833, killing off 75 percent of the Indigenous population and severely hindering the ability of the Wintu to resist incursions into their territory by settlers. As settlers moved into the region, the Wintu faced the destruction of vital resources by livestock, the pollution of fishing areas by gold miners, and violent conflict with settlers. These factors further diminished the Wintu population, and by 1910 the Wintu population is estimated to have been approximately 395 individuals. Shasta Dam and others were constructed in the 20th century, which dispersed many of the surviving of Wintu, as much of their habitable land was inundated (Heizer 1978). The Wintu population was identified as approximately 2,244 in the 1990 census (LaPena 2014).

Historic Initial Contact and Early Settlement

Although Russian and Spanish explorers were said to have travelled through the area as early as 1815, the earliest documented European-American presence in the area was related to fur trapping by the Hudson Bay Company. Seeking beaver pelts, which commanded top dollar, the trappers established and mapped the first European-American trails into Shasta County (Smith 2009). Don Luis Arguello travelled up the Sacramento River in 1921 nearly as far as what is now known as Redding (Bunse and Wee 2020). Peter Skene Ogden (who is believed to have named Mount Shasta) and Jedediah Strong Smith travelled up the Sacramento Valley and into Oregon in 1827 and 1828, via the Pacific Coast.

European-American settlement in the northern Sacramento Valley began in large part with the acquisition and development of Rancho Buenaventura. Mexican Governor Manuel Micheltorena gave this land grant to Major Person Barton Reading in 1844, who received a patent for the land from the U.S. government by 1854. Rancho Buenaventura encompassed six square leagues of land on both sides of the Sacramento River from north of downtown Redding to south of Anderson and supported a huge cattle operation (Smith 2009; Bunse and Wee 2020).

The arrival of these European-American trappers and settlers had a devastating impact on the native population. As much as 75 percent of the population may have died as a result of the diseases brought by the European-Americans (Bunse and Wee 2020).

Mining

The Gold Rush of the late 1840s and 1850s created a surge of miners working the rivers and creeks in Shasta County. From its early beginnings, mineral extraction was one of Redding's principal industries. Major Reading located gold at Reading's Bar in Clear Creek (Kyle 2002). The gold discovery marked a turning point for him, and he established a gold mine just north of Clear Creek. He named the area Reading Springs, and by 1849 it became a permanent site for miners, and subsequently became the Gold Rush boom town of Shasta (Shastahistorical.org 2017).

California's exponential growth in the 1850s came from heavy gold, copper, and iron mining throughout the state. Some of these minerals were intensely sought after in the mountains surrounding Redding. The processing of these minerals produced such heavy pollution that local agriculture was damaged (City of Redding 2017). By 1906, only five copper smelters were in operation and their decline led to a drop in Redding's population (Kyle 2002; City of Redding 2017). At the end of the Gold Rush, most miners took up ranching, farming, or other trades in the valley areas, with very few settling the forested areas or higher elevations.

Redding

The City of Redding lies within the Rancho Buenaventura Land Grant, a 3-mile-wide, 19-mile-long stretch of the western bank of the Sacramento River, which extended from Salt Creek at its northern boundary to Cottonwood Creek at its southern boundary and encompassed 26,000 acres (Hoover et al. 2002; www.cityofredding.org). Rancho Buenaventura was granted to Pierson B. Reading by Mexican Governor Micheltorena in 1844, and the ranch he built on this property became the seat of Shasta County in 1850 (Hoover et al. 2002). While Reading was an influential figure in the region's history and the town was initially named for him, eventually the name was changed to honor Canadian-born politician and journalist Benjamin B. Redding, who came to California by way of Boston and became involved in the booming mining and railroad industries (Gudde 1969; Hoover et al. 2002; Shastahistorical.org 2022). His work as a land agent for the Central Pacific Railroad garnered him influence and the city was named after him in 1872.

In 1874, local legislature moved to change the spelling of the town's name to Reading to honor Pierson B. Reading as founder of the Shasta community. The railroad, however, refused to recognize the name change, and as a result there was a lot of confusion over the official spelling of the town's name. The name was officially confirmed to be Redding by 1880 (Gudde 1969; Shastahistory.org 2017). The City of Redding was incorporated on October 4, 1887 and became recognized under the State Constitution as a city formed under state legislative statues (City of Redding 2022). It became the County Seat in 1888, which was moved from Shasta after the decline of the mining industry (Gudde 1969).

Logging History

Logging pre-dated mining due to California's well-known forest of pine, fir, and cedar trees (McGuire et al. 2020:63). One of the initial small-scale logging operations was undertaken by Samuel Hensley who felled trees near the present site of Ball's Ferry in 1844 and sent the lumber to Sutter's Fort via the Sacramento River. Carpenters would then fashion the wood for furniture or buildings (Tuggle 2017). The discovery of gold dramatically increased demand for lumber for fuel, equipment, tunnel braces, and buildings (McGuire et al. 2020:64). The first sawmill in Shasta County was established in 1850 by Johnathan Otis and a man named Truett (Tuggle 2017). Together they established Otis and Truett Lumber Mill on the south fork of Rock Creek, near the town of Shasta, northwest of Redding (Tuggle 2017). Shingle Camp along Highway 44, eventually renamed Shingletown, became the first location to produce shingle and shakes in Shasta County and it quickly became the nucleus of the lumber industry. The California State Census reported eight logging mills in the area in 1852 (Tuggle 2017).

A succeeding gold boom (in Idaho) and the Civil War in 1860 brought new surges of growth to the timber industry. The establishment of the railroad and flume provided more reliable methods of lumber transportation in the 1870s and connected Sacramento and San Francisco with the Upper Sacramento towns. The Blue Ridge Flume transported lumber from remote saw mills in Manton and Viola to Jelly's Ferry (south of the City of Redding) and then to Red Bluff by wagon (Bunse and Wee 2020:64; Vaughn 1992).

Railroad construction, mining in other states, and a growing fruit industry encouraged the start of lumber milling in Redding in 1884 (McGuire 2020:64). The thriving milling industry in Shasta County coincided with the start of construction of Shasta Dam in 1938 and the beginning of World War II in 1941. By this time, the development of box companies in Redding and Anderson had the lumber industry firmly established in the area (McGuire 2020:65). Growth through the 1950s was largely spurred by post-war demand for lumber production and remains one of Redding's principal industries today (City of Redding 2017).

Ranching/Farming

Ranching and farming quickly became key industries that supported the local Redding economy in the 1850s. Many settlers turned to sheep ranching during the Gold Rush to maintain the supply of meat and mutton for gold seekers (Bunse and Wee 2020:65). In the northern Sacramento Valley between 1860 and 1900, ranchers would let their sheep range from mountain meadows to summer grazing grounds. Eventually, Red Bluff (south of Redding) became a hub for raising sheep for food and wool (Bunse and Wee 2020:65). With the establishment of the U.S. Forest Service and other public lands, ranging lands to support sheep shrunk and many ranchers turned to cattle by 1900 (Bunse and Wee 2020:65-66). Cattle and dairy soon became the most valuable livestock in the area and Anderson (south of Redding) became the leading dairy processing center (Bunse and Wee 2020:66).

Transportation

The first European-American transportation routes generally followed the established system of Native American trails. As settlers arrived in Oregon and began the travel into the Sacramento Valley, they could choose from various routes. Many of the routes passed through Redding or the nearby vicinity. Trappers soon established a trail that followed the course of the Sacramento River between Oregon and San Francisco. Former U.S. Highway 99 (now State Route 99 south of Red Bluff) and modern Interstate 5 both use this corridor (Bunse and Wee 2020).

Although mining was primarily conducted several miles west of the City of Redding, one of the main routes the immigrants traveled to get to the mining areas near the Sacramento Valley was Noble's Trail. Present-day Highway 44 essentially follows Noble's Trail (Kyle 2002). Noble's Trail became known as the easiest route to descend into the upper Sacramento Valley at Shasta City, to the north of present-day Redding (Trails West Inc. n.d.).

Benjamin Bernard Redding was primarily responsible for bringing the Central Pacific Railroad to Redding. He was born in Canada in 1824 and sailed to California in 1849 to make his fortune during the Gold Rush. He earned quite a diverse skillset including mining, clerical work, and editing. He was elected to the California State Assembly from 1853 to 1854, and elected Mayor of Sacramento in 1856. He also served as Secretary of State from 1863 to 1867. He became the first land agent for the Central Pacific Railroad in 1868 and bought the original property so the railroad could be built. The area 6 miles east of Shasta, known at the time as Poverty Flats, was selected to be the northern terminus of the railroad in 1872 (Shastahistorical.org 2017).

The Homestead Act of 1862 and the arrival of the Central Pacific Railroad in Redding in 1872 led to a population boom in Shasta County. The Homestead Act gave away 160 acres of land at a time to any individual over the age of 21 who was head of household and could pay the $12 processing fee. The vagueness of the wording allowed many women and immigrants to file land claims during this time (Library of Congress 2017). The expansion of the railroads correlated with the migration spurred by this act. Benjamin B. Redding decided to make a rail stop there, and in 1872 the tracks were routed through the area (Redding 2017).

In the early 20th century, as transportation became an increasing concern, the City of Redding began to consider the system of roads and their relation to regional or community transport needs. The main road through Redding was a dirt, unimproved road until the late 1920s and "carried miners, loggers, and immigrants during the Gold Rush" (Bunse and Wee 2020). This road underwent improvements, eventually becoming part of U.S. Highway 99. Additional improvements by the California Division of Highways resulted in the route being upgraded to Interstate 5. The California Highway Commission completed a survey of the condition of bridges in the area to support the new transportation system and growth. Some bridges were built at the locations of earlier ferry crossings, and others are now National Landmarks or used as pedestrian crossings. The remains of some bridges (i.e., Diestelhorst Bridge) can still be seen through the area (Bunse and Wee 2020).

Dams

After the decline in population from decreased mining operations, the population recovered with a boom in the 1930s spurred by the construction of Shasta Dam along the Sacramento River between 1938 and 1945, 12 miles north of the City of Redding. As flood control became a necessity for farming and ranching, Shasta Dam was constructed to harness torrential rains that caused severe flooding. The dam was completed in 1945, took six years to construct, and included the ability to harness hydroelectric power (WEF 2022; Redding 2022). Shasta Lake is a major recreation area and important for "water storage, flood control and hydroelectric power" (Kyle 2002).

Whiskeytown Dam, constructed along Clear Creek between 1960 and 1963, resulted in the formation of Whiskeytown National Recreation Area with 36 miles of shoreline. With the development of these dams and access to the Sierra Nevada, Trinity Alps, and Cascade Mountains, Redding became a tourist attraction. The dam projects spurred the development of nearby commuter towns of Central Valley, Summit City, and Project City, which are now known under the name Shasta Lake City.

Keswick Dam and Reservoir is located along the Sacramento River. Dam construction began in 1941, finished in 1950, and generates hydroelectric power. Currently, the reservoir is used for outdoor recreation and produces electricity.

Record Search Results

A records search request, submitted to the Northeast Information Center of the California Historical Resources Information System on March 23, 2022, returned a total of 403 previously recorded cultural resources within the limits of the City of Redding on April 20, 2022. Previously recorded sites consist of 171 pre-contact, 195 historic, 26 multi-component, and 11 unknown site type or isolates.

Types of Sites

Both pre-contact and historic sites are known to exist within the City of Redding limits. Pre-contact sites include habitation sites, ceremonial locations, rock art, trails, lithic scatters and quarries, resource collection and processing sites, and isolated pre-contact artifacts. Historic sites include mining locations (i.e., Placer, hydraulic), livestock ranching, early transportation corridors (wagon roads, railroads, roads), logging features, water transportation, trash dumps and privies, buildings, structures, and cemeteries.

Pre-contact sites are often found situated along the banks of rivers and streams (current and former) in locations that provide easy access to a variety of resources. Historic sites are located in similar areas; however, some resources sought by settlers encouraged land use in unfavorable locations. Historic buildings or structures are generally located in or near the City of Redding center, although some structures or buildings associated with ranching activities or homesteads may be located in more rural areas. Artifacts associated with all of these activities, but are isolated, may be found throughout the city.

National Register of Historic Places and California Register of Historical Resources Listed Resources

The following are NRHP historic or built environment listed sites (NPS 2023):

- Benton Tract Site
- Old City Hall Building
- Pine Street School
- Edward Frisbee House
- Lorenz Hotel
- Cascade Theater
- Olsen Petroglyphs
- Squaw Creek Archeological Site
- Swasey Discontiguous Archeological District

The following are State Landmarks and Points of Interest in the CRHR (OHP 2023):

- Bell's Bridge
- Cascade Theatre
- Clear Creek
- Old Pine Street School
- Reading's Bar
- Whiskeytown

Built Environment Districts:

- Keswick Dam

5.5.2 THRESHOLDS OF SIGNIFICANCE

CEQA Guidelines Section 15064.5 provides direction on determining significance of impacts to archaeological and historical resources. Generally, a resource shall be considered "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources:

- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- Is associated the with lives of persons important in our past;

- Embodies the distinctive characteristics of a type, period, region or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- Has yielded, or may be likely to yield, information important in prehistory or history. (PRC § 5024.1; 14 CCR § 4852)

The fact that a resource is not listed in the California Register of Historical Resources, not determined to be eligible for listing, or not included in a local register of historical resources does not preclude a lead agency from determining that it may be a historical resource.

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

CULT-1 Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5.

CULT-2 Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.

CULT-3 Disturb any human remains, including those interred outside of dedicated cemeteries.

CULT-4 Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Sections, 21074, 5020.1(k), or 5024.1.

CULT-4 In combination with past, present, and reasonably foreseeable projects, result in significant cumulative impacts with respect to cultural resources and tribal cultural resources.

5.5.3 PROPOSED GENERAL PLAN POLICIES

The following relevant policies of the 2023-2045 Redding General Plan Update may reduce the potential impacts on cultural resources and tribal cultural resources as a result of implementation of the proposed project.

Natural Resources Element

- Policy NR9A: Strive to ensure the protection of prehistoric, cultural, and archaeological resources during the development process. Consult with local Wintu tribes as appropriate to help identify and preserve cultural resources during the development review process.
- Policy NR9B: Require that any human remains discovered during implementation of public and private projects within the City be treated with respect and dignity and fully comply with the California Native American Graves Protection and Repatriation Act and other appropriate laws.

- **Policy NR9C:** Continue to consult and require record searches for discretionary projects with the Northeast Center of the California Historical Resources Information System (CHRIS) located at the CSU Chico. Consult with and distribute environmental review documents to the Native American Heritage Commission through the State Clearinghouse.
- **Policy NR9D**: Encourage partnerships to identify, preserve, protect, and/or restore historic buildings, structures, landmarks, and important cultural resources.
- **Policy NR9E**: Maintain and update as necessary the City's Historic Preservation Ordinance and the historic resources inventory; consider seeking grants and assistance from community organizations to assist facilitate this effort.
- **Policy NR9F**: Consider seeking the City's recognition by the State Historic Preservation Office as a Certified Local Government as a means to obtain grant funding sources available to Certified Local Governments to develop, establish and maintain a more robust historical resources inventory and program.

Community Design and Development Element

- **Policy CDD8A**: The City, in partnership with appropriate community partners and organizations, should work to encourage the preservation and rehabilitation of historically and architecturally significant districts, buildings, and structures. Utilize and advertise, as appropriate, the availability of the state Mills Act Program that provides incentives to private property owners to preserve and maintain historic properties.
- **Policy CDD8B**: Consider strengthening historic preservation planning by amending the Historic/ Architectural Preservation Ordinance that will lead to the identification and preservation of historically significant structures and districts and guide new development.
- **Policy CDD8C**: As opportunities allow, collaborate with other public, private, and non-profit agencies to document architecturally and culturally significant buildings and structures, including expanding/refining the City's Candidate List of Historic Structures to better understand the historic nature of these properties.
- **Policy CDD8F**: Work with local organizations to create incentives to encourage the protection and preservation of historical buildings and structures to prevent, to the extent feasible, their demolition.
- **Policy CDD8G**: Consider the development and application of a Neighborhood Conservation Overlay District or similar mechanism to protect identified historic districts and ensure new developments share similar characteristics to minimize adverse effects that occur through unsuitable development.

Parks, Trails, and Recreation Element

- Policy R2E: Encourage community stewardship and volunteerism to protect, preserve, rehabilitate and highlight the Sacramento River corridor and its natural, historical, pre-historical and cultural resources.
- Policy R4A: Protect, enhance, and integrate where possible, historically and culturally significant structures and resources located in parks and open-space areas in accordance with the Historic/Architectural Preservation Ordinance.
- Policy R4B: Ensure that park development and parkland acquisition proposals consider potential impacts to historical or archaeological resources and eliminate or minimize those impacts to the fullest extent possible.
- Policy R4C: Promote and encourage consultation and partnership with Wintu tribes and historical research groups and others for the protection, improvement, and preservation of archaeological, paleontological, historical and cultural resources in parks.
- Policy R4D: Preserve, educate, and enhance art and culture, representative of the community or neighborhood in park design, where feasible.

5.5.4 IMPACT DISCUSSION

CULT-1:	The proposed project could cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5.

There are 14 identified historical resources in the City of Redding which include seven NRHP historic or built environment listed sites—two NRHP or CRHR listed resources, four State landmarks and points of interest, and one built environment district (OHP 2023, NPS 2023).

Future development under the proposed General Plan could adversely impact historic resources through changes to accommodate adaptive reuse, removal, or reconstruction. Known or future historic sites or resources listed in the national, California, or local registers maintained by the City would be protected through local ordinances, the General Plan Update policies, and state and federal regulations restricting alteration, relocation, and demolition of historical resources. For example, Chapter 18.23, Historic/Architectural Preservation, of the Redding Municipal Code implements the Mills Act program to help protect locally designated historic resources. The City has also adopted the historic building provisions of the California Building Code via Chapter 16.02, Building Code, of the Municipal Code. Compliance with the proposed General Plan Update policies, local ordinances, and state and federal regulations would ensure that development would not result in adverse impacts to identified historic and cultural resources. While the regulations provide a process for recognizing historic buildings and places, they do not prevent the reuse or modification of them. Further, a comprehensive assessment of historic resources has not been undertaken.

The General Plan Update is a regulatory document that sets the framework for future growth and development of the city and does not directly result in development. Before any development or redevelopment projects can occur in the city, all such projects are required to be analyzed for conformance with the General Plan, zoning requirements, and other applicable local and state requirements; comply with the requirements of CEQA; and obtain all necessary clearances and permits. Therefore, adoption of the General Plan Update in itself would not lead to demolition or material alteration of any of historic resources.

However, identified historic structures may be vulnerable to development activities accompanying infill, redevelopment, or revitalization that would be accommodated by the General Plan Update. For instance, the placement of new buildings adjacent to a historic resource may result in indirect impacts to access, visibility, and visual context, while renovations or modification to historic resources may deteriorate or destroy the characteristics that make those resources important or unique.

In addition, other buildings or structures that could meet the NRHP criteria upon reaching 50 years of age might be impacted by development or redevelopment activity that would be accommodated by the General Plan Update, and construction could damage or destroy as-yet undiscovered resources.

The General Plan Update includes goals, policies and actions that would address potential historic resource impacts and propose mitigation. Natural Resources Element Goal NR9 and its associated policies address potential impacts of new development on cultural resources. Specifically, Policy NR9A strives to ensure protection of prehistoric, cultural, and archaeological resources during the development process and requires consultation with local Wintu tribes to help identify and preserve cultural resources during the development review process. Policy NR9C requires record searches for discretionary projects with the Northeast Center of the California Historical Resources Information System and consultation and distribution of environmental review documents to the Native American Heritage Commission through the State Clearinghouse. Policy NR9D encourages partnerships to identify, preserve, protect, and/or restore historic buildings, structures, landmarks, and important cultural resources.

The General Plan Update also seeks to preserve important historical resources through Community Design and Development Element Goal CDD8 and its associated policies. In particular, Policy CDD8A encourages the preservation and rehabilitation of historically and architecturally significant districts, buildings, and structures. Policy CDD8B aims to strengthen historic preservation planning by amending the Historic/ Architectural Preservation Ordinance that will lead to the identification and preservation of historically significant structures and districts and guide new development. Policy CDD8C seeks to document architecturally and culturally significant buildings and structures through collaboration with other public, private, and non-profit agencies. Policy CDD8F seeks to create incentives to encourage the protection and preservation of historical buildings and structures by working with local organizations.

Furthermore, several existing regulatory procedures would help to protect existing or potential historic resources. For example, if a project is subject to federal approval, funding, authorization, or permit (collectively, “assistance”), then the federal lead agency will direct the compliance and consultation procedures. Typically, this begins with a cultural resources inventory conducted according to the applicable

federal agency's regulations (e.g., 36 Code of Federal Regulations [CFR] 800) and guidelines in compliance with Section 106 of the National Historic Preservation Act. This process includes establishing an Area of Potential Effects (APE), surveying the APE for cultural resources, applying the criteria of adverse effects in 36 CFR 800.5(a)(1) to determine if historic properties will be adversely affected by the project, and handling resources that may be discovered inadvertently during construction pursuant to 36 CFR Part 800.13(b).

Additionally, projects subject to approval under the CEQA, may be required to conduct a cultural resources analysis to identify and protect historical resources in compliance with CEQA law. This could include conducting a cultural resources inventory of the project area and designing or configuring the project to avoid impacts on eligible or listed resource, or preparing and implementing appropriate treatment measures as determined by a qualified professional. Resources that may be discovered inadvertently during construction may be subject to inadvertent discovery protocols.

Regardless of the implementation of General Plan policies and adherence to state regulations, some historic properties may be significantly affected by implementation of this General Plan Update. This impact would be potentially significant.

Level of Significance Before Mitigation: CULT-1 would be potentially significant.

Mitigation Measures

Compliance with the applicable regulatory processes would ensure that existing and future historic resources are protected to the extent possible. Project-specific impacts are not known at this time and future impacts would be assessed under project-specific environmental review during which mitigation measures may be adopted to address specific impacts. However, potential significant impacts to historic resources may occur and as such, impacts are significant and unavoidable.

Level of Significance After Mitigation: Impact CULT-1 would be significant and unavoidable.

CULT-2: The proposed project could cause a substantial adverse change in the significance of an archeological resource pursuant to CEQA Guidelines Section 15064.5.

Development allowed by the General Plan Update could result in direct or indirect impacts to archaeological resources. Construction activities, such as grading and excavation, may result in the accidental destruction or disturbance of archaeological sites.

Adoption of the General Plan Update in itself would not directly affect archaeological resources. Long-term implementation of the General Plan Update land use plan could include grading, and other ground-disturbing activities, of known and unknown sensitive areas. Grading and construction activities of undeveloped areas or redevelopment that requires more intensive soil excavation than in the past could

potentially cause the disturbance of archaeological resources. Therefore, future development that would be accommodated by the General Plan Update could potentially unearth previously unrecorded resources.

There are numerous confidential archaeological sites that represent the prehistoric and historic occupation and history of the city but are not publicly disclosed. The recorded sites include items such as milling stones, flakes tools, bone fragments, chipping waste, scrapers, hammerstones, and various ground stone scatter. Archaeological sites are protected by a wide variety of state policies and regulations under the California Public Resources Code. Cultural resources are also recognized as nonrenewable and therefore receive protection under the California Public Resources Code and CEQA. Review and protection of archaeological resources are afforded by CEQA for individual development projects that would be accommodated by the General Plan Update, subject to discretionary actions that are implemented in accordance with the land use plan of the General Plan Update. According to Public Resources Code Section 21083.2 of CEQA, the lead agency is required to determine whether a development project may have a significant effect on archaeological resources. If the lead agency determines that the project may have a significant effect on unique archaeological resources, the project-level CEQA document prepared for the development project is required to address the issue of those resources.

It is also important to note that the General Plan Update is a regulatory document that sets the framework for future growth and development in the city and does not result in development in and of itself. Before any development or redevelopment activities can occur in the city, they must be analyzed for conformance with the General Plan, zoning requirements, and other applicable local and state requirements; comply with the requirements of CEQA; and obtain all necessary clearances and permits.

Long-term implementation of the General Plan Update could include grading of unknown sensitive areas. Grading and construction activities of undeveloped areas or redevelopment that require more intensive soil excavation than in the past could potentially cause the disturbance of archaeological resources. Therefore, future development could potentially unearth previously unknown/unrecorded archaeological resources. However, compliance with existing regulatory requirements would mitigate potential impacts to less than significant.

Level of Significance Before Mitigation: CULT-2 would be less than significant.

Mitigation Measures

No mitigation measures are required.

CULT-3:	The proposed project would not disturb any human remains, including those interred outside of formal cemeteries.

Although the General Plan Update would not affect any formal cemeteries or known burials outside of formal cemeteries, future development could disturb unknown human remains.

California Health and Safety Code, Section 7050.5, CEQA Section 15064.5, and Public Resources Code, Section 5097.98, mandate the process to be followed in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery. Specifically, California Health and Safety Code, Section 7050.5, requires that if human remains are discovered on a project site, disturbance of the site shall remain halted until the coroner has conducted an investigation into the circumstances, manner, and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in Public Resources Code Section 5097.98. If the coroner determines that the remains are not subject to his or her authority and has reason to believe they are those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission. Although soil-disturbing activities associated with development in accordance with the General Plan Update could result in the discovery of human remains, compliance with existing law and proposed General Plan policies, such as Policy NR9B, which requires that any human remains discovered during implementation of projects within the City be treated with respect and dignity and fully comply with the California Native American Graves Protection and Repatriation Act and other appropriate laws. Therefore policies in the proposed General Plan would ensure that significant impacts to human remains would be mitigated to less than significant.

Level of Significance Before Mitigation: CULT-3 would be less than significant.

Mitigation Measures

No mitigation measures are required.

TCR-1:	The proposed project would not cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Sections, 21074, 5020.1(k), or 5024.1.

The City of Redding is located in a region known to have been occupied by the Wintu tribes. Wintu territory encompassed portions of present-day Trinity, Tehama, Shasta, and Siskiyou counties. The territory is bounded in the southeast by the South Fork Trinity River, in the southwest by Beegum and Little Cow creeks, and in the north by Mount Shasta.

Development allowed by General Plan Update could result in direct or indirect impacts to tribal cultural resources. Construction activities, such as grading and excavation, may result in the accidental destruction or disturbance of tribal cultural resources and/or sites. However, General Plan Update includes goals, policies, and actions that would serve to protect and reduce impacts related tribal cultural resources. The Natural Resources Element Goal NR9 and its associated policies aim to reduce potential impacts of new development on tribal cultural resources. Policy NR9A seeks to ensure protection of prehistoric, cultural, and archaeological resources during the development process and requires consultation with local indigenous tribes and representatives to help identify and preserve cultural resources during the development review process. Policy NR9C requires record searches for discretionary projects with the Northeast Center of the California Historical Resources Information System and consultation and distribution of environmental review documents to the Native American Heritage Commission through the State Clearinghouse. The policies and regulations in the General Plan Update would address potential impacts regarding tribal cultural resources. Therefore, the impacts would be less than significant.

Level of Significance Before Mitigation: TCR-1 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.5.5 CUMULATIVE IMPACTS

CULT-5	The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in less-than-significant cumulative impacts with respect to cultural and tribal resources.

In general, cumulative impacts to cultural and/or historical resource sites would occur when a series of actions leads to the loss of a substantial type of site, building, or resource. For example, while the loss of a single historic building may not be significant to the character of a neighborhood or streetscape, continued loss of such resources on a project-by-project basis could constitute a significant cumulative effect. Changes to the setting or character of an area, for example, by adding modern structures on all sides of a historically significant building, thus altering the aesthetics of the streetscape, would create a significant impact. Destruction or relocation of historic buildings would also significantly impact the setting.

Development allowed by General Plan Update could result in direct or indirect impacts to tribal cultural resources, however, as noted above, the policies and regulations in the General Plan Update would address potential impacts to tribal cultural resources. Cumulative impacts to tribal cultural resources would be less than significant.

However, development in Redding would be subject to federal and State laws protecting cultural resources. The goals and policies of General Plan Update that protect historical, archaeological and tribal cultural resources and human remains, in combination with these other regulations, would result in a less than significant cumulative impact to cultural resources.

Level of Significance Before Mitigation: CULT-5 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.5.6 REFERENCES

Bunse, Meta and Stephen Wee (Bunse and Wee). 2020 Historical Context *in* Programmatic Historic Properties Management Plan for the Shasta Dam and Reservoirs Expansion Project, Shasta County, California. Submitted to US Bureau of Reclamation. Submitted by Far Western Anthropological Research Group, Inc.

California Office of Historic Preservation (OHP). 2023, May 24 (accessed). California Historical Resources. https://ohp.parks.ca.gov/ListedResources/?view=county&criteria=45

Gudde, Erwin G. 1969. California Place Names: The Origin and Etymology of Current Geographical Names. Third Edition. University of California, Berkeley.

Heizer, Robert F. 1978. Handbook of North American Indians, Volume 8. Smithsonian Institution. Washington.

Hoover, M., Rensch, H., Rensch, E., and W. Abeloe. 2002. *Historic Spots in California*. Revised by D. Kyle. Fifth Edition. Stanford University Press, Stanford.

Kyle, Douglas. 2002. *Historic Spots in California*. Stanford University Press. Stanford, California.

LaPena, Frank. 2014. Wintun in Native America in the Twentieth Century, An Encyclopedia. Garland Publishing, Inc., New York.

Library of Congress. 2017. Primary Documents in American History. Electronic document, https://www.loc.gov/rr/program/bib/ourdocs/Homestead.html, accessed June 6, 2017.

McGuire, Kelly R, William R. Hildebrant, Brian F. Byrd, Seetha N. Reddy, Shelly Tiley, Meta Bunse, Stephen Wee, Thomas G. Whitley and Mark Walker. 2020. Programmatic Historic Properties Management Plan for the Shasta Dam and Reservoir Expansion Project, Shasta County, California. Submitted to US Bureau of Reclamation. Submitted by Far Western Anthropological Research Group, Inc.

National Park Service (NPS). 2023, May 24 (accessed). National Register Database and Research. https://www.nps.gov/subjects/nationalregister/database-research.htm#table.

Redding, City of. 2022. Historic Redding California. Electronic document, https://www.cityofredding.org/about-us/brief-history-of-redding, accessed February 28, 2022.

Shasta Historical Society. 2017. http://shastahistorical.org/ electronic document. Accessed June 10, 2017.

Smith, Dottie. 2009. The Dictionary of Early Shasta County History, 2nd edition.

Thompson, T.H. and A.A. West. 1880. *History of Sacramento County*. Reproduced by Howell North, 1960, Berkeley.

Trails West Inc. n.d. A Guide to the Nobles Trail by the Oregon California Trails Association (OCTA). Editor, Richard K. Brock.

Tuggle, Jeremy M. 2017. Gold & Lore: Birth of the Shasta County Lumber Industry. Shasta Historical Society. Electronic document, https://www.redding.com/story/life/2017/01/13/gold-lore-birth-shasta-county-lumber-industry/96529902/, accessed February 28, 2022.

Vaughn, Trudy, Eric Ritter, and Dottie Smith. 1992. The Historic Blue Ridge Flume in Shasta and Tehama Counties, California *in* Gold and Lumber: Two Papers on Northern California History and Archaeology. Bureau of Land Management, Redding, California.

Water Education Foundation (WEF). 2022. Shasta Dam - Water Education Foundation. Electronic document, https://www.watereducation.org/aquapedia/shastadam#:~:text=Construction%20on%20the%20dam%20began%20in%201938%20and,Sacramento%20River%20behind%20its%20602-foot%20curved%2C%20concrete%20face, accessed June 30, 2022.

This page intentionally left blank.

5.6 ENERGY

Section 21100(b)(3) of CEQA requires that an EIR include a detailed statement with mitigation measures proposed to minimize significant effects on the environment, including but not limited to, measures to reduce the wasteful, inefficient, and unnecessary consumption of energy. Appendix F of State CEQA Guidelines states that, in order to ensure that energy implications are considered in project decisions, the potential energy implications of a project shall be considered in an EIR, to the extent relevant and applicable to the project. Appendix F further states that a project's energy consumption and proposed conservation measures may be addressed, as relevant and applicable, in the project description, environmental setting, and impact analysis portions of technical sections, as well as through mitigation measures and alternatives.

In accordance with Appendices F and G of the State CEQA Guidelines, this EIR includes relevant information and analyses that address the energy implications of the proposed project. This section summarizes the proposed project's anticipated energy needs, impacts, and conservation measures. The information in this section and other aspects of the proposed project's energy implications are also discussed in Chapter 3, *Project Description*, and Sections 5.3, *Air Quality*, 5.7, *Greenhouse Gas Emissions*, and 5.16*, Transportation*.

5.6.1 ENVIRONMENTAL SETTING

5.6.1.1 REGULATORY FRAMEWORK

Federal Regulations

Federal Energy Policy and Conservation Act

The Energy Policy and Conservation Act of 1975 was established in response to the 1973 oil crisis. The act created the Strategic Petroleum Reserve, established vehicle fuel economy standards, and prohibited the export of U.S. crude oil (with a few limited exceptions). It also created Corporate Average Fuel Economy (CAFE) standards for passenger cars starting in model year 1978. The CAFE Standards are updated periodically to account for changes in vehicle technologies, driver behavior, and/or driving conditions.

The federal government issued new CAFE standards in 2012 for model years 2017 to 2025, which required a fleet average of 54.5 miles per gallon in 2025. On March 30, 2020, the Environmental Protection Agency finalized an updated CAFE and greenhouse gas (GHG) emissions standards for passenger cars and light trucks and established new standards, covering model years 2021 through 2026, known as the Safer Affordable Fuel Efficient (SAFE) Vehicles Final Rule for Model Years 2021–2026. Under SAFE, the fuel economy standards will increase 1.5 percent per year compared to the 5 percent per year under the CAFE standards established in 2012. Overall, SAFE requires a fleet average of 40.4 mpg for model year 2026 vehicles (85 Federal Register 24174 (April 30, 2020).

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

Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007 (Public Law 110-140) seeks to provide the nation with greater energy independence and security by increasing the production of clean renewable fuels; improving vehicle fuel economy; and increasing the efficiency of products, buildings, and vehicles. It also seeks to improve the energy performance of the federal government. The act sets increased corporate average fuel economy standards; the renewable fuel standard; appliance energy-efficiency standards; building energy-efficiency standards; and accelerated research and development tasks on renewable energy sources (e.g., solar energy, geothermal energy, and marine and hydrokinetic renewable energy technologies), carbon capture, and sequestration (USEPA 2022).

Energy Policy Act of 2005

Passed by Congress in July 2005, the Energy Policy Act includes a comprehensive set of provisions to address energy issues. This Act includes tax incentives for energy conservation improvements in commercial and residential buildings, fossil fuel production and clean coal facilities, and construction and operation of nuclear power plants, among other things. Subsidies are also included for geothermal, wind energy, and other alternative energy producers.

National Energy Policy

Established in 2001 by the National Energy Policy Development Group, the National Energy Policy is designed to help the private sector and state and local governments promote dependable, affordable, and environmentally sound production and distribution of energy for the future. Key issues addressed by the energy policy are energy conservation, repair and expansion of energy infrastructure, and ways of increasing energy supplies while protecting the environment.

Natural Gas Pipeline Safety Act of 1968

The Natural Gas Pipeline Safety Act of 1968 authorizes the United States Department of Transportation to regulate pipeline transportation of flammable, toxic, or corrosive natural gas and other gases as well as the transportation and storage of liquefied natural gas. The Pipeline and Hazardous Materials Safety Administration within the Department of Transportation develops and enforces regulations for the safe,

reliable, and environmentally sound operation of the nation's 2.6-million-mile pipeline transportation system.

State Regulations

Warren-Alquist Act

Established in 1974, the Warren-Alquist Act created the California Energy Commission (CEC) in response to the energy crisis of the early 1970s and the state's unsustainable growing demand for energy resources. The CEC's core responsibilities include advancing State energy policy, encouraging energy efficiency, certifying thermal power plants, investing in energy innovation, developing renewable energy, transforming transportation, and preparing for energy emergencies. The Warren-Alquist Act is updated annually to address current energy needs and issues, and its latest edition was updated in January 2023.

California Public Utilities Commission

In September 2008, the California Public Utilities Commission (CPUC) adopted the Long-Term Energy Efficiency Strategic Plan, which provides a framework for energy efficiency in California through the year 2020 and beyond. It articulates a long-term vision, as well as goals for each economic sector, identifying specific near-term, mid-term, and long-term strategies to assist in achieving these goals. This Plan sets forth the following four goals, known as Big Bold Energy Efficiency Strategies, to achieve significant reductions in energy demand:

- All new residential construction in California will be zero net energy by 2020.[1]
- All new commercial construction in California will be zero net energy by 2030.
- Heating, ventilation and air conditioning commonly referred to as "HVAC" will be transformed to ensure that its energy performance is optimal for California's climate.
- All eligible low-income customers will be given the opportunity to participate in the low-income energy efficiency program by 2020.

With respect to the commercial sector, the Long-Term Energy Efficiency Strategic Plan notes that commercial buildings, which include schools, hospitals, and public buildings, consume more electricity than any other end-use sector in California. The commercial sector's five billion-plus square feet of space accounts for 38 percent of the State's power use and over 25 percent of natural gas consumption. Lighting, cooling, refrigeration, and ventilation account for 75 percent of all commercial electric use, while space heating, water heating, and cooking account for over 90 percent of gas use. In 2006, schools and colleges

[1] Zero net energy buildings are buildings that the total amount of energy used by the building on an annual basis is equal to or less than the amount of renewable energy created on the site.

were in the top five facility types for electricity and gas consumption, accounting for approximately 10 percent of State's electricity and gas use (CPUC 2011).

The CPUC and CEC have adopted the following goals to achieve zero net energy (ZNE) levels by 2030 in the commercial sector:

- Goal 1. New construction will increasingly embrace zero net energy performance (including clean, distributed generation), reaching 100 percent penetration of new starts in 2030.
- Goal 2. 50 percent of existing buildings will be retrofit to zero net energy by 2030 through achievement of deep levels of energy efficiency and with the addition of clean distributed generation.
- Goal 3. Transform the commercial lighting market through technological advancement and innovative utility initiatives.

Renewables Portfolio: Carbon Neutrality Regulations

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

The California Renewables Portfolio Standard (RPS) was established in 2002 under SB 1078 and was amended in 2006, 2011, and 2018. The RPS program requires investor-owned utilities, electric service providers, and community choice aggregators to increase the use of eligible renewable energy resources to 33 percent of total procurement by 2020. Initially under the RPS, certain retail sellers of electricity were required to increase the amount of renewable energy each year by at least 1 percent in order to reach at least 20 percent by December 30, 2010. Executive Order S 14 08 was signed in November 2008, which expanded the state's Renewable Energy Standard to 33 percent renewable power by 2020. This standard was adopted by the California legislature in 2011 (SB X1-2). The California Public Utilities Commission is required to provide quarterly progress reports on progress toward RPS goals. This has accelerated the development of renewable energy projects throughout the state. For the year 2020, the three largest retail energy utilities provided an average of 43 percent of its supplies from renewable energy sources. Community choice aggregators provided an average of 41 percent of its supplies from renewable sources (CPUC 2021).

Senate Bill 350

Governor Jerry Brown signed SB 350 on October 7, 2015, which expands the RPS by establishing a goal of 50 percent of the total electricity sold to retail customers in California per year by December 31, 2030. In addition, SB 350 includes the goal to double the energy efficiency savings in electricity and natural gas final end uses (such as heating, cooling, lighting, or class of energy uses upon which an energy efficiency program is focused) of retail customers through energy conservation and efficiency. The bill also requires the CPUC, in consultation with the CEC, to establish efficiency targets for electrical and gas corporations consistent with this goal. SB 350 also provides for the transformation of the California Independent System Operator into a regional organization to promote the development of regional electricity transmission markets in the

western states and to improve the access of consumers served by the California Independent System Operator to those markets, pursuant to a specified process.

Senate Bill 100

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

Senate Bill 1020

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

Energy Efficiency

California Building Energy Code: Building Energy Efficiency Standards

Energy conservation standards for new residential and nonresidential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the CEC) in June 1977 (Title 24, Part 6, of the California Code of Regulations [CCR]). Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for the consideration and possible incorporation of new energy efficiency technologies and methods. The 2019 Building Energy Efficiency Standards were adopted on May 9, 2018, and went into effect on January 1, 2020.

The 2019 Building Energy Efficiency Standards, which were adopted on May 9, 2018, went into effect starting January 1, 2020. The 2019 standards move toward cutting energy use in new homes by more than 50 percent and require installation of solar photovoltaic systems for single-family homes and multifamily buildings of three stories and less (CBSC 2018). The 2019 standards focus on four key areas: 1) smart residential photovoltaic systems; 2) updated thermal envelope standards (preventing heat transfer from the interior to exterior and vice versa); 3) residential and nonresidential ventilation requirements; and 4) nonresidential lighting requirements (CEC 2018a). Under the 2019 standards, nonresidential buildings are generally 30 percent more energy efficient compared to the 2016 standards, and single-family homes are generally 7 percent more energy efficient (CEC 2018b). When accounting for the electricity generated by

the solar photovoltaic system, single-family homes would use 53 percent less energy compared to homes built to the 2016 standards (CEC 2018b).

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

California Building Code: CALGreen

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (24 CCR, Part 11, known as "CALGreen") was adopted as part of the California Building Standards Code. CALGreen established planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants.[1] The mandatory provisions of CALGreen became effective January 1, 2011, and were last updated in 2022. The 2022 CALGreen update, which was approved as part of 2022 Energy Code became effective on January 1, 2023, and provides updates to the residential and non-residential voluntary measures.

Overall, the code is established to reduce construction waste, make buildings more efficient in the use of materials and energy, and reduce environmental impacts during and after construction. CALGreen has requirements for construction site selection, stormwater control during construction, construction waste reduction, indoor water use reduction, material selection, natural resource conservation, site irrigation conservation, and more. The code provides for design options allowing the designer to determine how best to achieve compliance for a given site or building condition. The code also requires building commissioning, which is a process for verifying that all building systems (e.g., heating and cooling equipment and lighting systems) are functioning at their maximum efficiency (CBSC 2022).

2006 Appliance Efficiency Regulations

The 2006 Appliance Efficiency Regulations (20 CCR Sections 1601–1608) were adopted by the CEC on October 11, 2006, and approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally regulated appliances and non–federally regulated appliances. They contain energy performance, energy design, water performance, and water design standards for appliances (including refrigerators, ice makers, vending machines, freezers, water heaters,

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

fans, boilers, washing machines, dryers, air conditioners, pool equipment, and plumbing fittings) that are sold or offered for sale in California (California Code of Regulations Title 20, Parts 1600–1608). These standards are updated regularly to allow consideration of new energy efficiency technologies and methods.

Assembly Bill 1493

California vehicle GHG emission standards were enacted under AB 1493 (Pavley I). Pavley I is a clean-car standard that reduces GHG emissions from new passenger vehicles (light-duty auto to medium-duty vehicles) from 2009 through 2016 and is anticipated to reduce GHG emissions from new passenger vehicles by 30 percent in 2016. California implements the Pavley I standards through a waiver granted to California by the EPA. In 2012, the EPA issued a Final Rulemaking that sets even more stringent fuel economy and GHG emissions standards for model year 2017 through 2025 light-duty vehicles (see also the discussion on the update to the CAFE standards under *Federal*, above). In January 2012, the California Air Resources Board (CARB) approved the Pavley Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single package of standards. Under California's Advanced Clean Car program, by 2025, new automobiles will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions (CARB 2017).

Executive Order N-79-20

On September 23, 2020, Executive Order N-79-20 was issued, which sets a time frame for the transition to zero-emissions (ZE) passenger vehicles and trucks in addition to off-road equipment. It directs CARB to develop and propose the following:

- Passenger vehicle and truck regulations requiring increasing volumes of new ZEVs (zero-emission vehicles) sold in the California toward the target of 100 percent of in-state sales by 2035.
- Medium- and heavy-duty vehicle regulations requiring increasing volumes of new ZE trucks and buses sold and operated in California toward the target of 100 percent of the fleet transitioning to ZEVs by 2045 everywhere feasible, and for all drayage trucks to be ZE by 2035.
- Strategies to achieve 100 percent zero emissions from all off-road vehicles and equipment operations in California by 2035, in cooperation with other State agencies, the EPA, and local air districts.

On August 25, 2022, CARB adopted the Advanced Clean Cars II (ACC II) regulations that codifies the EO goal of 100 percent of in-state sales of new passenger vehicles and trucks be ZE by 2035. Starting in year 2026, ACC II requires that 35 percent of new vehicles sold be ZE or plug-in hybrids.

Energy Storage

California has set ambitious long-term goals for energy storage beyond 2026 to support its clean energy and climate goals. The state aims to reach 100 percent carbon-free electricity by 2045, which will require significant investment in renewable energy sources like wind and solar, as well as energy storage technologies to balance the variability of these sources.

The California Independent System Operator (CAISO) has a total energy storage capacity of more than 3,160 megawatts (MW) as of June 2022 (CAISO 2022). This includes both large-scale and distributed energy storage systems, such as batteries, pumped hydroelectric storage, and thermal storage. CAISO is responsible for managing the electricity grid for much of California, and it has set a target of adding 3,300 MW of additional energy storage capacity by 2024 to support the integration of more renewable energy sources like wind and solar (CAISO 2022). As part of SB 100, load serving entities (LSEs) were required to procure no less than 1.3 gigawatts (GW) of energy storage capacity by 2020, and 3 GW by 2030. Additionally, the CPUC has established a target of 15 GW of energy storage capacity by 2030 (CPUC 2022).

The Integrated Resource Plan (IRP)

CAISO develops a coordinated grid management plan to integrate the generation and storage capacities of LSEs, called the Integrated Resource Plan (IRP). The IRP is a comprehensive planning document that outlines CAISO's forecasts for electricity demand, supply, and transmission needs over a 20-year planning horizon, as well as its strategies for integrating renewable energy resources and other grid services to meet those needs. The plan is developed in collaboration with LSEs, regulators, and other stakeholders, and is updated periodically to reflect changes in the energy landscape and evolving policy goals. Overall, the IRP plays a critical role in ensuring the reliability and resilience of California's electricity grid as the state continues to transition to a cleaner and more sustainable energy system.

When an individual Battery Energy Storage (BES) facility or generation infrastructure (i.e., solar panels) comes online in California, it is typically included in the IRP through a process known as the Interconnection Queue. The Interconnection Queue is managed by the CAISO, which oversees the operation of the State's electricity grid.

The Interconnection Queue

The Interconnection Queue is an application process that functions as a waiting list of proposed electricity generation and storage projects that are seeking to connect to the grid. When a new BES facility or generation infrastructure is proposed, the developer submits an application to CAISO to request an interconnection to the grid. CAISO evaluates the application to ensure that the facility meets technical and operational requirements, such as voltage regulation and frequency response, and that it can be integrated effectively into the grid.

Once the BES facility or generation infrastructure is approved by CAISO, it is assigned a point of interconnection on the grid, and its output is added to the IRP as a resource that can provide electricity and other grid services, such as frequency regulation or ramping support. The facility is then dispatched by CAISO based on its bids into the day-ahead and real-time electricity markets, and its output is used to help balance supply and demand on the grid in real-time.

Overall, the Interconnection Queue is an important mechanism for integrating new BES facilities and other electricity resources into the California grid, and for ensuring that the grid remains reliable and resilient as the state continues to transition to a cleaner and more sustainable energy system.

Local Regulations

2000-2020 Redding General Plan

Natural Resources Element

- Goal NR14: Reduce consumption of nonrenewable energy sources and support the development and utilization of new energy sources.
    - Policy NR14A: Provide an electric-usage analysis and efficiency recommendations for those customers who request the service.
    - Policy NR14B: Encourage electric utility customers to alter their consumption of electric power to reduce the City's overall and peak electric load.
    - Policy NR14C: Explore the commercial viability of extracting natural gas resources within the vicinity of the Redding Municipal Airport.
    - Policy NR14D: Continue current source-reduction, recycling, and composting programs that are contained in the joint County of Shasta, City of Redding, and City of Anderson Source Reduction and Recycling Element.
    - Policy NR14E: Encourage design that takes advantage of solar orientation and access.

City of Redding Municipal Code

According to Chapter 16.08, Green Building Standards Code, the City has adopted the 2019 Green Building Standards Code, and according to Chapter 16.07, Energy Code, the City has adopted the 2019 California Energy Code.

5.6.1.2 EXISTING CONDITIONS

Energy Providers

Redding Electric Utility

Founded in 1921, Redding Electric Utility (REU) serves as the electricity provider for the City of Redding and operates as a not-for-profit public agency. Total electricity consumption within REU's service area was 757 gigawatt-hours in 2021. Sources of electricity sold by REU in 2021, the latest year for which data are available, were (REU 2021):

- 43.8 percent renewable, consisting mostly of solar and wind
- 36.7 percent large hydroelectric
- 17.9 percent natural gas
- 0.9 percent nuclear
- 0.1 percent other
- 0.5 percent unspecified sources—that is, not traceable to specific sources

The electricity consumption attributable to nonresidential and residential land uses in the City of Redding from 2019-2021 is shown in Table 5.6-1, *Electricity Consumption in Redding 2019-2021*. As indicated, the demand gradually increased between 2019 and 2021.

TABLE 5.6-1 ELECTRICITY CONSUMPTION IN REDDING 2019-2021

Year	Nonresidential Electricity Consumption (Megawatt Hours)[a]
2019	368,909
2020	360,941
2021	371,376
Annual Average (Nonresidential)	**367,076**
Year	**Residential Electricity Consumption (Megawatt Hours)[a]**
2019	357,921
2020	383,360
2021	391,093
Annual Average (Residential)	**377,458**
Total Annual Average	**744,534**
2020 Service Population[b]	173,517
Annual Average Per Service Population Consumption	**4.29**

a . Based on electricity usage data provided by REU.

b. Service population consists of existing (2020) population and employment estimates for the City of Redding and its Sphere of Influence.

Pacific Gas and Electric Company

PG&E is a publicly traded utility company that generates, purchases, and transmits energy under contract with the CPUC. Its service territory is 70,000 square miles in area, roughly extending north to south from Eureka to Bakersfield, and east to west from the Sierra Nevada range to the Pacific Ocean. The electricity distribution system of PG&E consists of 106,681 circuit miles of electric distribution lines and 18,466 circuit miles of interconnected transmission lines. PG&E owns and maintains above- and below-ground networks of electric and gas transmission and distribution facilities throughout Berkeley.

PG&E electricity is generated by a combination of sources such as coal-fired power plants, nuclear power plants, and hydro-electric dams, as well as newer sources of energy, such as wind turbines and photovoltaic plants or "solar farms." "The Grid," or bulk electric grid, is a network of high-voltage transmission lines, linked to power plants within the PG&E system. The distribution system, composed of lower-voltage secondary lines, is at the street and neighborhood level, and consists of overhead or underground distribution lines, transformers, and individual service "drops" that connect to the individual customer.

PG&E gas transmission pipeline systems serve approximately 4.5 million gas customers in northern and central California (PG&E 2022). The system is operated under an inspection and monitoring program. The system operates in real time on a 24-hour basis, and includes leak inspections, surveys, and patrols of the pipelines. A new program, the Pipeline 2020 program, aims to modernize critical pipeline infrastructure, expand the use of automatic or remotely operated shut-off valves, catalyze development of next-generation inspection technologies, develop industry-leading best practices, and enhance public safety partnerships with local communities, public officials, and first responders.

The natural gas consumption attributable to nonresidential and residential land uses in the City of Redding from 2019-2021 is shown in Table 5.6-2, *Natural Gas Consumption in Redding 2019-2021*. As shown, demand has decreased slightly between 2019 and 2021.

TABLE 5.6-2 NATURAL GAS CONSUMPTION IN REDDING 2019-2021

Year	Nonresidential Natural Gas Consumption (Thousands of Therms)[a]
2019	2,018
2020	1,506
2021	4,877
Annual Average (Nonresidential)	**2,801**
Year	**Residential Natural Gas Consumption (Thousands of Therms)[a]**
2019	13,704
2020	13,219
2021	12,550
Annual Average (Residential)	**13,158**
Total Annual Average	**13,158**
2020 Service Population[b]	173,517
Annual Average Per Service Population Consumption	**0.08**

a. Based on electricity usage data provided by PG&E.
b. Service population consists of existing (2020) population and employment estimates for the City of Redding and its Sphere of Influence.

Propane Consumption

Liquefied petroleum gas (LPG), or propane, is a mixture of hydrocarbon gases predominantly composed of propane and butane used as an alternative source of fuel. Propane is commonly used for residential and commercial heating, cooking, transportation, agriculture, industrial processes, power generation, and refrigeration and air conditioning. Within the City of Redding, propane suppliers include Suburban Propane, AmeriGas, Blue Star Gas, and Shasta Gas, which generally supply propane for residential uses in the City. Nonresidential propane consumption is not anticipated to be a substantial contribution to propane consumption in the City.

Transportation Fuel Consumption

California is among the top producers of petroleum in the country, with crude oil pipelines throughout the state connecting to oil refineries in the Los Angeles, the San Francisco Bay, and the Central Valley regions. In addition to producing petroleum, California is also one of the top consumers of fuel for transportation. California's transportation sector accounted for approximately 35 percent of California's total energy demand in 2020, amounting to approximately 2,355.5 trillion British Thermal Units (BTU) (USEIA 2020a). In addition, in 2020, California's transportation sector consumed approximately 433 million barrels of petroleum fuels (USEIA 2020b). Furthermore, according to the CEC, California's 2021 fuel sales were approximately 13,818 million gallons of gasoline and 3,744 million gallons of diesel (CEC 2022). In Shasta

County, approximately 79 million gallons of gasoline and 22 million gallons of diesel fuel were sold in 2021 (CEC 2022).

Alternative fuels for the transportation sector, such as hydrogen, biodiesel, and electricity, are used to reduce the demand of petroleum. Use of these fuels is encouraged through statewide regulations and plans, including the Low Carbon Fuel Standard (LCFS) and SB 32. In particular, use of electricity within the transportation sector has become more prominent. Electric and plug-in hybrid vehicles may rely directly on electricity from the power grid. In addition, emerging technology such as fuel cells are currently being explored to use electricity generated from the vehicle to power motors. California currently has 13,774 EV charging stations, with approximately 37,314 charging ports across all station locations (USDE 2022).

5.6.2 THRESHOLDS OF SIGNIFICANCE

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

ENE-1 Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.

ENE-2 Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

ENE-3 Require or result in the relocation or construction of new or expanded energy facilities, the construction or relocation of which could cause significant environmental effects.

ENE-4 In combination with past, present, and reasonably foreseeable projects, result in cumulative impacts with respect to energy.

5.6.3 METHODOLOGY

To determine whether the proposed project would result in wasteful, inefficient, or unnecessary consumption of energy resources, this analysis will utilize the guidance provided in Appendix F of the CEQA Guidelines as well as the analytical precedent set by *League to Save Lake Tahoe Mountain etc. v. County of Placer* (2022) (75 Cal.App.5th 63, 164-168).

According to Appendix F of the CEQA Guidelines, the goal of conserving energy is translated to include decreasing overall per capita energy consumption; decreasing reliance on fossil fuels such as coal, natural gas, and oil; and increasing reliance on renewable energy sources. In *League to Save Lake Tahoe Mountain etc. v. County of Placer* (2022) (75 Cal.App.5th 63, 164-168), the Appellate Court concluded that the analysis of wasteful, inefficient, and unnecessary energy consumption was not adequate because it did not consider whether additional renewable energy features could be added to the project.

The proposed project would be considered to result in a potentially significant impact if it would result in wasteful, inefficient, or unnecessary consumption of energy resources. Considering the guidance provided by Appendix F of the CEQA Guidelines and the Appellate Court decision in *League to Save Lake Tahoe Mountain etc. v. County of Placer* (2022) (75 Cal.App.5th 63, 164-168), the proposed project would be considered to result in wasteful, inefficient, or unnecessary consumption of energy resources if it would conflict with the following energy conservation goals:

- Decreasing overall per capita energy consumption;
- Decreasing reliance on fossil fuels such as coal, natural gas, or oil; and
- Increasing reliance on renewable energy sources.

The following is a summary of the assumptions used for the City's energy analysis:

- **On-Road Fuel Use.** Fuel use is analyzed based on Origin-Destination Method VMT provided by GHD (see Chapter 5.16, *Transportation*). The VMT provided includes the full trip length for land uses in the City (origin-destination approach) and a 50 percent reduction in the trip length for external-internal/internal-external trips, consistent with the recommendations of CARB's Regional Targets Advisory Committee. Due to varying conditions that influence fuel consumption, such as vehicle fuel type and fuel economy, VMT generation is utilized herein as a performance metric to measure anticipated fuel consumption during existing (2020) and future (2045) conditions.
- **Energy (Natural Gas and Electricity).** Energy consumption associated with natural gas use for residential and nonresidential land uses in the City were interpolated based on data provided by PG&E, and electricity was interpolated based on data provided by REU (Appendix 5.3-1). Year 2050 forecasts are adjusted for increases in population and employment in the City.

5.6.4 PROPOSED GENERAL PLAN POLICIES

The following are relevant policies of the Redding General Plan Update, which may reduce energy impacts as a result of implementation of the proposed project.

Transportation Element

- **Policy T1A:** Strive to ensure that where complete street infrastructure is constructed, it improves transportation choices for pedestrians, bicyclists, motorists, and public transportation riders and that users of all ages and abilities are considered in the planning, design, approval, construction, and operation of new streets, and the alteration and maintenance phases of existing streets by:
    - Including infrastructure that promotes a safe means of travel for all users along the right of way, such as sidewalks, shared-use paths, bicycle lanes (including protected bicycle lanes or buffered bicycle lanes where feasible) or paved shoulders.

- Providing pedestrian and bike connections from developments to adjacent main streets, open space areas, parks, transit stops, schools, commercial and employment centers, and other activity centers as opportunities arise.
- Designing new development to incorporate street connectivity for all users.
- Including new or alteration of existing infrastructure that facilitates safe crossing of the right-of-way for all users, such as: accessible curb ramps, high-visibility crosswalks, pedestrian refuge islands, smaller curb radii, corner bulb-outs, pedestrian signals, and bicycle detection at traffic signals where warranted.
- Incorporating features that improve the comfort, convenience, and safety of users such as pedestrian-oriented/wayfinding signs, pedestrian-scale lighting, benches and other street furniture, bicycle parking facilities, comfortable and attractive public transportation stops and facilities, street trees, landscape, and planting strips.

- **Policy T1B:** Seek funding to establish a systematic complete street retrofit program that will effectively alter existing appropriately identified streets into complete streets.
- **Policy T1C:** Update the Redding Active Transportation Plan every four to seven years to ensure successful implementation of the City's planned bicycle and pedestrian networks by undertaking the following:
  - Work to identify and prioritize physical improvements that would make bicycle and pedestrian travel safer along current key bicycling and walking routes.
  - Pursue an implementation strategy to construct needed improvements.
  - Undertake improvements as part of street projects where reasonable and feasible.
- **Policy T1D:** Consider requiring that development projects dedicate street rights-of-way and construct both on- and off-site improvements as appropriate to provide access and street connectivity for users of all ages and abilities, mitigate the effects of vehicle miles traveled (VMT) attributable to the project, and not degrade peak-hour LOS below the following adopted thresholds nor conflict with multi-modal performance standards. The City Council may, at its sole discretion, determine that the degradation of LOS is appropriate given the extraordinary circumstances of the project being proposed. The traffic analysis used to establish mitigation or improvement measures shall be based on the regional travel demand model or other City-approved methods. At the option of the City and as may be provided by City ordinance, improvements may be deferred by the City upon approval of a Deferred Improvement Plan which identifies improvements needed, costs, funding sources, and other pertinent data required by the City.
- **Policy T1E:** Strive to complete the planned build-out street network as illustrated on the Circulation Plan map, and ensure that the accompanying design standards, programs, and procedures include complete streets implementation as a main focus by undertaking the following measures.

- Review as necessary the City's design guidelines and standard cross-sections for streets, intersections (including roundabouts and traffic circles), pedestrian facilities, bicycle facilities, and transit facilities and revise as necessary to be consistent with National Association of City Transportation Officials (NACTO) and its guidelines regarding complete streets.
- Consider establishing performance measures to evaluate multimodal travel conditions for pedestrians and bicyclists, such as Level of Traffic Stress (LTS) criteria, to guide development of the street network.
- Collaborate with the Redding Area Bus Authority (RABA) and other service providers to incorporate infrastructure to assist users in employing multiple modes of transportation in a single trip in order to increase transportation access and flexibility. Examples include but are not limited to, provisions for bicycle and wheelchair access on public transportation, secure bicycle racks at transit stops, and public transportation access to trails and recreational locations.
- Consider the development of a Complete Streets Design Manual that can serve as a guide for public and private development projects that propose new streets or modifications of existing streets.

- Policy T1F: Strive to complete the Planned Pedestrian Improvements identified in the Redding Active Transportation Plan, and support the provision of an attractive, safe, and continuous system of sidewalks and other pedestrian facilities by undertaking the following measures where appropriate:
  - Seek funding for the design and/or, construction, of the sidewalk, path, and crossing improvements identified in the Active Transportation Plan. Focus on securing funds to match federal and State grant program opportunities.
  - Where feasible and appropriate, seek to provide pedestrian-oriented features, such as benches, enhanced landscape, and trash receptacles, in commercial areas, including the Downtown and Redding Riverfront Specific Plan areas.
  - Require new developments provide sidewalks or other pedestrian-dedicated facilities on both sides of new public streets contained within the development. Exceptions may be appropriate where the topography is difficult, proposed lots are of a rural or semi-rural nature, or where the development plan illustrates that pedestrians will be accommodated by alternative means.
  - Work with local organizations and neighborhood groups to develop a plan to determine where curbs, gutters, and sidewalks are needed on unimproved local streets and how to pay for the improvements; establishing sidewalk continuity wherever feasible is a priority.
  - Pursue funding for the continued replacement and repair of sidewalks that have deteriorated due to age and tree-root invasion.

- Work to develop and seek funding to implement a program to identify, prioritize, and construct the retrofitting of existing intersections that do not currently have accessibility ramps and accommodations at the street corners.
- Strive to ensure that all new or renovated pedestrian facilities be of a sufficient width to ensure pedestrian comfort and safety and to accommodate the special needs of persons with physical disabilities wherever feasible.

- Policy T1G: Strive to complete the Build-Out Bikeway Network identified in the Redding Active Transportation Plan, and support related measures to make bicycling a safe, accessible, comfortable, and sustainable transportation mode by:
  - Working to secure funding to construct the bikeway network improvements identified in the Active Transportation Plan.
  - Pursuing the installation of protected bicycle lanes (Class IV separated bikeway treatments) where feasible on arterial streets.
  - Seeking to incorporate appropriate bicycle facilities in the design of interchanges, intersections, and other street-improvement/maintenance projects.
  - As funding allows, making improvements to streets, signs, and traffic signals as needed to improve bicycle travel, and keep bikeways free of overhanging shrubbery, debris, and other obstacles.
  - Supporting to the extent possible the efforts of public transit providers including the Redding Area Bus Authority (RABA) to provide bicycle racks on all buses within the system.
  - As appropriate, supporting the requirement that new development provides bicycle facilities or pay in-lieu fees based on the fair share of that development's impacts on the bikeway system and needs identified on the Comprehensive Bikeway Plan.
- Policy T1H: Strive to achieve the level of service described in this Element for motor vehicle traffic on roadway segments and at intersections during weekday peak-hours, except where achieving the LOS standard would conflict with complete streets goals and standards or the City Council determines that extraordinary circumstances exist to require deviation from the LOS standard by requiring new development to provide improvements, pay in-lieu fees and/or pay development impact fees as approved by the City Council and based on the fair share of that development's contribution of improvements needed to achieve the following peak-hour LOS standard/thresholds:
  - Level of Service "C" on all City roadways and intersections, except at those specific locations/roadway segments identified within this Element, where a LOS "D" is appropriate including the Downtown Specific Plan area, streets within the state highway system and interchanges and river-crossing street corridors whose capacity is affected by adjacent intersections.

- Policy T2A: Support the provision of a connected network of low-stress walk and bikeways to connect major activity centers, including the provision of appropriate low-stress walk and bikeway access to Downtown Redding and the Redding Transit Center by considering implementation of the measures identified below. Low-stress bikeways should generally consist of separated bikeways (Class IV bikeways), sometimes referred to as “protected bicycle lanes”, on arterial or collector streets; bicycle boulevard treatments on local streets; or multi-use paths.
    - Work to identify and prioritize routes for a connected network of low-stress walk and bikeways, identifying barriers to low-stress travel with plans to address them. and Incorporate maps and plans into future updates of the Redding Active Transportation Plan. Pursue funding to construct the network.
    - Work to identify networks for walking and biking to connect with key travel nodes, and activity centers, including transit nodes and strategic growth areas. Consider accessibility to all neighborhoods and housing, striving to ensure access to a connected network of low-stress walk and bikeways within one-half-mile radius to all residents. Key travel nodes and activity nodes include Downtown Redding, Redding Transit Center, transit nodes (where multiple transit lines intersect), schools, City Hall, County Government Center, Shasta College, Simpson University, major parks and recreation centers, employment centers/business parks, neighborhood commercial nodes and regional commercial centers.
    - As funding permits, develop design standards for the low-stress walk and bikeway network that establishes a "kit of parts" set of standards for the three low-stress facility types: 1) separated bike lanes on arterial and collector streets, 2) neighborhood greenways, and 3) off-street paths and trails. An implementation strategy to construct needed improvements to the network should be established.
    - Work with the Cities of Anderson and Shasta Lake, and Shasta County to identify low-stress walk, bike routes that connect to the downtown core strategic-growth areas of the cities and towns of Shasta County.
    - Support to the extent feasible and as funding allows operation of amenities and programming to enable daily transportation by people biking and walking, including bikeshare services, the Shasta Bike Depot at the Redding Transit Center, secure bike parking, short-term bike parking racks, and similar secure bike parking and e-bike charging stations to meet existing and future needs for the encouragement and education of those who travel via walking or biking.
    - Work with the local school districts to develop specific transportation plans associated with schools and the surrounding neighborhoods to address conflicts with; traffic, pedestrian movements, safety during school hours, and bicycle facilities to and from schools. This may include a plan to implement slower speed school zones while children are present and flashing beacons to identify when these school zones are in effect.

- Policy T2B: Support provision of continuous greenbelt trails within and between parks, and along the Sacramento River connecting Redding to the City of Shasta Lake, the City of Anderson, and Cottonwood. Efforts may include:
    - Striving to provide trail access to all residents within a one-half mile radius to all residents and connect trails to all parks which should be equipped with safe and secure bike parking and electric charging stations for bikes and vehicles.
    - Striving to connect trails to all schools, parks, and other large recreation destinations such as the Sacramento River Parkway, Downtown, the Civic Auditorium, Waterworks Park, and the YMCA, as well as civic buildings such as the Courthouse, Library, Shasta County government building on Court Street, and City Hall.
- Policy T3A: Support the provision of enhanced transit service that is timely, cost-effective, responsive to growth patterns, and meet the diverse needs of existing and future transit demand. by:
    - Working with the Shasta Regional Transportation Agency (SRTA) and public transit providers including the Redding Area Bus Authority (RABA) on an ongoing basis to plan and implement additional public transit services.
    - Supporting to the extent feasible and as funding allows the continuation and expansion of private commercial or nonprofit bus operations to provide additional regional transit opportunities for residents.
    - Promoting coordination of public transit, intercity rail, bicycle share program, intercity bus, and air transportation services to enhance the transportation options available for residents and visitors to the Redding community.
    - Supporting to the extent feasible and as funding allows provision of intercity bus service.
    - Developing policies and procedures to implement shared mobility devices to help enhance public transit options. These micro-transit shared mobility type devices could include scooters and e-bikes, but may be expanded as technology develops.
- Policy T3B: Provide physical measures to enhance transit service by considering to undertake the following:
    - Require new development to install and maintain passenger amenities at designated bus stops when relevant to accommodating project trips or mitigating VMT as appropriate.
    - Provide bus facilities along arterial streets as indicated in an applicable transit development plan. Determine the precise locations during the development plan review or at the time of major street improvement or reconstruction.
    - Work with RABA to provide safe, attractive, well-lit, comfortable, and protected waiting areas for bus passengers.

- Policy T4A: Support measures that help reduce VMT below regional averages on a "residential per capita" and "per employee" basis by:
    - Encouraging employers, colleges, and schools to provide incentives and facilities (e.g., showers) for employees and students utilizing alternatives to the single-occupant automobile, such as carpools, vanpools, buses, bicycling, and walking.
    - Encouraging employers, including government agencies, to allow telecommuting and flex time and to promote staggered shifts or base work hours that do not coincide with peak-period traffic to reduce peak-hour trips.
- Policy T4B: Prioritize infill and mixed-use development, and encourage new development in close proximity to existing employment, housing, schools, commercial centers, and other services and amenities as addressed in the Community Development and Design Element.
- Policy T6A: Strive to retain alleys in the Downtown area to create shared spaces for bicycling and walking, and convenient service access, to local businesses.
- Policy T6B: Work to identify and seek funding for motorized and low-stress non-motorized transportation linkages to connect Downtown Redding. Destinations outside of Downtown that would require additional connections include Park Marina, Turtle Bay, and Redding Civic Auditorium areas.
- Policy T7A: Strive to maintain adequate on-street and public off- street parking areas, including electric vehicle charging stations, to meet ongoing parking demands by considering the following measures:
    - Pursue funding options and strategies for the construction and maintenance of shared parking facilities/structures Downtown.
    - Seek funding to provide electric charging stations at parking lots and rest areas for cars, trucks, and bicycles throughout the City.
    - Encourage and facilitate the provision of electric-vehicle charging facilities in new parking lots and multi-family residential developments.
    - Strive to install secure bicycle parking with electric charging stations and large enough for cargo bikes in the Downtown area and at City parks, civic buildings, and other community centers.
- Policy T7B: Endeavor to ensure that required parking provisions for private development supports efforts to encourage multimodal travel and reduce VMT by:
    - Pursuing maximum and minimum standards for automobile parking spaces in transit corridors and Downtown to promote use of alternate modes of travel as may be appropriate.

- Pursuing minimum standards for bicycle parking, including both long-term and short-term bicycle parking spaces.

Natural Resources Element

- **Policy NR11A:** Strive to offer technical assistance and recommendations to customers who seek such analysis as appropriate to help identify opportunities to reduce energy consumption and increase the adoption of electrification measures. Strive to provide information to customers about modifying energy consumption to mitigate the City's peak electric demand.
- **Policy NR11B:** Continue to utilize the California Green Building Standards Code in commercial and residential construction to address energy and other resource efficiencies.
- **Policy NR11C:** Continue to evaluate and implement as appropriate, electrification and other new energy resource technologies that reduce environmental impacts from fossil fuel consumption and energy usage.
- **Policy NR11D:** Continue to invest in and promote public electric vehicle charging infrastructure through the application of manageable planning and development policies to encourage a robust charging network at various locations and facilities throughout the community. Support third-party investments in the development of charging infrastructure in multiple-family housing developments and in those areas that increase traffic to the City for purposes of shopping, entertainment, work, and/ or similar purposes.
- **Policy NR11E:** Continue to support the increased adoption of building and transportation electrification technologies by implementing standard policies and procedures that encourage investments in public and private infrastructure.
- **Policy NR11F:** Consider the use of integrated resource planning processes to establish a long-term Energy Resource Plan that meets or exceeds the state's clean energy mandates while balancing reliability and affordability, and continually assessing the effectiveness and efficiency of the Utility's resource plan.

Community Health Wellness and Environmental Justice Element

- **Policy EJ4D:** Consider amending development codes and/or incentivizing the use of cool roof technologies, porous pavements, and energy and water-efficient residential and commercial building upgrades.
- **Policy EJ5F:** Increase citizen awareness and implementation of water and energy efficiency, weatherization, disaster risk reduction, climate change adaptation and mitigation, wildfire smoke protection, and safety from extreme heat through public engagement, incentives, and assistance with a special focus on underserved residents and areas with vulnerable populations.

- Policy EJ6C: Periodically evaluate public facilities for health hazards and ensure their safety and resiliency. Locate new public facilities in an equitable manner that strive to ensure that they are well-designed, energy efficient, and compatible with adjacent land uses.

Community Development and Design Element

- Policy CDD4C: Continue to develop along the riverfront:
  - Public access areas as additional lands are made available
  - Active and passive public recreational facilities as discussed in the Recreation Element
  - Active engagement with natural areas through trails, wildlife observation, and educational displays while limiting impact to existing wildlife habitat and other developed properties
  - Pedestrian and bicycle trails and connections to schools, recreational facilities and other major public and nonprofit/institutional owned open-space areas
  - A robust trail network system requiring developments located along planned trail routes to dedicate trails and trail easements through private donations or by public purchase, as appropriate
- Policy CDD4K: Identify opportunity areas along the river and creek corridors and strive to incorporate specific uses to create a public realm by promoting safe pedestrian and bicycle access, establishing new trail connections, and providing parks and recreational opportunities, visitor friendly amenities, visual resources, and ample public access to the river without compromising on the security and privacy of adjacent residences.
- Policy CDD7B: Link special community facilities, parks, and other uses to and through Downtown by establishing clear, accessible, convenient, and attractive pedestrian, bike, and automobile connections where appropriate and feasible.
- Policy CDD10D: Encourage development in the City to include inviting, attractive, accessible, and walkable urban mixed-use neighborhoods combining residential, commercial, recreational, open space, and employment to maximize the use of underused urban lots.
- Policy CDD10I: Provide safe and comprehensive transportation facilities with appropriate accessibility standards, consistent with approved transit plans and policies. Pursue incorporation of bicycle and pedestrian routes, public transit stops, and bus shelters into the design of new developments and redevelopment of older projects to help residents access services, commerce, employment, education, and recreation consistent with approved transit plans and policies.
- Policy CDD11A: Encourage developers to create new residential developments in infill priority areas that are available to a broad segment of the community. The developments should be pedestrian and bicycle friendly, to make efficient use of available infrastructure and at densities that will help facilitate the provision and use of public transit where it is available.

- Policy CDD11E: Facilitate to the extent feasible, the construction of new affordable housing units that are within walking distance to transit, everyday services, schools, and employment centers.
- Policy CDD14C: Strive to facilitate and promote the development of commercial mixed-use centers at strategic locations that are walkable and/or bikeable and well connected by transit to enhance community access.
- Policy CDD14D: Consider designating commercial-zoned land as mixed-use, provided it would not change or impact the existing primary uses, and when doing so, to facilitate the following:
    - Provide community facilities for residents with diverse needs.
    - Enhance the existing use.
    - Provide pedestrian and bicycle connections.
    - Provide housing opportunities.

5.6.5 IMPACT DISCUSSION

ENE-1:	Implementation of the General Plan Update would not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources. [Threshold E-1]

Short-Term Construction Impacts

Construction of development projects facilitated by the General Plan Update would create temporary demands for electricity. Natural gas is not generally required to power construction equipment, and therefore is not anticipated during construction phases. Electricity use would fluctuate according to the phase of construction. Additionally, it is anticipated that most electric-powered construction equipment would be hand tools (e.g., power drills, table saws, compressors) and lighting, which would result in minimal electricity usage during construction activities.

Construction of development projects facilitated by the General Plan Update would also temporarily increase demands for energy associated with transportation. Transportation energy use depends on the type and number of trips, VMT, fuel efficiency of vehicles, and travel mode. Energy use during construction would come from the transport and use of construction equipment, delivery vehicles and haul trucks, and construction employee vehicles that would use diesel fuel or gasoline. The use of energy resources by these vehicles would fluctuate according to the phase of construction and would be temporary. It is anticipated that most off-road construction equipment, such as those used during demolition and grading, would be gas or diesel powered. In addition, all operation of construction equipment would cease upon completion of project construction.

Furthermore, the construction contractors would minimize nonessential idling of construction equipment during construction in accordance with the California Code of Regulations Title 13, Article 4.8, Chapter 9, Section 2449. Such required practices would limit wasteful and unnecessary energy consumption in development in Redding. Moreover, future development projects within the City would be similar to the construction processes of any current development projects within Redding. Therefore, the proposed project would not result in wasteful, inefficient, or unnecessary consumption of fuel use during construction.

Long-Term Impacts During Operation

Operation of new development projects accommodated under the General Plan Update would create additional demands for electricity and natural gas compared to existing conditions. Operational use of electricity and natural gas would include heating, cooling, and ventilation of buildings; water heating; operation of electrical systems; use of on-site equipment and appliances; and lighting.

Decreasing Overall Per Capita Energy Consumption

Building Electricity

Electrical service to the City is provided by REU through connections to existing off-site electrical lines and new on-site infrastructure. As shown in Table 5.6-3, *Year 2045 Forecast Electricity Consumption*, by horizon year 2045, electricity use in the City is estimated to increase by 126,814 kWh/year, or approximately 17 percent, from existing conditions. As a result, the per service population electricity consumption was estimated to increase from 4.29 kWh per person per year in 2020 to 4.30 kWh per person per year in 2045. However, the 2045 electricity consumption estimates reflect the electricity consumption rates of the existing community which is made up of a building stock that consists of varying ages and energy efficiency performances. All new development facilitated by the proposed project would be required to demonstrate compliance with the current California Building Standards Code and CALGreen and would result in reductions in electricity consumption on a per dwelling unit and per square foot basis when compared to existing development in the City. Moreover, General Plan Policies NR11A, NR11B, NR11C, NR11D, NR11E, and NR11F would serve to improve energy efficiency and reduce energy consumption in new development facilitated by the proposed project. As a result, per service population building electricity consumption is expected to decrease in 2045 compared to existing 2020 conditions.

TABLE 5.6-3 YEAR 2045 FORECAST ELECTRICITY CONSUMPTION

Source	Electricity Usage, kWh per year		
	Existing Baseline[1]	Horizon Year 2045 Forecast[2]	Net Change
Nonresidential	367,075.512	431,674.832	64,599
Residential	377,458.114	439,672.332	62,214
Total	**744,534**	**871,347**	**126,814**
Service Population	173,517	202,737	29,220
Per Service Population Annual Consumption	**4.29**	**4.30**	**0.01**

[1] Electricity usage is provided by REU.

[2] Residential energy and nonresidential energy forecasts are adjusted for increases in housing and employment, respectively, in the city and do not account for reductions due to increase in energy efficiency from compliance with the Building Energy Efficiency Standards and CALGreen.

Building Natural Gas and Propane

As shown in Table 5.6-4, *Year 2045 Forecast Natural Gas and Propane Consumption,* existing annual natural gas and propane use in the City totals 15,958,219 therms and 140,647 million British thermal units (MMBTU), respectively. By 2045, natural gas use in the City would increase by 2,661,553 therms annually, or approximately 17 percent, from existing conditions to a total of 18,619,771 therms per year. By 2045, propane use in the City would increase by 23,182 MMBTU annually, or approximately 16 percent, from existing conditions to a total of 163,829 MMBTU per year. As a result, the per service population natural gas consumption was estimated to decrease from 91.97 therms per person per year in 2020 to 91.84 therms per person per year in 2045 for natural gas. Propane, however, is estimated to remain relatively constant between 2020 and 2045 at approximately 0.81 MMBTU per person per year. Similar to electricity consumption, all new development facilitated by the proposed project would be required to demonstrate compliance with the current California Building Standards Code and CALGreen and would result in reductions in heating fuel (i.e., natural gas or propane) consumption on a per dwelling unit and per square foot basis when compared to existing development in the City. Moreover, General Plan Policies NR11A, NR11B, NR11C, NR11D, NR11E, and NR11F would serve to improve energy efficiency and reduce energy consumption in new development facilitated by the proposed project. As a result, per service population heating fuel consumption is expected to decrease in 2045 compared to existing 2020 conditions.

TABLE 5.6-4 YEAR 2045 FORECAST NATURAL GAS AND PROPANE CONSUMPTION

Source	Natural Gas Usage, Therms per year		
	Existing Baseline[1]	Horizon Year 2045 Forecast[2]	Net Change
Nonresidential	2,800,523	3,293,369	492,846
Residential	13,157,696	15,326,402	2,168,706
Total	**15,958,219**	**18,619,771**	**2,661,553**
Service Population	173,517	202,737	29,220
Per Service Population Annual Consumption	**91.97**	**91.84**	**-0.13**
Propane Usage, MMBTU per year[3]			
Residential	140,647	163,829	23,182
Service Population	173,517	202,737	29,220
Per Service Population Annual Consumption	**0.81**	**0.81**	**0.01**

1 Electricity usage is provided by REU.

2 Residential energy and nonresidential energy forecasts are adjusted for increases in housing and employment, respectively, in the city and do not account for reductions due to increase in energy efficiency from compliance with the Building Energy Efficiency Standards and CALGreen.

3. Propane use is approximated for residential uses only.

Transportation Energy

The growth accommodated under the General Plan Update would consume transportation energy from the use of motor vehicles (e.g., gasoline, diesel, compressed natural gas, electricity). As shown in Table 5.16-3, *Redding 2020 and 2045 VMT Summary*, of Chapter 5.16, *Transportation*, implementation of the proposed project would increase daily VMT from 1,451,321 in 2020 to 2,106,149 vehicle miles per day in 2045 in the City, or about 69 percent. Service population, which is the sum of employees and residents in the City of Redding and Sphere of Influence (SOI), would also increase under the proposed project. To identify the service population for the City and SOI, the existing and forecasted dwelling units were multiplied by the City's average persons per household rate of 2.41 and combined with the employment estimates provided by GHD (2022) and contained on Page 1 of Appendix 5.3-1. As shown therein, the service population for the City and SOI would increase from approximately 173,517 people to 202,737 people, or an increase of approximately 17 percent. As a result, per person daily VMT would increase from approximately 6.64 miles traveled to approximately 10.39 miles traveled daily.

As previously stated under Section 5.6.3, *Methodology*, due to varying conditions that influence fuel consumption, such as vehicle fuel type and fuel economy, VMT generation is utilized herein as a performance metric to measure anticipated fuel consumption during existing (2020) and future (2045) conditions. At the programmatic level, it is speculative to discuss the specific types of vehicles and fuels that would be used and consumed during operation of the proposed project.

As identified, the proposed project would result in greater daily per person VMT under future (2045) conditions than under existing (2020) conditions. Nonetheless, the proposed project is also anticipated to result in the incorporation of areas in the City's Sphere of Influence, resulting in future residents and

employees needing to drive farther distances to reach existing and future businesses and residences. In addition, the average vehicle fuel economy would improve between 2020 and 2045 as vehicle manufacturers comply with CAFE standards and other fuel economy standards, resulting in lower transportation energy consumption per mile traveled. Therefore, while overall and per person VMT would increase as a result of the proposed project, it is anticipated that per person transportation energy consumed would decrease over time as vehicles' fuel efficiency improves.

Decreasing Reliance on Fossil Fuels

The proposed project would be considered to conflict with this criterion if it did not take steps to decrease the reliance on fossil fuels. As discussed in Chapter 5.8, *Greenhouse Gas Emissions*, individual development projects accommodated by the proposed project would be required to comply with the California Building Standards Code (CBSC) that is current at the time of their building application submittal. As the current CBSC is the 2022 CBSC, individual development projects going through the application process today would result in greater energy efficiency than the current performance of existing structures in the City. In addition, the 2022 CBSC currently requires a variety of development projects, that do not meet specific exceptions or exemptions of the Code, to include rooftop photovoltaic (PV) systems and battery energy storage (BES) infrastructure. Specifically, the 2022 CBSC requires new single-family residences, multi-family residences no greater than 3 stories, and many nonresidential land uses no greater than 3 stories to include rooftop PV systems and multi-family and nonresidential land uses that require PV systems to also have BES infrastructure.

In addition to improvements in energy efficiency and on-site renewable energy generation and energy storage requirements, SB 100 requires that LSEs incrementally increase their energy procurement sources to include eligible renewable and carbon-free sources. By January 1, 2046, all LSEs in California are required to source 100 percent of their in-state electricity sales from renewable and carbon-free sources. As a result, individual development projects accommodated by the proposed project would improve their energy efficiency through compliance with the CBSC current at the time of their building application submittal and LSEs would supply electricity that is increasingly sourced from carbon-free sources. Moreover, consistent with Executive Order N-79-20, vehicles utilized by future residents and employees accommodated by the proposed project are expected to consist more of EVs than what is experienced under existing conditions. In addition, the proposed project includes goals and policies that are intended to reduce the use of nonrenewable energy. Specifically, Policies NR11A and NR11C encourages the reduction of nonrenewable energy use and the development and utilization of new energy sources and building electrification.

Increasing Reliance on Renewable Energy

As previously discussed, the 2022 CBSC currently requires a variety of development projects that do not meet specific exceptions or exemptions to include rooftop PV systems and BES infrastructure. Specifically, the 2022 CBSC requires new single-family residences, multi-family residences no greater than 3 stories, and many nonresidential land uses no greater than 3 stories to include rooftop PV systems and multi-family and nonresidential land uses that require PV systems to also have BES infrastructure. In addition, it is anticipated

that each new code cycle for the CBSC improves on the last one and requires higher performance for energy efficiency and incorporates additional requirements for on-site renewable energy and EV charging infrastructure. Future development projects accommodated by the proposed project would therefore result in a net increase from existing conditions in on-site PV electricity generation and EV charging stations and associated infrastructure, further supporting and accelerating the adoption of EVs and the use of renewable energy in future years.

Similarly, LSEs that serve future development projects accommodated by the proposed project, such as REU, would be required to incrementally increase their energy procurement sources to include eligible renewable and carbon-free sources through 2045 under SB 100. As a result, electricity consumed by individual development projects under the proposed project as well as existing structures in the City would rely more on renewable and carbon-free sources for electricity in future years than is experienced under existing conditions. Moreover, the proposed project includes various policies that are intended to support the use of renewable energy beyond compliance with the CBSC, including creating a walkable urban environment to encourage future residents and employees in the City to use active modes of transportation instead of motorized vehicles. Policies that support the use of renewable energy resources are listed below:

- Policy T1C: Update the Redding Active Transportation Plan every four to seven years to ensure successful implementation of the City's planned bicycle and pedestrian networks by undertaking the following:
    - Work to identify and prioritize physical improvements that would make bicycle and pedestrian travel safer along current key bicycling and walking routes.
    - Pursue an implementation strategy to construct needed improvements.
- Policy T1D: Consider requiring that development projects dedicate street rights-of-way and construct both on- and off-site improvements as appropriate to provide access and street connectivity for users of all ages and abilities, mitigate the effects of vehicle miles traveled (VMT) attributable to the project, and not degrade peak-hour LOS below the following adopted thresholds nor conflict with multi-modal performance standards. The City Council may, at its sole discretion, determine that the degradation of LOS is appropriate given the extraordinary circumstances of the project being proposed. The traffic analysis used to establish mitigation or improvement measures shall be based on the regional travel demand model or other City-approved methods. At the option of the City and as may be provided by City ordinance, improvements may be deferred by the City upon approval of a Deferred Improvement Plan which identifies improvements needed, costs, funding sources, and other pertinent data required by the City.
- Policy T2A: Support the provision of a connected network of low-stress walk and bikeways to connect major activity centers, including the provision of appropriate low-stress walk and bikeway access to Downtown Redding and the Redding Transit Center by considering implementation of the measures identified below. Low-stress bikeways should generally consist of separated bikeways (Class IV bikeways), sometimes referred to as "protected bicycle lanes", on arterial or collector

streets; bicycle boulevard treatments on local streets; or multi-use paths. (See Section 5.6.4, *Proposed General Plan Policies*, for the full policy.)

- Policy T6A: Strive to retain alleys in the Downtown area to create shared spaces for bicycling and walking, and convenient service access, to local businesses.
- Policy T7A: Strive to maintain adequate on-street and public off- street parking areas, including electric vehicle charging stations, to meet ongoing parking demands by considering the following measures:
    - Pursue funding options and strategies for the construction and maintenance of shared parking facilities/structures Downtown.
    - Seek funding to provide electric charging stations at parking lots and rest areas for cars, trucks, and bicycles throughout the City.
    - Encourage and facilitate the provision of electric-vehicle charging facilities in new parking lots and multi-family residential developments.
    - Strive to install secure bicycle parking with electric charging stations and large enough for cargo bikes in the Downtown area and at City parks, civic buildings, and other community centers.
- Policy NR11A: Strive to offer technical assistance and recommendations to customers who seek such analysis as appropriate to help identify opportunities to reduce energy consumption and increase the adoption of electrification measures. Strive to provide information to customers about modifying energy consumption to mitigate the City's peak electric demand.
- Policy NR11C: Continue to evaluate and implement as appropriate, electrification and other new energy resource technologies that reduce environmental impacts from fossil fuel consumption and energy usage.
- Policy CDD10I: Provide safe and comprehensive transportation facilities with appropriate accessibility standards, consistent with approved transit plans and policies. Integrate bicycle and pedestrian routes, public transit stops, and bus shelters into the design of new developments and redevelopment of older projects to help residents access services, commerce, employment, education, and recreation consistent with approved transit plans and policies.
- Policy CDD14C: Stive to facilitate and promote the development of commercial mixed-use centers at strategic locations that are walkable and/or bikeable and well connected by transit to enhance community access.
- Policy CDD4C: Continue to develop along the riverfront:
    - Public access areas as additional lands are made available
    - Active and passive public recreational facilities as discussed in the Recreation Element

- Active engagement with natural areas through trails, wildlife observation, and educational displays while limiting impact to existing wildlife habitat and other developed properties
- Pedestrian and bicycle trails and connections to schools, recreational facilities and other major public and nonprofit/institutional owned open-space areas
- A robust trail network system requiring developments located along planned trail routes to dedicate trails and trail easements through private donations or by public purchase, as appropriate.

Summary

Compliance with federal, State, and local regulations (e.g., Building Energy Efficiency Standards, CALGreen, Renewable Portfolio Standards, and CAFE standards) will increase building energy efficiency and vehicle fuel efficiency and reduce building energy demand and transportation-related fuel usage. Additionally, the General Plan Update includes policies related to land use and transportation planning and design, energy efficiency, public and active transit, and renewable energy generation that will contribute to minimizing building and transportation-related energy demands overall and demands on nonrenewable sources of energy. Implementation of proposed policies under the General Plan Update in conjunction with and complementary to regulatory requirements, will ensure that energy demand associated with growth under the General Plan Update would not be inefficient, wasteful, or unnecessary. Therefore, energy impacts associated with implementation and operation of land uses accommodated under the General Plan Update would be less than significant.

Level of Significance Before Mitigation: ENE-1 would be less than significant.

Mitigation Measures

No mitigation measures are required.

ENE-2: The project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. [Threshold E-2]

The State's electricity grid is transitioning to renewable energy under California's RPS Program. Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. As stated, the RPS goals have been updated since adoption of SB 1078 in 2002. In general, California has RPS requirements of 33 percent renewable energy by 2020 (SB X1-2), 40 percent by 2024 (SB 350), 50 percent by 2026 (SB 100), 60 percent by 2030 (SB 100), and 100 percent by 2045 (SB 100). SB 100 also establishes RPS requirements for publicly owned utilities that consist of 44 percent renewable energy by 2024, 52 percent by 2027, and 60 percent by 2030. The statewide RPS requirements do not directly apply to individual development projects, but to utilities and energy providers such as REU, whose compliance with RPS requirements would contribute to the State of California objective of transitioning to renewable energy. The

land uses accommodated under the General Plan Update would comply with the current and future iterations of the Building Energy Efficiency Standards and CALGreen.

Furthermore, as previously discussed, the General Plan Update includes policies, such as NR11A and NR11C, which would support the statewide goal of transitioning the electricity grid to renewable sources. Moreover, the General Plan Update includes policies, such as those contained in the Transportation Element (e.g., T1C, T1D, T2A, T6A, T7A) and Community Development and Design Element (e.g., CDD10I, CDD14C, CDD4C) that would encourage active modes of transportation and reduce future residents' and employees' dependence on motorized vehicles. Therefore, implementation of the General Plan Update would not conflict with or obstruct implementation of California's RPS program, and this impact would be less than significant.

Level of Significance Before Mitigation: ENE-2 would be less than significant.

Mitigation Measures

No mitigation measures are required.

ENE-3:	The project would not require or result in the relocation or construction of new or expanded energy facilities, the construction or relocation of which could cause significant environmental effects. [Threshold E-3]

The proposed project would accommodate future growth in the City that would require new or expanded energy facilities; however, the proposed project would not directly result in the construction of new or expanded energy facilities. As discussed in Section 5.6.1.1, *Regulatory Framework*, the IRP is the principal planning document that identifies CAISO's forecasts for electricity demand, supply, and transmission needs over a 20-year planning horizon, as well as its strategies for integrating renewable energy resources and other grid services to meet those needs. These forecasts take into account the expected growth in population and development in corresponding LSE's service areas, such as the population and development envisioned under the proposed project within REU's service area.

The IRP is developed in collaboration with LSEs, regulators, and other stakeholders, and is updated periodically to reflect changes in the energy landscape and evolving policy goals (CEC 2020). Overall, the IRP plays a critical role in ensuring the reliability and resilience of California's electricity grid as the state continues to transition to a cleaner and more sustainable energy system. When an LSE identifies that new or expanded energy facilities are needed to accommodate the population and development growth in its service area, those proposed improvements are reviewed to identify consistency with local, State, and federal regulatory compliance as well as potential environmental effects that may result. For on-site systems, such as rooftop solar, the review would be conducted by the applicable lead agency as part of that individual development project. For energy infrastructure improvements that involve the construction of new or expanded existing transmission lines, generation systems, or BES facilities, separate from an individual development project, the review would be conducted by the CPUC and/or CEC depending on the

type of facility. The CEC typically acts as a CEQA lead or responsible agency for energy infrastructure improvements involving generation or BES systems, whereas the CPUC typically acts as a CEQA lead or responsible agency for improvements involving transmission lines or other distribution infrastructure.

Once the new or expanded energy facility is reviewed and approved, incorporating any necessary and appropriate mitigation, it is assigned a point of interconnection on the grid, and its output is added to the IRP as a resource that can provide electricity and other grid services, such as frequency regulation or ramping support. The facility is then dispatched by CAISO based on its bids into the day-ahead and real-time electricity markets, and its output is used to help balance supply and demand on the grid in real-time. CAISO operates a wholesale electricity market in which LSEs can participate by offering to buy or sell electricity and other grid services, such as demand response or energy storage. This market helps to ensure that the electricity system operates efficiently and reliably by providing economic incentives for electricity providers to use their resources effectively.

In addition to the IRP, which principally governs the planning efforts for new and expanded electricity and natural gas facilities, the CPUC in December 2022 adopted a new framework to comprehensively review utility natural gas infrastructure investments in order to help the State transition away from natural-gas fueled technologies and avoid stranded assets in the gas system. The new framework requires utilities to seek CPUC approval of natural gas infrastructure projects of $75 million or more or those with significant air quality impacts. The new framework is intended to capture natural gas projects likely to have the most substantial community and environmental impacts and to require demonstrate project compliance with CEQA (CPUC 2022). Therefore, while the proposed project may result in increased energy resource demand by facilitating population and development growth in the City, and subsequently in REU's service area, any new or expanded facilities needed as a result of meeting that increased demand would undergo its own review to mitigate potentially significant environmental effects and demonstrate compliance with regulatory requirements. As such, the proposed project would not result in new or expanded energy facilities which may cause significant environmental effects. This impact would be less than significant.

Level of Significance Before Mitigation: ENE-3 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.6.6 CUMULATIVE IMPACTS

ENE-4	The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in less-than-significant cumulative impacts with respect to energy.

The area considered for cumulative impacts to electricity and natural gas supplies and facilities is REU and PG&E's service areas. Other projects in the REU and PG&E's service areas would be subject to existing regulations, including the CBC which requires new buildings increase energy efficiency. The proposed project includes policies to reduce energy use and measures to align with the state's goals for carbon neutrality. Cumulative impacts would be less than significant, and impacts would not be cumulatively considerable.

Level of Significance Before Mitigation: ENE-4 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.6.7 REFERENCES

California Air Resources Board (CARB). 2017, January 18. California's Advanced Clean Cars Midterm Review. https://ww2.arb.ca.gov/sites/default/files/2020-01/ACC%20MTR%20Summary_Ac.pdf.

California Building Standards Commission (CBSC). 2018, December. 2019 Building Energy Efficiency Standards for Residential and Nonresidential Buildings (Title 24, Part 6). https://www.energy.ca.gov/sites/default/files/2021-06/CEC-400-2018-020-CMF_0.pdf

_____. 2022. 2022 California Code of Regulations Title 24, Part 11. https://codes.iccsafe.org/content/CAGBC2022P2?examId=.

California Energy Commission (CEC). 2018a, May 9. Energy Commission Adopts Standards Requiring Solar Systems for New Homes, First in Nation. News release. https://www.energy.ca.gov/news/2018-05/energy-commission-adopts-standards-requiring-solar-systems-new-homes-first.

_____. 2018b. 2019 Building Energy Efficiency Standards Frequently Asked Questions. https://www.energy.ca.gov/sites/default/files/2020-03/Title_24_2019_Building_Standards_FAQ_ada.pdf.

_____. 2020, February 20. Final 2019 Integrated Energy Policy Report including Errata. Accessed April 12, 2023. https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2019-integrated-energy-policy-report.

_____. 2021. Amendments to the Building Energy Efficiency Standards (2022 Energy Code) Draft Environmental Report. CEC-400-2021-077-D

_____. 2022. California Retail Fuel Outlet Annual Reporting (CEC-A15) Results, https://www.energy.ca.gov/data-reports/energy-almanac/transportation-energy/california-retail-fuel-outlet-annual-reporting, California Energy Commission Website, accessed December 2, 2022.

California Independent System Operator (CAISO). 2022, June 14. "A golden age of energy storage". Accessed April 10, 2023. http://www.caiso.com/about/Pages/Blog/Posts/A-golden-age-of-energy-storage.aspx.

California Public Utilities Commission (CPUC). 2022, December 1. CPUC Creates New Framework to Advance California's Transition Away From Natural Gas. Accessed April 12, 2023. https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2019-integrated-energy-policy-report.

National Highway Traffic Safety Administration (NHTSA). 2022, April 1. USDOT Announces New Vehicle Fuel Economy Standards for Model Year 2024-2026. https://www.nhtsa.gov/press-releases/usdot-announces-new-vehicle-fuel-economy-standards-model-year-2024-2026.

Pacific Gas and Electric Company (PG&E). 2022, December 4 (accessed). Company Profile, PG&E Website, https://www.pge.com/en_US/about-pge/company-information/profile/profile.page.

Redding Electric Utility (REU). 2021. 2021 Power Content Label. Accessed April 11, 2023. https://www.cityofredding.org/home/showpublisheddocument/28181/637995388915430000.

United States Department of Energy (USDE). 2022. Alternative Fuels Data Center: Electric Vehicle Charging Station Locations. https://afdc.energy.gov/fuels/electricity_locations.html#/analyze?region=US-CA&fuel=ELEC&ev_levels=all, United States Department of Energy Website, accessed December 5, 2022.

United States Energy Information Administration (USEIA). 2020a. Table F33: Total Energy Consumption, Price, and Expenditure Estimates, United States Energy Information Administration Website, https://www.eia.gov/state/seds/sep_fuel/html/pdf/fuel_te.pdf, accessed December 2, 2022.

_____. 2020b. Table F16: Total Petroleum Consumption Estimates, United States Energy Information Administration Website, https://www.eia.gov/state/seds/sep_fuel/html/pdf/fuel_te.pdf, accessed December 2, 2022.

United States Environmental Protection Agency (USEPA). 2022, May 12 (updated). Summary of the Energy Independence and Security Act Public Law 110-140 (2007). Accessed March 1, 2023. https://www.epa.gov/laws-regulations/summary-energy-independence-and-security-act.

This page intentionally left blank.

5.7 GEOLOGY AND SOILS

This chapter describes the regulatory framework and existing conditions in the Planning Area related to geology and soils, and the potential to impact these resources, including paleontological resources or unique geologic features.

5.7.1 ENVIRONMENTAL SETTING

5.7.1.1 REGULATORY FRAMEWORK

This section summarizes key federal, State, regional, and local regulations and programs related to geology and soils for the proposed General Plan Update.

Federal Regulations

International Building Code

The International Building Code (IBC) has been adopted throughout the United States and has been in use since 2007. The purpose of the IBC is to establish minimum regulations for building systems, including fire safety, building safety, foundation, wall and roof constructions, materials used in construction, elevators and escalators, and existing structures.

Earthquake Hazards Reduction Act

The Earthquake Hazards Reduction Act was enacted in 1997 to "reduce the risks to life and property from future earthquakes in the United States through the establishment and maintenance of an effective earthquake hazards and reduction program." To accomplish this, the act established the National Earthquake Hazard Reduction Program (NEHRP), which refined the description of agency responsibilities, program goals, and objectives. NEHRP's mission includes improved understanding, characterization, and prediction of hazards and vulnerabilities; improvement of building codes and land use practices; risk reduction through post-earthquake investigations and education; development and improvement of design and construction techniques; improvement of mitigation capacity; and accelerated application of research results. NEHRP designates the Federal Emergency Management Agency as the lead agency of the program and assigns it several planning, coordinating, and reporting responsibilities. Programs under NEHRP help inform and guide planning and building code requirements such as emergency evacuation responsibilities and seismic code standards.

Paleontological Resources Preservation Act

The federal Paleontological Resources Preservation Act of 2002 limits the collection of vertebrate fossils and other rare and scientifically significant fossils to qualified researchers who have obtained a permit from the appropriate state or federal agency. Additionally, it specifies these researchers must agree to donate any

materials recovered to recognized public institutions, where they will remain accessible to the public and other researchers. The Paleontological Resources Preservation Act incorporates key findings of a report, Fossils on Federal Land and Indian Lands, issued by the Secretary of Interior in 2000, which establishes that most vertebrate fossils and some invertebrate and plant fossils are considered rare resources (USDI 2000).

Antiquities Act of 1906

The Antiquities Act of 1906 (Public Law [P.L.] 59-209; 16 United States Code [USC] 431-433, 34 Statute 225) has been cited in past efforts to protect paleontological resources on federal lands, and requires protection of historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest on federal lands. The Antiquities Act of 1906 forbids disturbance of any object of antiquity on federal land without a permit issued by the responsible managing agency.

State Regulations

California Alquist-Priolo Earthquake Fault Zoning Act

The California Alquist-Priolo Earthquake Fault Zoning Act was signed into state law in 1972, and amended, 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. This act (or state law) was a direct result of the 1971 San Fernando Earthquake, which was associated with extensive surface fault ruptures that damaged numerous homes, commercial buildings, and other structures. The act requires the State Geologist (California Geologic Survey, CGS) to delineate regulatory zones known as "earthquake fault zones" along faults that are "sufficiently active" and "well defined" and to issue and distribute appropriate maps to all affected cities, counties, and state agencies for their use in planning and controlling new or renewed construction. Pursuant to this act and as stipulated in Section 3603(a) of the California Code of Regulations, structures for human occupancy are not permitted to be placed across the trace of an active fault. The act also prohibits structures for human occupancy within 50 feet of the trace of an active fault, unless proven by an appropriate geotechnical investigation and report that the development site is not underlain by active branches of the active fault, as stipulated in Section 3603(a) of the California Code of Regulations. Furthermore, the act requires that cities and counties withhold development permits for sites within an earthquake fault zone until geologic investigations demonstrate that the sites are not threatened by surface displacement from future faulting, as stipulated in Section 3603(d) of the California Code of Regulations.

Seismic Hazard Mapping Act

The Seismic Hazard Mapping Act was adopted by the state in 1990 for the purpose of protecting the public from the effects of fault rupture earthquake hazards, including strong ground shaking, liquefaction, seismically induced landslides, or other ground failure caused by earthquakes. The goal of the act is to minimize loss of life and property by identifying and mitigating seismic hazards. The CGS prepares and provides local governments with seismic hazard zones maps that identify areas susceptible to amplified shaking, liquefaction, earthquake-induced landslides, and other ground failures.

California Building Code

Current law states that every local agency enforcing building regulations, such as cities and counties, must adopt the provisions of the California Building Code (CBC) within 180 days of its publication. The publication date of the CBC is established by the California Building Standards Commission, and the code is under Title 24, Part 2, of the California Code of Regulations. The CBC provides minimum standards to protect property and public safety by regulating the design and construction of excavations, foundations, building frames, retaining walls, and other building elements to mitigate the effects of seismic shaking and adverse soil conditions. The CBC contains provisions for earthquake safety based on factors including occupancy type, the types of soil and rock onsite, and the strength of ground shaking with a specified probability at a site. The 2022 CBC took effect on January 1, 2023.

Requirements for Geotechnical Investigations

Requirements for geotechnical investigations are included in CBC Appendix J, Grading, Section J104; additional requirements for subdivisions requiring tentative and final maps and for other specified types of structures are in California Health and Safety Code Sections 17953 to 17955 and in CBC Section 1802. Testing of samples from subsurface investigations is required, such as from borings or test pits. Studies must be done as needed to evaluate slope stability, soil strength, position and adequacy of load-bearing soils, the effect of moisture variation on load-bearing capacity, compressibility, liquefaction, differential settlement, and expansiveness. CBC Section J106 sets forth requirements for inspection and observation during and after grading.

California Public Resources Code

The State of California Public Resources Code, Chapter 1.7, Sections 5097.5 and 30244, includes additional state level requirements for the assessment and management of paleontological resources. These statutes require reasonable mitigation of adverse impacts to paleontological resources resulting from development on state lands, define the removal of paleontological "sites" or "features" from state lands as a misdemeanor, and prohibit the removal of any paleontological "site" or "feature" from State land without permission of the jurisdictional agency. These protections apply only to State of California land.

Local Regulations

2000-2020 Redding General Plan

The following policies are included in the existing General Plan regarding geology and soils. The numbering is from the existing General Plan and therefore may not be consecutive.

Health and Safety Element

- **Goal HS-1:** Minimize the loss of life, injury, and property damage due to seismic and geologic hazards.

- **Policy HS1A:** Continue to require that new structures and alterations to existing structures comply with the seismic safety requirements of the Uniform Building Code (UBC); adopt updated provisions of the UBC related to seismic safety as they become available.
- **Policy HS1B:** Require liquefaction mitigation plans for proposed developments, including necessary infrastructure in areas determined to have a "high" liquefaction potential.
- **Policy HS1C:** Require determination of the landslide, slope-instability, and erosion potential of proposed development sites located in potential hazard areas. Utilize building setbacks, grading techniques, or appropriate measures when constructing in or near unstable areas.

Natural Resources Element

- **Goal NR1:** Minimize Soil Erosion and Sedimentation Problems Resulting from Development Activities; Improve the Quality of Stormwater Runoff.
  - **Policy NR1B:** Require development applicants to submit and receive Public Works Department approval for erosion- and sediment-control plans prior to undertaking grading activities.
  - **Policy NR1C:** Minimize soil erosion and sedimentation created during and after construction activities to the fullest extent practicable, using Best Management Practices (BMPs).
  - **Policy NR1D:** Make project monitoring and enforcement activities a priority to ensure that erosion- control measures are in place prior to the start of the rainy season and function properly and effectively:
    - Installed properly.
    - In place prior to the start of the rainy season.
    - Functional and effective.
  - **Policy NR1E:** Aggressively pursue immediate remediation when erosion damage is discovered and/or initial control measures fail.
  - **Policy NR1F:** Establish and levy fines for failure to comply with the requirements of the Grading Ordinance and/or an approved erosion- and sediment-control plan.
  - **Policy NR1G:** Support and/or jointly sponsor erosion- and sedimentation-control training and education activities in conjunction with the development community.
  - **Policy NR1H:** Ensure that employees responsible for monitoring and enforcing the City's Grading Ordinance receive adequate training regarding erosion- and sediment-control practices.

City of Redding Municipal Code

Chapter 16.02, Building Code

The City of Redding has incorporated and adopted the 2022 CBC with the City's amendments as Municipal Code Section 16.02.010. This section also outlines edits to the provisions of the CBC for development in Redding.

Chapter 16.12, Clearing, Grading Fills and Excavation

Chapter 16.12 establishes the minimum requirements for grading, clearing, and erosion and sediment control in the City of Redding. Per Section 16.12.060(C), a soil report must be prepared by a registered civil or soils engineer and must include data on the nature, distribution, and strength of existing soils; conclusions and recommendations for grading procedures; design criteria for corrective measures; or other criteria as may be necessary to support the construction. Recommendations included in the geotechnical soils report, and approved by the city engineer, must be incorporated into the grading plans or specifications.

In addition, an engineering geology report may be required by the city engineer under Section 16.12.060(C). The engineering geology report must be prepared by a registered engineering geologist. The recommendations of the engineering geology report that has been approved by the city engineer shall be incorporated into the grading plans of any given project.

Erosion control requirements for grading and construction are set forth in Municipal Code Section 16.12.060(D), and are required for any project that disturbs more than one acre of land. The plan must be professionally prepared and include a delineation and description of the measures, including best management practices (BMPs), to be undertaken to retain sediment on the site, including, but not limited to, the designs and specifications for sediment detention basins and traps and a schedule for their maintenance and upkeep. The approved plan becomes part of the approval to clear land.

Chapter 17.40, Final Maps and Parcel Maps

The purpose of Chapter 17.40 is to provide standards for the design of subdivisions in accordance with the guidance of the general plan, zoning ordinance, this title, and other applicable provisions of the Redding Municipal Code. Per Section 17.40.040(6), a preliminary soils report shall be provided. The City Engineer may require a geotechnical report with improvement plans (Chapter 17.70, Improvement Design, Plans, and Final Survey).

Chapter 17.70, Improvement Design, Plans, and Final Survey

Chapter 17.70 provides criteria for the design, plan preparation, and approval of required subdivision improvements and for final subdivision survey and monumentation. Under Section 17.70.040(E) a preliminary soils report for improvement plans.

5.7.1.2 EXISTING CONDITIONS

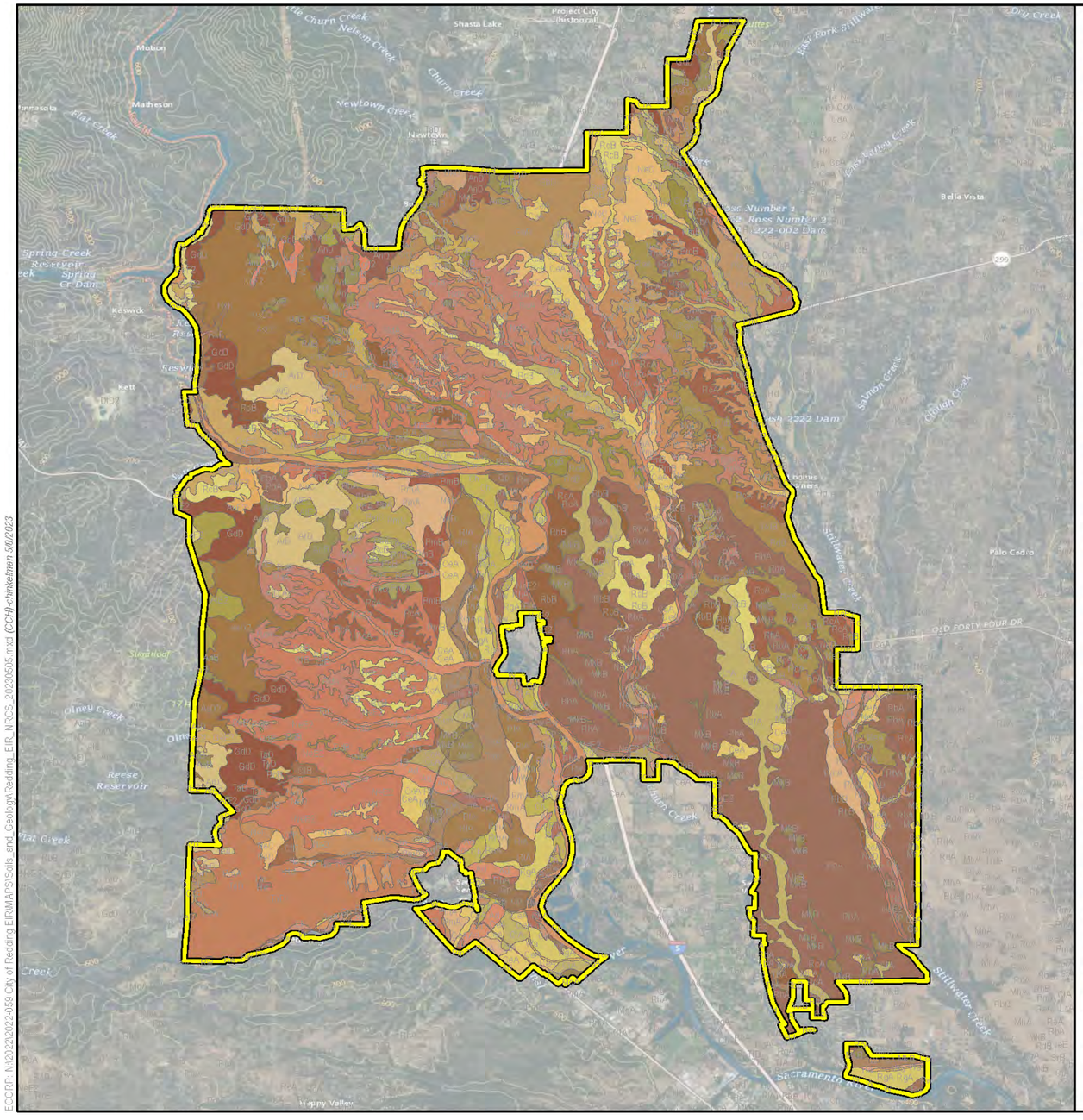
Geology

The City of Redding is near the north end of the Great Valley Geomorphic Province, which is about 400 miles long and 50 miles wide. The Great Valley geomorphic province is comprised primarily of marine sandstone, shale, and conglomerate. Rocks in this province date to the Cretaceous and Tertiary ages. Recent alluvial sediment is present along the Sacramento River and its tributaries.

The City of Redding is in the Sacramento Valley, the northerly of two large valleys comprising the Province; the San Joaquin Valley is the southerly. The northern Sacramento Valley is surrounded by the Sierra Nevada to the southeast, the Coast Ranges including the Trinity Mountains to the west, and the Cascade Range to the north and northeast (CGS 2002). The City of Redding and surroundings are set on plains in the north end of the Sacramento Valley dissected by numerous rivers and streams emerging from the Trinity Mountains to the west and the Cascade Range to the north and east. The Sacramento River bisects the city.

Soils

Figure 5.7-1, *Natural Resource Conservation Service Soil Types,* illustrates the 75 soil types that fall within the Planning Area (NRCS 2022a). Of these 75 soil types, 26 contain hydric components. Hydric soils are defined as a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part. Hydric soils and their associated component landforms are associated with soils found within basin floors, basin rims, alluvial fans, fan aprons, or sloughs. These soil types are identified in Table 5.7-1, *List of NRCS soil types within the Planning Area* (NRCS 2022b).



Map Features

Sphere of Influence

Series Designation - Series Description

- Ad - Anderson gravelly sandy
- Ae - Anderson gravelly sandy loam, moderately
- AnB - Auburn loam, 0 to 8 percent
- AnD - Auburn loam, 8 to 30 percent
- ArD - Auburn very stony loam, 8 to 30 percent
- AsD2 - Auburn clay loam, 8 to 30 percent slopes,
- AtE2 - Auburn very stony clay loam, 30 to 50 percent slopes,
- AuF2 - Auburn very rocky clay loam, 50 to 70 percent slopes,
- BkC - Boomer gravelly loam, 0 to 15 percent slopes
- BkD - Boomer gravelly loam, 15 to 30 percent slopes
- BoE3 - Boomer very stony clay loam, 30 to 50 percent slopes, severely eroded
- CcA - Churn loam, 0 to 3 percent
- CcB - Churn loam, 3 to 8 percent slopes
- CdA - Churn loam, slightly wet, 0 to 3 percent slopes
- CeA - Churn gravelly loam, 0 to 3 percent slopes
- CeB - Churn gravelly loam, 3 to 8 percent slopes
- CfA - Churn gravelly loam, deep, 0 to 3 percent slopes
- CfB - Churn gravelly loam, deep, 3 to 8 percent slopes
- CgB - Clough gravelly loam, 3 to 8 percent slopes
- Ch - Cobbly alluvial land
- Ck - Cobbly alluvial land, frequently flooded
- DAM - Dams
- GbD - Gaviota very rocky sandy loam, 0 to 30 percent slopes
- GdD - Goulding very stony loam, 10 to 30 percent slopes
- GeE2 - Goulding very rocky loam, 30 to 50 percent slopes, eroded
- GeF2 - Goulding very rocky loam, 50 to 70 percent slopes, eroded
- Gp - Gravel pits
- Hd - Honcut loam
- He - Honcut gravelly loam
- Hf - Honcut gravelly loam, deep
- HhA - Honn gravelly sandy loam, 0 to 3 percent slopes
- KgF2 - Kidd very rocky loam, 10 to 60 percent slopes, eroded
- MeD - Millsholm gravelly loam, 3 to 30 percent slopes
- MeE - Millsholm gravelly loam, 30 to 50 percent slopes, MLRA 15
- MgA - Moda loam, 0 to 3 percent slopes, MLRA 17
- MhA - Moda loam, seeped, 0 to 3 percent slopes
- MkB - Moda loam, shallow, 0 to 5 percent slopes
- NeC - Newtown gravelly loam, 8 to 15 percent slopes
- NeD - Newtown gravelly loam, 15 to 30 percent slopes
- NeE2 - Newtown gravelly loam, 30 to 50 percent slopes, eroded
- PcD - Parrish loam, 8 to 30 percent slopes
- PcE - Parrish loam, 30 to 50 percent slopes
- PlA - Perkins loam, moist, 0 to 3 percent slopes, MLRA 17
- PmA - Perkins gravelly loam, gravelly clay loam substratum, 0 to 3 percent slopes, MLRA 17
- PmB - Perkins gravelly loam, 3 to 8 percent slopes
- PmC - Perkins gravelly loam, 8 to 15 percent slopes
- PmD - Perkins gravelly loam, gravelly clay loam substratum, 8 to 30 percent slopes, MLRA 17
- PoA - Perkins gravelly loam, moderately deep, 0 to 3 percent slopes
- PoB - Perkins gravelly loam, moderately deep, 3 to 8 percent slopes
- RbA - Red Bluff loam, 0 to 3 percent slopes, MLRA 17, moist
- RbB - Red Bluff loam, 3 to 8 percent slopes
- RcA - Red Bluff gravelly loam, moderately deep, 0 to 3 percent slopes
- RcB - Red Bluff gravelly loam, moderately deep, 3 to 8 percent slopes
- RdA - Redding gravelly loam, 0 to 5 percent slopes, moist, MLRA 17
- RdB - Redding gravelly loam, 0 to 15 percent slopes, moist, MLRA 17
- ReA - Redding-Red Bluff gravelly loams, 0 to 3 percent slopes
- ReB - Redding-Red Bluff gravelly loams, 3 to 8 percent slopes
- RgA - Reiff fine sandy loam, 0 to 3 percent slopes
- RhA - Reiff fine sandy loam, deep, 0 to 3 percent slopes
- RkA - Reiff gravelly fine sandy loam, deep, 0 to 3 percent slopes
- RlA - Reiff loam, 0 to 3 percent slopes
- RmA - Reiff loam, seeped, 0 to 3 percent slopes
- RnA - Reiff gravelly loam, 0 to 3 percent slopes
- Rw - Riverwash
- RxF - Rockland
- TaD - Tailings and placer diggings
- TbA - Tehama loam, 0 to 3 percent slopes, MLRA 17
- TeD - Toomes very stony loam, 0 to 30 percent
- TfA - Tujunga loamy sand, 0 to 3 percent slopes
- W - Water
- Wa - Wet alluvial land

Natural Resources Conservation Service (NRCS) Soil Survey Geographic (gSSURGO) Database for Shasta County, CA

ECORP: N:\2022\2022-059 City of Redding EIR\MAPS\Soils_and_Geology\Redding_EIR_NRCS_20230505.mxd (CCH) chinkelman 5/8/2023

Source: ECORP, 2023.

0 2
Scale (Miles)

Figure 5.7-1
Natural Resource Conservation Service Soil Types

This page intentionally left blank.

TABLE 5.7-1 LIST OF NRCS SOIL TYPES WITHIN THE PLANNING AREA

Soil Type	Landform	Erosion Hazard
Ad - gravelly sandy loam	Channels	Slight
Ae - Anderson gravelly sandy loam, moderately deep	Channels	Slight
CeA - Churn gravelly loam, 0 to 3 percent slopes	Channels	Slight
CeB - Churn gravelly loam, 3 to 8 percent slopes	Channels	Moderate
CfA - Churn gravelly loam, deep, 0 to 3 percent slopes	Channels	Slight
CfB - Churn gravelly loam, deep, 3 to 8 percent slopes	Channels	Moderate
CcB - Churn loam, 3 to 8 percent slopes	Channels	Moderate
CdA - Churn loam, slightly wet, 0 to 3 percent slopes	Channels	Slight
Ch - Cobbly alluvial land	Channels	Not rated
Ck - Cobbly alluvial land, frequently flooded	Floodplains	Not rated
HhA - Honn gravelly sandy loam, 0 to 3 percent slopes	Floodplains, Channels	Slight
MhA - Moda loam, seeped, 0 to 3 percent slopes	Drainageways, Fan remnants, Stream terraces	Slight
MkB - Moda loam, shallow, 0 to 5 percent slopes	Fan remnants, Stream terraces	Slight
PmA - Perkins gravelly loam, gravelly clay loam substratum, 0 to 3 percent slopes, MLRA 17	Drainageways, Stream terraces	Slight
RcA - Red Bluff gravelly loam, moderately deep, 0 to 3 percent slopes	Fan remnants	Slight
RcB - Red Bluff gravelly loam, moderately deep, 3 to 8 percent slopes	Fan remnants	Moderate
RbA - Red Bluff loam, 0 to 3 percent slopes, MLRA 17, moist	Fan remnants	Slight
RdA - Redding gravelly loam, 0 to 5 percent slopes, moist, MLRA 17	Fan remnants	Slight
ReA - Redding-Red Bluff gravelly loams, 0 to 3 percent slopes	Fan remnants	Slight
ReB - Redding-Red Bluff gravelly loams, 3 to 8 percent slopes	Fan remnants	Moderate
RmA - Reiff loam, seeped, 0 to 3 percent slopes	Floodplains	Slight
Rw - Riverwash	Channels	Not rated
TaD - Tailings and placer diggings	Floodplains	Not rated
TfA - Tujunga loamy sand, 0 to 3 percent slopes	Floodplains, Channels	Slight
TfB - Tujunga loamy, 3 to 8 percent slopes	Floodplains, Channels	Moderate
Wa - Wet alluvial land	Floodplains	Not rated

Source: ECORP Consulting, Inc. 2022, November. Draft Biological Resources Technical Memorandum for the City of Redding General Plan Update. Prepared for the City of Redding.

Regional Seismicity and Faulting

The Earth's crust includes tectonic plates that locally collide with or slide past one another along plate boundaries. California is particularly susceptible to such plate movements, notably the largely horizontal or "strike-slip" movements of the Pacific Plate, as it impinges on the North American Plate. In general, earthquakes occur when the accumulated stress along a plate boundary or fault is suddenly released, resulting in seismic slippage. This slippage can vary widely in magnitude, ranging in scale from a few millimeters or centimeters to tens of feet.

The performance of human-made structures during a major seismic event varies widely due to a number of factors, including:

- Location, with respect to active fault traces or areas prone to liquefaction or seismically-induced landslides;
- Type of building construction (i.e., wood frame, unreinforced masonry, non-ductile concrete frame);
- Proximity, magnitude, depth, and intensity of the seismic event itself as well as many other factors.

In general, evidence from past earthquakes shows that wood frame structures tend to perform well during a seismic event, especially when their foundations are properly designed and anchored. Conversely, older, unreinforced masonry structures and non-ductile reinforced concrete buildings (especially those built in the 1960s and early 1970s), do not perform as well, especially if they have not undergone appropriate seismic retrofitting. Applicable building code requirements, such as those found in the CBC, include seismic requirements that are designed to ensure the satisfactory performance of building materials under prescribed seismic conditions.

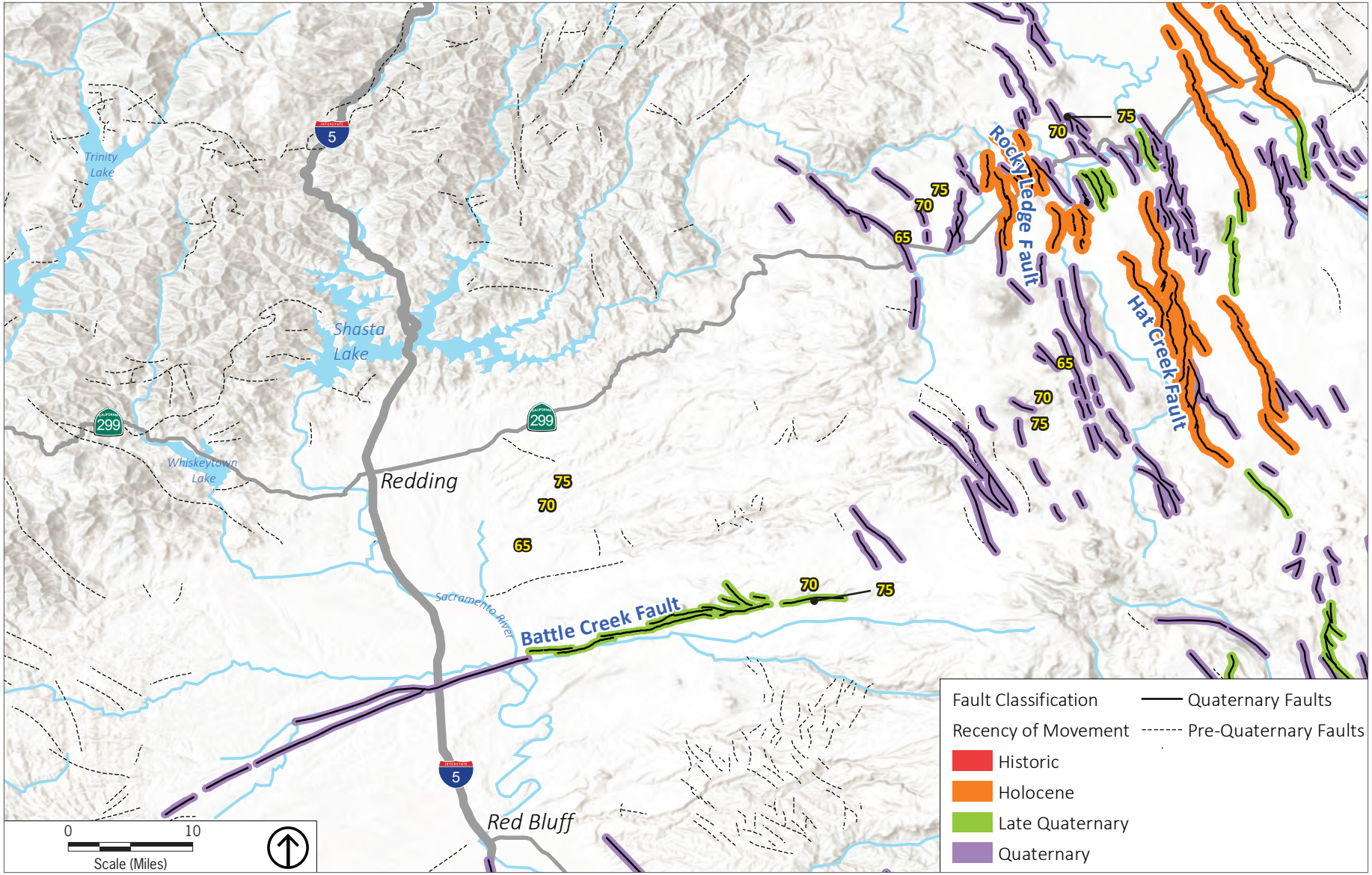
The Richter Scale is used to describe the magnitude of an earthquake. Each one-point increase in magnitude (M) represents a 10-fold increase in earthquake wave size and a 30-fold increase in energy release (strength). For example, an M8 earthquake produces 10 times the ground motion amplitude of an M7 earthquake, 100 times that of an M6 quake, and 1,000 times the motion of a magnitude 5. However, the M8 earthquake is 27,000 times stronger than an M5 quake. Typically, earthquakes of M5 or greater are considered strong earthquakes capable of producing damage.

Table 5.7-2, *Distances and Directions to Relevant Faults*, provides a summary of the key faults that could produce significant earthquakes (exceeding M5) that could impact Redding. The table also includes the maximum associated magnitudes of earthquakes along each fault. Locations of these faults relative to Redding are shown on Figure 5.7-2, *Regional Fault Map*. Due to the proximity of active fault lines, Redding is historically susceptible to earthquake-related hazards which include ground shaking and liquefaction.

TABLE 5.7-2 DISTANCES AND DIRECTIONS TO RELEVANT FAULTS

Fault	Approx. Distance and Direction from Redding	Fault Length (miles)	Maximum Magnitude	Slip Rate (mm/yr)
Battle Creek	5 miles southeast	45	6.5	1.0
Rocky Ledge	36 miles northeast	11	6.8	1.0
Hat Creek-McArthur	46 miles east	37	6.7	5.0
Bartlett Springs (Lake Mountain)	58 miles southwest	99	7.5	5.0
Great Valley Segment 1	59 miles south	27	Unspecified	0.2
Foothills Fault System	83 miles southeast	126	Unspecified	Unspecified

Note: Distances are approximate; mm/yr = millimeters per year
Sources: Blakeslee and Kattenhorn 2013; Martin 2020; Wills et. al. 2008



Source: California Geological Survey, 2016; PlaceWorks, 2017.

Figure 5.7-2
Regional Fault Map

This page intentionally left blank.

The nearest active faults are the Rocky Ledge Fault about 36 miles northeast of Redding and the Hat Creek Fault approximately 46 miles east of Redding. Active faults are those showing evidence of surface displacement within the last 11,000 years (CGS 2017a). The nearest fault is the Battle Creek Fault about 5 miles to the southeast (see Figure 5.7-2). The segment of the Battle Creek Fault east of the Sacramento River shows evidence of displacement within approximately the last 700,000 years, while the segment of the fault west of the River shows displacement within about the last 2.6 million years (CGS 2016). As such, this fault is not considered active by the California Geological Survey—that is, there is no evidence of surface displacement of the fault within the last 11,000 years—but is considered conditionally active by the US Bureau of Reclamation. The US Bureau of Reclamation defines an active fault as having ruptured within the last 35,000 years. A conditionally active fault, however, is defined as having ruptured in the Quaternary period (within the last 1.6 million years), but its displacement history during the last 35,000 years is unknown. The nearest Alquist-Priolo Earthquake Fault Zone is along the Rocky Ledge Fault about 41 miles to the northeast (CGS 1991).

Soils

The Sacramento Valley is a region renowned for its fertile soils as a result of thick marine and non-marine deposits from millions of years ago. Redding is relatively flat, with gently sloping toward the east and south, toward the Sacramento River. The predominant soil types in Redding include loams and sands of the Anderson, Auburn, Churn, Goulding, Moda, Newtown, Perkins, Red Bluff, Redding, Reiff, Toomes and Tujunga associations (NRCS 1974).

Seismic Hazards

Ground Shaking

Ground shaking is motion that occurs as a result of energy released during faulting and is the most dangerous effect of earthquakes. Damage to structures from the ground vibrations is determined by physical characteristics of rock and soil, building materials, earthquake magnitude, distance from epicenter, and character and duration of the ground motion.

The Richter Scale is used to describe the magnitude of an earthquake. Each one-point increase in magnitude (M) represents a 10-fold increase in earthquake wave size and a 30-fold increase in energy release (strength). For example, an M8 earthquake produces 10 times the ground motion amplitude of an M7 earthquake, 100 times that of an M6 quake, and 1,000 times the motion of a magnitude 5. The M8 earthquake is 27,000 times stronger than an M5 quake. Typically, earthquakes of M5 or greater are considered strong earthquakes capable of producing damage.

The energy released by an earthquake is measured as moment magnitude (Mw). The moment magnitude scale is logarithmic; therefore, each one-point increase in magnitude represents a tenfold increase in amplitude of the waves as measured at a specific location and a 32-fold increase in energy. That is, a magnitude 7 earthquake produces 100 times (10 x 10) the ground motion amplitude of a magnitude 5

earthquake. An earthquake of about 5.4 magnitude occurred in the northwest part of the City of Redding in 1998 (CGS 1998). Table 5.7-2 lists the faults most relevant to Redding along with their maximum magnitudes. Based on the distances from the faults the City of Redding has a relatively low risk for strong seismic ground shaking.

Liquefaction

Liquefaction, which may occur from strong ground shaking during earthquakes, is the transformation of a granular sediment or fill material from a solid state to a temporarily liquid state. Liquefaction is a serious hazard because buildings in areas that experience liquefaction may sink or suffer major structural damage. Liquefaction occurs in saturated soils when pore pressure exceeds the natural frictional strength between grains. This is most common in loose soils with no cohesion. As a result, the soil loses strength and starts to flow. Liquefaction is most often triggered by seismic shaking, but can also be due to improper grading, landslides, or other factors. In dry soils, seismic shaking may cause soil to settle rather than flow, a process known as densification. Loose granular soils and silts that are saturated by relatively shallow groundwater are susceptible to liquefaction.

Areas with the highest potential for liquefaction are located along the Sacramento River and its tributaries. Sites with low liquefaction potential are generally located in the gently sloping areas between the river and the foothills. Sites within the foothills are considered to have no liquefaction potential (Redding 2000).

Seismic Ground Settlement

Ground shaking can cause unconsolidated sediments to settle. Loose to medium dense granular material with no fine (clay or silt) particles or with low-plasticity fine particles are most susceptible to seismic compression. The potential hazard posed by seismic settlement and/or collapse in the city is considered moderate based on the compressibility of the underlying alluvial soils and the presence of shallow groundwater. Strong ground shaking can cause settlement of alluvial soils and artificial fills if they are not adequately compacted. Because unconsolidated soils and undocumented fill material are present in the City, seismically induced settlement and/or collapse are possible.

Lateral Spreading

Lateral spreading is the downslope movement of surface sediment due to liquefaction in a subsurface layer. Lateral spreading most commonly occurs when weak, saturated soils are bordered by a steep embankment or slope. Ground lurching occurs as earthquake-triggered horizontal movements on relatively steep embankments or slopes result in the cracking of the ground surface. Sites with liquefaction potential bordered by a free face are susceptible to lateral spreading.

Other Geologic Hazards

Landslides

Landslides are gravity-driven movements of earth materials that can include rock, soil, unconsolidated sediment, or combinations of such materials. The rate of landslide movement can vary; some move rapidly, as in a soil or rock avalanche, while other landslides creep or move slowly for long periods of time. The susceptibility of a given area to landslides depends on many variables, although the general characteristics that influence landslide hazards are widely acknowledged. Some important factors are:

- Slope Material. Loose, unconsolidated soils and soft, weak rocks are more hazardous than are firm, consolidated soils or hard bedrock.
- Slope Steepness. Most landslides occur on moderate to steep slopes.
- Structure and Physical Properties of Materials. This includes the orientation of layering and zones of weakness relative to slope direction.
- Water Content. Increased water content increases landslide hazard by decreasing friction and adding weight to the materials on a slope.
- Vegetation Coverage. Abundant vegetation with deep roots promotes slope stability.
- Proximity to Areas of Erosion or Human-made Cuts. Undercutting slopes can greatly increase landslide potential.
- Earthquake Ground Motions. Strong seismic ground motions can trigger landslides in marginally stable slopes or loosen slope materials, and also increase the risk of future landslides.

Most of the city is relatively flat to gently sloping. The western, northern, and northeastern portions of the city may be susceptible to landslides, as seen in Figure 5.7-3, *Landslide Susceptibility in Redding*.

Erosion

Erosion is the movement of soil from place to place, and is a natural process. The main natural agents of erosion in the region are wind and flowing water. Erosion can be accelerated dramatically by ground-disturbing activities if effective erosion control measures are not used. Soil can be carried off construction sites or bare land by wind and water, and tracked off construction sites by vehicles. Sediments can increase the turbidity (cloudiness) of water, clog fish gills, reduce spawning habitat, lower survival rates of young aquatic organisms, smother bottom-dwelling organisms, and suppress aquatic vegetation growth.

As described in Section 5.7.1.2 Existing Conditions, Soils, the predominant geological unit of the Planning Area is largely marine sandstone, shale, and conglomerate. As seen in Table 5.7-1, the soil types found in the Planning Area have slight to moderate erosion potential. The areas most subject to erosion are typically steep with sparse vegetation and exposed areas adjacent to waterways.

Ground Subsidence

Subsidence is the gradual sinking of the ground as a result of loss of subsurface materials, with little or no horizontal motion. It is often accompanied by large-scale ground cracking, and in some cases, the cracking has movement across it, making it into incipient faulting.

Ground cracking from subsidence in the future would be expected to occur along the boundaries of groundwater basins, such as a contact between alluvium and bedrock, or over prominent geologic structures, i.e., faults.

Subsidence of the ground surface has been reported in alluvial basins where significant amounts of groundwater (often in an overdraft condition) or petroleum are withdrawn over long periods. The primary cause of non-tectonic subsidence has been the alluvial compaction by closing of porosity due to removal of large quantities of groundwater or petroleum and a significant lowering of the groundwater levels. Shifts in the water table or loss of groundwater are major causes.

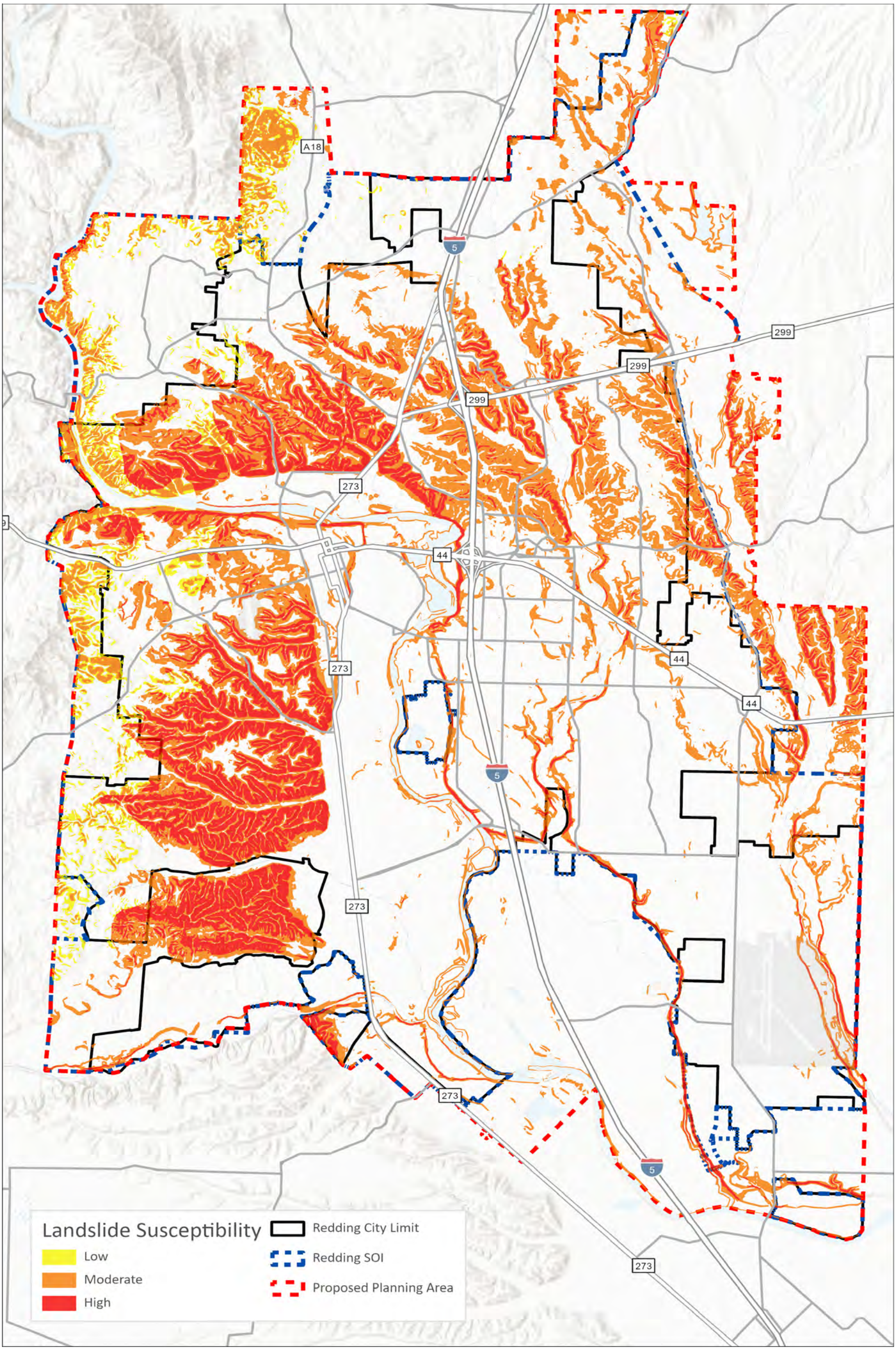
The major causes of ground subsidence are the excessive withdrawal of groundwater and the withdrawal of petroleum. The city is not in an area of known significant ground subsidence due to the withdrawal of subsurface fluids. Therefore, the potential for subsidence occurring within the city due to the withdrawal of oil, gas, or water is considered low.

Expansive Soils

Expansive soils can change dramatically in volume depending on moisture content. When wet, these soils can expand; conversely, when dry, they can contract or shrink. Sources of moisture that can trigger this shrink-swell phenomenon can include seasonal rainfall, landscape irrigation, utility leakage, and/or perched groundwater. Expansive soil can exhibit wide cracks in the dry season, and changes in soil volume have the potential to damage concrete slabs, foundations, and pavement. Special building/structure design or soil treatment are often needed in areas with expansive soils.

Expansive soils are typically very fine-grained with a high to very high percentage of clay, typically montmorillonite, smectite, or bentonite clay. Linear extensibility soil tests are often used to identify expansive soils, wherein soil sample volume/length changes in response to reduced moisture content. A linear extensibility of 3 percent or greater connotes moderate to high shrink-swell potential. This soil behavior has the potential to cause damage to buildings, roads, and other structures. A majority of soils within the city are comprised of fine sandy loams and sandy loams. These soils are not considered to be subject to expansion. Based on the overall prevalence of granular soils with low to moderate linear extensibilities within the city, expansive soils are not a significant concern (NRCS 2022).

5.7 Geology and Soils



Source: Generated using ArcGISPro, 2023; City of Redding GIS 2022; California Geologic Survey, 2018

0 2
Scale (Miles)

Figure 5.7-3
Landslide Susceptibility Areas in Redding

This page intentionally left blank.

Volcanic Hazards

Two major active volcanoes in the Cascade Range are near the Redding region: Mt. Shasta, about 56 miles north of the Planning Area, and Mt. Lassen, approximately 46 miles to the east. Mt. Lassen last erupted in 1914-1917, and Mt. Shasta in 1786 (Redding 2015). Both volcanoes are classified as very high threat volcanoes by the US Geological Survey (Shasta County 2016). The City of Redding faces a low probability of impact from eruptions occurring at either Mount Shasta or Lassen Peak due to the large distance between the volcanoes and the city (Redding 2015). Smaller volcanoes are found closer to Redding than Mt. Shasta and Mt. Lassen; the closest being Black Butte, a dormant cinder cone located about 14.5 miles southeast of the city that last erupted over 400,000 years ago (Hardwood and Helley 1987).

5.7.2 THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the State CEQA Guidelines, the proposed Project would result in a significant geology and soils impact if it would:

GEO-1 Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving: i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault; ii) Strong seismic ground shaking; iii) Seismic-related ground failure, including liquefaction; iv) Landslides, mudslides, or other similar hazards.

GEO-2 Result in substantial soil erosion or the loss of topsoil.

GEO-3 Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.

GEO-4 Be located on expansive soil, as defined by Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property.

GEO-5 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.

GEO-6 Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

GEO-7 In combination with past, present, and reasonably foreseeable projects, result in significant cumulative impacts with respect to geology and soils.

5.7.3 PROPOSED GENERAL PLAN POLICIES

The following are relevant policies of the Redding General Plan Update, which may contribute to a reduction in seismic and geologic hazards and impacts on paleontological resources as a result of implementation of the proposed project.

Community Development and Design Element

- **Policy CDD1F:** Generally oppose development of community septic systems, wastewater package plants, and/or temporary sewage disposal facilities within the Primary and Secondary Growth areas for developments within the jurisdiction of Shasta County. Exceptions include situations where public health and safety concerns, with existing development, need to be addressed.

Public Safety Element

- **Policy PS1A:** Continue to require that new structures and alterations to existing structures comply with the seismic safety requirements of the California Building Code (CBC); adopt updated provisions of the CBC related to seismic safety as they become available.
- **Policy PS1B:** Geotechnical investigations for proposed developments on sites with potential hazards, including necessary infrastructure in areas determined to have a "high" liquefaction potential shall be prepared as may be required by the Building Official.
- **Policy PS1C:** As may be required by the Building Official and/or City Engineer, project proponents shall determine the landslide, slope-instability, and erosion potential of proposed development sites located in potential hazard areas. Consider utilizing building setbacks, grading techniques, or appropriate measures when constructing in or near unstable areas.
- **Policy PS10B:** Encourage owners of existing critical, sensitive, and high-occupancy facilities with significant seismic vulnerabilities to upgrade, relocate, or phase out the facilities as appropriate.

Natural Resources Element

- **Policy NR1A:** Consider updating the process and requirements for the development, review, and approval of erosion- and sedimentation- control plans for development projects to include the use of best available practices.
- **Policy NR1D:** Strive to ensure that erosion control devices are installed and maintained in accordance with the requirements of the grading ordinance, NPDES, conditions of granting permit approval, and any other applicable requirements; and that project monitoring and erosion-control enforcement activities are undertaken to ensure that that the facilities function effectively.
- **Policy NR1E:** Pursue immediate remediation to the extent feasible when erosion damage is discovered and/or initial control measures fail.

- **Policy NR1F:** Continue to enforce the provisions of the RMC for failure to comply with the requirements of the Grading Ordinance and/or an approved erosion- and sedimentation-control plan.
- **Policy NR1G:** Continue supporting and/or jointly sponsor erosion- and sedimentation-control training and education activities in conjunction with local/ regional jurisdictions and the development community. Encourage neighboring jurisdictions to adopt and enforce consistent erosion- and sedimentation-control measures.
- **Policy NR1H:** Provide opportunities for staff responsible for monitoring and enforcing the City's Grading Ordinance to receive adequate training regarding erosion- and sedimentation-control practices.

Parks, Trails, and Recreation Element

- **Policy R4C:** Promote and encourage consultation and partnership with Wintu tribes and historical research groups and others for the protection, improvement, and preservation of archaeological, paleontological, historical and cultural resources in parks.

5.7.4 IMPACT DISCUSSION

GEO-1:	The project would not exacerbate hazards from surface rupture of a known active fault, strong seismic ground shaking, seismic-related ground failure, or landslides.

Rupture of a Known Earthquake Fault

The nearest active faults are the Rocky Ledge Fault about 36 miles northeast of the city, and the Hat Creek Fault approximately 46 miles east of the city. The Battle Creek Fault, about 5 miles south of the city, is not considered active by the California Geological Survey—that is, there is no evidence of surface displacement of the fault within the last 11,000 years—but is considered active by the US Bureau of Reclamation. As seen in Figure 5.7-2, the segment of the Battle Creek Fault east of the Sacramento River shows evidence of displacement within approximately the last 700,000 years, while the segment of the fault west of the River shows displacement within about the last 2.6 million years (CGS 2016).

The Public Safety Element of the General Plan Update contains policies that address potential fault rupture impacts, such as Policy PS1A, which requires that new structures and alterations to existing structures comply with the seismic safety requirements of the CBC; Policy PS1B, which calls for geotechnical investigations for proposed developments on sites with potential hazards; and Policy PS10B, which encourages owners of existing critical, sensitive, and high-occupancy facilities with significant seismic vulnerabilities to upgrade, relocate, or phase out the facilities. All new construction in Redding would be required to comply with the latest version of the CBC, which contains criteria and standards designed to

reduce ground rupture risks to acceptable levels. To apply this code to site development, the City of Redding requires that new construction be in accordance with building, grading, and erosion-control ordinances of the City's Municipal Code, and includes inspections during plan check and construction to ensure that design standards are met. The proposed General Plan Update goals and policies, in combination with the Alquist-Priolo Act, CBC, and other State and local requirements, would reduce potential impacts associated with surface fault rupture to less than significant.

Seismic Ground Shaking

Shasta County has a low level of historic seismic activity. Most of the stronger intensity seismic activity in Shasta County has occurred in the eastern half of the county near Lassen Peak. The City of Redding is in the less seismically active western half of Shasta County, referred to as an area of moderate seismicity. Regardless, moderate to strong ground shaking associated with seismic activity could cause damage to structures and injury or death to inhabitants. The implementation of the following Public Health and Safety Element policies of the General Plan Update would address potential ground-shaking hazards: Policy PS1A, which requires that new structures and alterations to existing structures comply with the seismic safety requirements of the CBC; Policy PS1B, which calls for geotechnical investigations for proposed developments on sites with potential hazards; and Policy PS10B, which encourages owners of existing critical, sensitive, and high-occupancy facilities with significant seismic vulnerabilities to upgrade, relocate, or phase out the facilities.

Furthermore, new construction in Redding is required to comply with the latest version of the California Building Standards Code, which contains seismic building criteria and standards that are designed to reduce ground-shaking risks to acceptable levels. The proposed General Plan Update goals, policies, and actions, in combination with the CBC and other State and local requirements, would reduce potential ground-shaking impacts to a less-than-significant level.

Seismic-Related Ground Failure (Liquefaction)

During an earthquake, liquefaction may occur in areas with loose soils and high water tables. Areas of concern are located along the Sacramento River and its tributaries due to the presence of the Holocene alluvial deposits. Holocene deposits may contain significant amounts of gravel-size materials which have been shown to be susceptible to liquefaction. Future development and redevelopment under the proposed General Plan Update in these areas could be exposed to liquefaction hazards. These hazards include soil settlement, loss of bearing capacity in foundation soils, and the buoyant rise of structures, leading to structural distress or failure. Excess hydrostatic pressure may also lead to sand boils, mud spouts, and seepage of water through ground cracks. The implementation of the following Health and Safety Element policies of the General Plan Update would address potential seismic-related ground failure hazards: Policy PS1A, which requires that new structures and alterations to existing structures comply with the seismic safety requirements of the UBC; Policy PS1B, which calls for geotechnical investigations for proposed developments on sites with potential hazards; and Policy PS10B, which encourages owners of existing

critical, sensitive, and high-occupancy facilities with significant seismic vulnerabilities to upgrade, relocate, or phase out the facilities.

In accordance with the CBC, geotechnical investigations for new development and redevelopment would determine on-site geologic conditions and identify appropriate recommendations for earthwork, grading, slopes, foundations, pavements, and other necessary geologic and seismic design considerations. Compliance with the CBC would identify potential for liquefaction hazards on individual development sites and the construction of buildings and infrastructure that ensures structural integrity to withstand liquefaction hazards. The proposed General Plan Update goals, policies, and actions, in combination with the CBC and other State and local requirements, would reduce potential seismic-related ground failure impacts to a less-than-significant level.

Landslides

Slope instability and landslides are a common problem where there are steep slopes and unstable geologic formations. Most of the city is relatively flat to gently sloping. The western portion of the city does contain slopes that may be susceptible to landslides. Slump-type failures and lateral spreading failures would likely occur at the edge of alluvial terraces and along the floodplain of the Sacramento River.

The Public Safety Element of the General Plan Update includes the following policies that address potential landslide hazards: Policy PS1B, which calls for geotechnical investigations for proposed developments on sites with potential hazards, and Policy PS1C which requires project proponents to determine the landslide, slope-instability, and erosion potential of proposed development sites located in potential hazard areas and to utilize building setbacks, grading techniques, or appropriate measures when constructing in or near unstable areas. The proposed General Plan Update goals and policies, in combination with the CBC, Grading and Erosion Control Ordinances of the City's Municipal Code, and other State and local requirements, would ensure that potential slope instability and landslide impacts would be less than significant.

Level of Significance Before Mitigation: GEO-1 would be less than significant.

Mitigation Measures

No mitigation measures are required.

GEO-2: The project would not result in substantial soil erosion or the loss of topsoil.

Erosion results in the loss of topsoil that may cause sedimentation downstream, and in extreme cases, can lead to landslides. Erosion hazards are of particular concern in the western and northern portions of the city. Approximately 11,000 acres within Redding have erosive soil consisting of the following soil types (Redding 1998):

- Newton gravelly loams (5 to 50 percent slopes)

- Auburn very stoney loams (8 to 30 percent slopes)
- Perkins gravelly loams (15 to 30 percent slopes)

Accelerated erosion may result from development in areas of moderate to steep topography. Soil and wind erosion could result from vegetation removal, improper farming practices, grading for roadways and construction, and improper diversion and discharge of water. During the winter months, there is an increased risk of soil erosion on construction sites, where bare soil can be exposed and potentially unstable slopes can be created. The Public Safety Element and Natural Resource Element of the General Plan Update includes the following policies that addresses soil erosion impacts:

- **Policy PS1B:** Geotechnical investigations for proposed developments on sites with potential hazards, including necessary infrastructure in areas determined to have a "high" liquefaction potential shall be prepared as may be required by the Building Official.
- **Policy PS1C:** As may be required by the Building Official and/or City Engineer, project proponents shall determine the landslide, slope-instability, and erosion potential of proposed development sites located in potential hazard areas. Consider utilizing building setbacks, grading techniques, or appropriate measures when constructing in or near unstable areas.
- **Policy NR1A:** Consider updating the process for the development, review, and approval of erosion- and sedimentation- control plans for development projects prior to include the use of best available practices.
- **Policy NR1D:** Strive to ensure that erosion control devices are installed and maintained in accordance with the requirements of the grading ordinance, NPDES, conditions of granting permit approval, and any other applicable requirements; and that project monitoring and erosion-control enforcement activities are undertaken to ensure that that the facilities function effectively.
- **Policy NR1E:** Pursue immediate remediation to the extent feasible when erosion damage is discovered and/or initial control measures fail.
- **Policy NR1F:** Continue to enforce the provisions of the RMC for failure to comply with the requirements of the Grading Ordinance and/or an approved erosion- and sedimentation-control plan.
- **Policy NR1G:** Continue supporting and/or jointly sponsor erosion- and sedimentation-control training and education activities in conjunction with local/ regional jurisdictions and the development community. Encourage neighboring jurisdictions to adopt and enforce consistent erosion- and sedimentation-control measures.
- **Policy NR1H:** Provide opportunities for staff responsible for monitoring and enforcing the City's Grading Ordinance to receive adequate training regarding erosion- and sedimentation-control practices.

New construction in Redding would also be required to comply with the Grading Ordinance in the City's Municipal Code, which includes requirements for control of erosion due to construction activities for certain project types and locations. The proposed General Plan Update goals and policies, in combination with the Redding Grading Ordinance and other State and local requirements, would reduce potential erosion impacts to a less-than-significant level.

Level of Significance Before Mitigation: GEO-2 would be less than significant.

Mitigation Measures

No mitigation measures are required.

GEO-3:	The project would not result in a significant impact related to development 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.

As shown on Figure 5.7-1, there are multiple soil types in the City that could result in landslides, subsidence, and liquefaction (CGS 2023). New development allowed by the General Plan Update could occur in such hazard areas. Several areas that are part of the proposed General Plan Update could be subject to seismically induced landslides and liquefaction. Areas of Redding may be subject to the effects of liquefaction due to the presence of the Holocene alluvial deposits. Holocene deposits may contain significant amounts of gravel-size materials which have been shown to be susceptible to liquefaction. These areas are generally found along the areas of concern are located along the Sacramento River and its tributaries (Redding 2000). These saturated, cohesionless soils could lose strength and behave like a viscous liquid in the event of strong ground shaking. This loss of strength could result in the sudden collapse or overturning of structures and collapse of pavement.

The potential for subsidence occurring within the city due to the withdrawal of oil, gas, or water is considered low. Regardless, the Public Health and Safety Element of the General Plan Update includes the following policies that address potential unstable soil impacts: Policy PS1B, which calls for geotechnical investigations for proposed developments on sites with potential hazards, including necessary infrastructure in areas determined to have a "high" liquefaction potential, and Policy PS1C which requires project proponents to determine the landslide, slope-instability, and erosion potential of proposed development sites located in potential hazard areas and to utilize building setbacks, grading techniques, or appropriate measures when constructing in or near unstable areas.

New construction in Redding is also required to comply with the California Building Standards Code, which contains building criteria and standards that are designed to reduce geologic risks to acceptable levels. Additionally, standard geotechnical engineering procedures, soil testing, proper design, and quality

construction controls can identify and mitigate for liquefiable soils or unstable soils during site development. By applying knowledge about the kinds of soils, their strengths, and groundwater conditions, and by properly designing and constructing fills and foundations, modern soil engineering practices have improved greatly. Through adherence to current standards, subsidence and settlement damage, including liquefaction, can be reduced to levels that are generally considered acceptable.

The proposed General Plan Update goals, policies, and actions, in combination with the CBC, Grading Ordinance, and other State and local requirements, would ensure that potential unstable soil impacts would be less than significant.

Level of Significance Before Mitigation: GEO-3 would be less than significant.

Mitigation Measures

No mitigation measures are required.

GEO-4:	The project would not create substantial risks to life or property as a result of its location on expansive soil, as defined in Section 1803.5.3 of the California Building Code, creating substantial direct or indirect risks to life or property.

The General Plan Update would allow new development in areas with expansive soils. However, most soils within the city are comprised of fine sandy loams and sandy loams (Redding 1998). These soils are not considered to be subject to expansion. Moreover, because of the overall prevalence of granular soils (gravel, sand, or silt, with little to no clay content) with low to moderate linear extensibilities (shrink / swell) within the city, expansive soils are not a significant concern. Newly constructed buildings, pavements, and utilities in areas with expansive soils could be damaged by differential settlement due to soil expansion and contraction. These variations in ground settlement may ultimately lead to structural failure and damage to infrastructure.

The adverse effects of expansive soils can be avoided through proper subsoil preparation, drainage, and foundation design. However, to design an adequate foundation, the conditions must be assessed through appropriate soil sampling and laboratory soils testing. Expansive soils are identified through expansion tests of samples of soil or rock. Procedures employed in expansive soils testing are found in the CBC that has been adopted by the City of Redding.

The Public Safety Element of the General Plan Update includes the following policy that addresses potential hazards from expansive soils: Policy PS1B, which calls for geotechnical investigations for proposed developments on sites with potential hazards. The proposed General Plan Update goals and policies, in combination with the CBC and other State and local requirements, would ensure that potential expansive soil impacts would be less than significant.

Level of Significance Before Mitigation: GEO-4 would be less than significant.

Mitigation Measures

No mitigation measures are required.

GEO-5:	The project would not utilize septic tanks or alternative wastewater disposal systems where soils would be incapable of adequately supporting the in cases where sewers are not available for the disposal of wastewater.

There are portions of Redding that have soils that are unsuitable for wastewater disposal through septic systems. These include areas with shallow groundwater, impermeable clay soils, and/or steep slopes. Future development under the General Plan Update would connect to the City's sewer system, where feasible. The following policy in the Community Development and Design Element of the General Plan Update addresses septic tanks: Policy CDD1F, which generally opposes development of community septic systems, wastewater package plants, and/or temporary sewage disposal facilities within the Primary and Secondary Growth areas for developments within the jurisdiction of Shasta County. The General Plan Update policy, in combination with State and local requirements would ensure impacts are less than significant.

Level of Significance Before Mitigation: GEO-5 would be less than significant.

Mitigation Measures

No mitigation measures are required.

GEO-6:	Project development would not directly or indirectly destroy a unique paleontological resource or unique geologic feature.

Future development allowed under the General Plan Update may result in impacts to paleontological resources or unique geological features. Ground-disturbing activities in sensitive areas may cause damage to or destruction of paleontological resources. Additionally, development of previous undeveloped areas could result in the discovery of paleontological resources, which would be considered a significant impact.

The Park, Trails, and Recreation Element of the General Plan Update includes the following policy pertaining to paleontological resources, Policy R4C which seeks to promote and encourage consultation and partnership with Wintu tribes and historical research groups and others for the protection, improvement, and preservation of archaeological, paleontological, historical and cultural resources in parks. The proposed policies of the General Plan Update, federal and state regulations, as well as mitigation measures GEO-1 and GEO-2 would reduce potential impacts to less than significant.

Level of Significance Before Mitigation: GEO-6 would be potentially significant.

Mitigation Measures

GEO-1 Prior to issuance of a grading permit for projects involving ground disturbance in previously undisturbed, the project applicant shall consult with a geologist or paleontologist to confirm whether the grading would occur at depths that could encounter highly sensitive sediments for paleontological resources. If confirmed that underlying sediments may have sensitivity, construction activity shall be monitored by a qualified paleontologist. The paleontologist shall have the authority to halt construction during ground-disturbing activities, as outlined in Mitigation Measure GEO-2.

GEO-2 In the event of any fossil discovery, regardless of depth or geologic formation, ground-disturbing activities shall halt within a 50-foot radius of the find until its significance can be determined by a qualified paleontologist. Significant fossils shall be recovered, prepared to the point of curation, identified by qualified experts, listed in a database to facilitate analysis, and deposited in a designated paleontological curation facility, in accordance with the standards of the Society of Vertebrate Paleontology. The repository shall be identified, and a curatorial arrangement shall be signed prior to collection of the fossils.

Level of Significance After Mitigation: GEO-6 would be less than significant.

5.7.5 CUMULATIVE IMPACTS

GEO-7 **The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in less-than-significant cumulative impacts with respect to geology and soils.**

Development in Redding would continue to expose people and property to seismic hazards and adverse soil conditions. The policies contained in the General Plan Update, along with compliance with State and local regulations addressing building construction, and mitigation measures GEO-and GEO-2, would reduce project-level impacts associated with geology and soils to a less-than-significant level. Development projects in other communities would also be subject to federal, State, and local policies and regulations that would address seismic and geologic hazard impacts.

Overall, federal, state, and local policies and regulations would address potential local and site-specific impacts associated with geology and soils. Therefore, the cumulative geology and soils impact would be less than significant.

Level of Significance Before Mitigation: GEO-7 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.7.6 REFERENCES

Blakeslee, M. W. and S. A. Kattenhorn. 2013. Revised earthquake hazard of the Hat Creek fault, northern California: A case example of a normal fault dissecting variable-age basaltic lavas, Geosphere; October 2013; v. 9; no. 5; p. 1397-1409

California Geological Survey (CGS). 1991. Special Studies Zones Map Cassel Quadrangle, http://gmw.conservation.ca.gov/, accessed January 4, 2023.

_____. 1998. Historic Earthquake Online Database, http://maps.conservation.ca.gov/cgs/historicearthquakes/, accessed January 4, 2023

_____. 2002, December. Note 36: California Geomorphic Provinces, http://www.conservation.ca.gov/cgs/information/publications/cgs_notes/Pages/index.aspx.

_____. 2016, August 18. Fault Activity Map of California (2010). http://maps.conservation.ca.gov/cgs/fam/.

_____. 2017a. Alquist-Priolo Earthquake Fault Zoning Act. https://www.conservation.ca.gov/cgs/alquist-priolo, accessed January 4, 2023.

_____. 2023, April 25 (Accessed). CGS Seismic Hazards Program: Liquefaction Zones (webmap). https://gis.data.ca.gov/datasets/cadoc::cgs-seismic-hazards-program-liquefaction-zones-1/explore?location=40.120087%2C-121.125042%2C8.10

Harwood, D. S., and E. J. Helley. 1987. Late Cenozoic Tectonism of the Sacramento Valley, California, U. S. Geological Survey Professional Paper 1359. https://pubs.usgs.gov/pp/1359/report.pdf, accessed January 4, 2023.

Martin, G. 2020. The Rocky Ledge Fault, Shasta County, NE California: Development and Morphology of a Quaternary Oblique Normal Fault in Basalt, Portland State University, ProQuest Dissertations Publishing. https://www.proquest.com/openview/c7de5575a917a257644e1a8c71683481/1?pq-origsite=gscholar&cbl=44156, accessed April 27, 2022.

Natural Resources Conservation Service (NRCS). 2022a. Web Soil Survey. http://websoilsurvey.nrcs.usda.gov/. Accessed April 2022.

_____. 2022b. Soil Data Access Hydric Soils List. https://www.nrcs.usda.gov/wps/portal/nrcs/mail/soils/use/hydric/. Accessed June 2022.

Redding, City of. 1998, July. 2000-2020 General Plan Background Report. https://www.cityofredding.org/home/showpublisheddocument/26287/637672947986030000

_____. 2000, October. 2000-2020 General Plan. https://www.cityofredding.org/home/showpublisheddocument/5506/635791168569530000

———. 2015, November. Local Hazard Mitigation Plan. http://www.cityofredding.org/home/showdocument?id=5627, accessed January 4, 2023.

Shasta County Department of Public Works (Shasta County). 2016, September. Shasta County and City of Anderson Multi-Jurisdictional Hazard Mitigation Plan. http://www.co.shasta.ca.us/docs/libraries/public-works-docs/schmp-2015-update/2015-schmp-admin-draft_062016.pdf?sfvrsn=6, accessed January 4, 2023.

U. S. Department of Agriculture Natural Resources Conservation Service (NRCS). 1974. Soil Survey of Shasta County Area, https://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/california/CA607/0/shasta.pdf, accessed April 26, 2022.

_____. 2022, Web Soil Survey Website. https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx, accessed January 4, 2023.

United States Department of the Interior (USDI). 2000. *Assessment of Fossil Management on Federal and Indian Lands*.

Wills, C. J., R. J. Weldon II, and W. A. Bryant (Wills et. al.). 2008. Appendix A: California Fault Parameters for the National Seismic Hazard Maps and Working Group on California Earthquake Probabilities 2007. https://pubs.usgs.gov/of/2007/1437/a/of2007-1437a.pdf, accessed April 27, 2022.

This page intentionally left blank.

5.8 GREENHOUSE GASES

This section of the Draft Environmental Impact Report (EIR) evaluates the potential for the City of Redding General Plan Update (proposed project) to impact the greenhouse gas (GHG) emissions in a local and regional context. Because no single project is large enough to result in a measurable increase in global concentrations of GHG, climate change impacts of a project are considered on a cumulative basis.

5.8.1 ENVIRONMENTAL SETTING

5.8.1.1 TERMINOLOGY

The following are definitions for terms used throughout this section.

- **Greenhouse gases (GHG).** Gases in the atmosphere that absorb infrared light, thereby retaining heat in the atmosphere and contributing to a greenhouse effect.
- **Global warming potential (GWP).** Metric used to describe how much heat a molecule of a GHG absorbs relative to a molecule of carbon dioxide (CO_2) over a given period (20, 100, and 500 years). CO_2 has a GWP of 1.
- **Carbon dioxide equivalent (CO_2e)**. The standard unit to measure the amount of GHGs in terms of the amount of CO_2 that would cause the same amount of warming. CO_2e is based on the GWP ratios between the various GHGs relative to CO_2.
- **$MTCO_2e$.** Metric ton of CO_2e.
- **$MMTCO_2e$.** Million metric tons of CO_2e.

5.8.1.2 GREENHOUSE GASSES AND CLIMATE CHANGE

Human activities are contributing to global climate change by adding substantial amounts of heat-trapping gases, known as GHGs, to the atmosphere. The primary source of these GHGs is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHGs—water vapor, carbon dioxide (CO_2), methane (CH_4), and ozone (O_3)—that are the likely cause of an increase in global average temperatures observed in the 20th and 21st centuries. Other GHGs identified by the IPCC that contributes to global warming to a lesser extent are nitrous oxide (N_2O), sulfur hexafluoride (SF_6), hydrofluorocarbons, perfluorocarbons, and chlorofluorocarbons (IPCC 2001).[1,2] The major GHGs applicable to the proposed project are briefly described.

The major GHGs are described as follows:

- **Carbon dioxide (Co_2)** enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and respiration, and a result of other chemical reactions (e.g., manufacture of cement). Carbon dioxide is removed from the atmosphere (sequestered) when it is absorbed by plants as part of the biological carbon cycle.
- **Methane (CH_4)** is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and from the decay of organic waste in landfills and water treatment facilities.
- **Nitrous oxide (N_2O)** is emitted during agricultural and industrial activities as well as during the combustion of fossil fuels and solid waste.

GHGs are dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. Some GHGs have stronger greenhouse effects than others, these are referred to as high GWP gases. The GWP of GHG emissions are shown in Table 5.8-1, *GHG Emissions and Their Relative Global Warming Potential Compared to CO_2.* The GWP is used to convert GHGs to CO_2-equivalence (CO_2e) to show the relative potential that different GHGs must retain infrared radiation in the atmosphere and contribute to the greenhouse effect. For example, under the IPCC Fifth Assessment Report (AR5), GWP values for CH_4, 10 MT of CH_4 would be equivalent to 280 MT of CO_2.

[1] Water vapor (H_2O) is the strongest GHG and the most variable in its phases (vapor, cloud droplets, ice crystals); however, water vapor is not considered a pollutant because it is considered part of the feedback loop rather than a primary cause of change.

[2] Black carbon contributes to climate change both directly, by absorbing sunlight, and indirectly, by depositing on snow (making it melt faster) and by interacting with clouds and affecting cloud formation. Black carbon is the most strongly light-absorbing component of particulate matter (PM) emitted from burning fuels such as coal, diesel, and biomass. The share of black carbon emissions from transportation is dropping rapidly and is expected to continue to do so between now and 2030 as a result of California's air quality programs. The remaining black carbon emissions will come largely from woodstoves/fireplaces, off-road applications, and industrial/commercial combustion (CARB 2022). However, state and national GHG inventories do not include black carbon due to ongoing work resolving the precise global warming potential of black carbon. Guidance for CEQA documents does not yet include black carbon.

TABLE 5.8-1 GHG EMISSIONS AND THEIR RELATIVE GLOBAL WARMING POTENTIAL COMPARED TO CO_2

GHGs	Fifth Assessment Report Global Warming Potential Relative to CO_2[1]	Sixth Assessment Report Global Warming Potential Relative to CO_2[1]
Carbon Dioxide (CO_2)	1	1
Methane (CH_4)[2]	28	30
Nitrous Oxide (N_2O)	265	273

Source: IPCC 2013, 2021.

Notes: The IPCC published updated GWP values in its Sixth Assessment Report (AR6) that reflect latest information on atmospheric lifetimes of GHGs and an improved calculation of the radiative forcing of CO_2. However, GWP values identified in AR5 are used by the 2022 Scoping Plan for long-term emissions forecasting. Therefore, this analysis utilizes AR5 GWP values consistent with the current Scoping Plan.

[1] Based on 100-year time horizon of the GWP of the air pollutant compared to CO_2.

[2] The methane GWP includes direct effects and indirect effects due to the production of tropospheric ozone and stratospheric water vapor. The indirect effect due to the production of CO_2 is not included.

Human Influence on Climate Change

For approximately 1,000 years before the Industrial Revolution, the amount of GHGs in the atmosphere remained relatively constant. During the 20th century scientists observed a rapid change in the climate and the quantity of climate change pollutants in the Earth's atmosphere that is attributable to human activities. The recent Sixth Assessment Report (AR6) of the Intergovernmental Panel on Climate Change (IPCC) summarizes the latest scientific consensus on climate change. It finds that atmospheric concentrations of CO_2 have increased by 50 percent since the industrial revolution and continue to increase at a rate of two parts per million each year. By the 2030s, and no later than 2040, the world will exceed 1.5°C warming (CARB 2022). These recent changes in the quantity and concentration of climate change pollutants far exceed the extremes of the ice ages, and the global mean temperature is warming at a rate that cannot be explained by natural causes alone. Human activities are directly altering the chemical composition of the atmosphere through the buildup of climate change pollutants (CAT 2006). In the past, gradual changes in the earth's temperature changed the distribution of species, availability of water, etc. Human activities are accelerating this process so that environmental impacts associated with climate change no longer occur in a geologic time frame but within a human lifetime (IPCC 2007).

Like the variability in the projections of the expected increase in global surface temperatures, the environmental consequences of gradual changes in the Earth's temperature are hard to predict. Projections of climate change depend heavily upon future human activity. Therefore, climate models are based on different emission scenarios that account for historical trends in emissions and on observations of the climate record that assess the human influence of the trend and projections for extreme weather events. Climate-change scenarios are affected by varying degrees of uncertainty. For example, there are varying degrees of certainty on the magnitude of the trends for:

- Warmer and fewer cold days and nights over most land areas.
- Warmer and more frequent hot days and nights over most land areas.

- An increase in the frequency of warm spells and heat waves over most land areas.
- An increase in frequency of heavy precipitation events (or proportion of total rainfall from heavy falls) over most areas.
- Larger areas affected by drought.
- Intense tropical cyclone activity increases.
- Increased incidence of extreme high sea level (excluding tsunamis).

Potential Climate Change Impacts for California

There is at least a greater than 50 percent likelihood that global warming will reach or exceed 1.5°C in the near-term, even for the very low GHG emissions scenario (IPCC 2022). Climate change is already impacting California and will continue to affect it for the foreseeable future. For example, the average temperature in most areas of California is already 1°F higher than historical levels, and some areas have seen average increases in excess of 2°F (CalOES 2020). The California Fourth Climate Change Assessment identifies the following climate change impacts under a business-as-usual scenario:

- Annual average daily high temperatures in California are expected to rise by 2.7°F by 2040, 5.8°F by 2070, and 8.8°F by 2100 compared to observed and modeled historical conditions. These changes are statewide averages. Heat waves are projected to become longer, more intense, and more frequent.
- Warming temperatures are expected to increase soil moisture loss and lead to drier seasonal conditions. Summer dryness may become prolonged, with soil drying beginning earlier in the spring and lasting longer into the fall and winter rainy season.
- High heat increases the risk of death from cardiovascular, respiratory, cerebrovascular, and other diseases.
- Droughts are likely to become more frequent and persistent.
- Climate change is projected to increase the strength of the most intense precipitation and storm events affecting California.
- Mountain ranges in California are already seeing a reduction in the percentage of precipitation falling as snow. Snowpack levels are projected to decline significantly by 2100 due to reduced snowfall and faster snowmelt. California's water storage system is designed with the expectation that snow will stay frozen for many months, and that as it melts, it will be stored in a series of reservoirs and dams, many of which are used to generate electricity. Changing waterfall patterns therefore impact both water supply and electricity supply.
- Marine layer clouds are projected to decrease, though more research is needed to better understand their sensitivity to climate change.

- Extreme wildfires (i.e., fires larger than 10,000 hectares or 24,710 acres) would occur 50 percent more frequently. The maximum area burned statewide may increase 178 percent by the end of the century. Drought and reduced water supplies can increase wildfire risk.
- Exposure to wildfire smoke is linked to increased incidence of respiratory illness.
- Sea level rise is expected to continue to increase erosion of beaches, cliffs, and bluffs. (CalOES 2020).

Table 5.8-2, *Summary of GHG Emissions Risk to California*, shows the global climate change risks to California which include impacts public health, water resources, agriculture, coastal sea level, forest and biological resources, and energy.

TABLE 5.8-2 SUMMARY OF GHG EMISSIONS RISK TO CALIFORNIA

Impact Category	Potential Risks
Public Health Impacts	Heat waves will be more frequent, hotter, and longer Poor air quality made worse. Higher temperatures increase ground-level ozone (i.e., smog) levels
Water Resource Impacts	Decreasing Sierra Nevada snowpack Challenges in securing adequate water supply Potential reduction in hydropower Loss of winter recreation
Agricultural Impacts	Increasing temperature Increasing threats from pests and pathogens Expanded ranges of agricultural weeds Declining productivity Irregular blooms and harvests
Coastal Sea Level Impacts	Accelerated sea level rise. Increasing coastal floods Shrinking beaches Worsened impacts on infrastructure
Forest and Biological Resource Impacts	Increased risk and severity of wildfires Lengthening of the wildfire season Movement of forest areas Conversion of forest to grassland Declining forest productivity Increasing threats from pest and pathogens Shifting vegetation and species distribution Altered timing of migration and mating habits Loss of sensitive or slow-moving species
Energy Demand Impacts	Potential reduction in hydropower Increased energy demand

Sources: CEC 2006, 2009; CCCC 2012; CNRA 2014; CalEOS 2020

- **Water Resources Impacts.** By late this century, all projections show drying, and half of the projections suggest 30-year average precipitation will decline by more than 10 percent below the historical average. Even in projections with relatively little or no decline in precipitation, central and southern parts of the state are expected to be drier from the warming effects alone because the spring snowpack will melt sooner, and the moisture in soils will evaporate during long dry summer months.
- **Wildfire Risks.** Earlier snowmelt, higher temperatures, and longer dry periods over a longer fire season will directly increase wildfire risk. Indirectly, wildfire risk will also be influenced by potential climate-related changes in vegetation and ignition potential from lightning. Human activities will continue to be the biggest factor in ignition risk. The number of large fires statewide is estimated to increase by 58 percent to 128 percent above historical levels by 2085. Under the same emissions scenario, estimated burned area will increase by 57 percent to 169 percent, depending on location.
- **Health Impacts.** Many of the gravest threats to public health in California stem from the increase of extreme conditions, principally more frequent, more intense, and longer heat waves. Particular concern centers on the increasing tendency for multiple hot days in succession, and simultaneous heat waves in several regions throughout the state. Public health could also be affected by climate change impacts on air quality, food production, the amount and quality of water supplies, energy pricing and availability, and the spread of infectious diseases. Higher temperatures also increase ground-level ozone levels. Furthermore, wildfires can increase particulate air pollution in the major air basins of California.
- **Increase Energy Demand.** Increases in average temperature and higher frequency of extreme heat events combined with new residential development across the state will drive up the demand for cooling in the increasingly hot and longer summer season and decrease demand for heating in the cooler season. Warmer, drier summers also increase system losses at natural gas plants (reduced efficiency in the electricity generation process at higher temperatures) and hydropower plants (lower reservoir levels). Transmission of electricity will also be affected by climate change. Transmission lines lose 7 percent to 8 percent of transmitting capacity in high temperatures while needing to transport greater loads. This means that more electricity needs to be produced to make up for the loss in capacity and the growing demand (CCST 2012).

5.8.1.3 REGULATORY FRAMEWORK

Federal Regulations

The US Environmental Protection Agency (USEPA) announced on December 7, 2009, that GHG emissions threaten the public health and welfare of the American people and that GHG emissions from on-road vehicles contribute to that threat. The EPA's final findings respond to the 2007 U.S. Supreme Court decision that GHG emissions fit within the Clean Air Act definition of air pollutants. The findings do not impose any

emission reduction requirements but allow the EPA to finalize the GHG standards proposed in 2009 for new light-duty vehicles as part of the joint rulemaking with the Department of Transportation (USEPA 2009a).

To regulate GHGs from passenger vehicles, EPA was required to issue an endangerment finding (USEPA 2009b). The finding identified emissions of six key GHGs—CO_2, CH_4, N_2O, hydrofluorocarbons, perfluorocarbons, and SF_6—that have been the subject of scrutiny and intense analysis for decades by scientists in the United States and around the world. The first three are applicable to the proposed project's GHG emissions inventory because they constitute the majority of GHG emissions and, according to guidance by the Sacramento Metropolitan Air Quality Management District (SMAQMD), are the GHG emissions that should be evaluated as part of a project's GHG emissions inventory (SMAQMD 2021).

US Mandatory Report Rule for GHGs (2009)

In response to the endangerment finding, the EPA issued the Mandatory Reporting of GHG Rule that requires substantial emitters of GHG emissions (large stationary sources, etc.) to report GHG emissions data. Facilities that emit 25,000 MT or more of CO_2e per year are required to submit an annual report.

Update to Corporate Average Fuel Economy Standards (2017 to 2026)

The federal government issued new Corporate Average Fuel Economy (CAFE) standards in 2012 for model years 2017 to 2025, which required a fleet average of 54.5 miles per gallon (MPG) in 2025. However, on March 30, 2020, the EPA finalized an updated CAFE and GHG emissions standards for passenger cars and light trucks and established new standards covering model years 2021 through 2026, known as the Safer Affordable Fuel Efficient (SAFE) Vehicles Final Rule for Model Years 2021 to 2026. Under SAFE, the fuel economy standards will increase 1.5 percent per year compared to the 5 percent per year under the CAFE standards established in 2012. Overall, SAFE requires a fleet average of 40.4 MPG for model year 2026 vehicles (85 Federal Register 24174 (April 30, 2020)).

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

State Regulations

Current State of California guidance and goals for reductions in GHG emissions are embodied in EO S-03-05, EO B-30-15, EO B-55-18, Assembly Bill 32 (AB 32), AB 1279, Senate Bill 32 (SB 32), and SB 375.

Executive Order S-3-05

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

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

Assembly Bill 32, the Global Warming Solutions Act (2006)

AB 32 was passed by the California state legislature on August 31, 2006, to place the state on a course toward reducing its contribution of GHG emissions. AB 32 follows the 2020 tier of emissions reduction targets established in EO S 03 05. CARB prepared the 2008 Scoping Plan to outline a plan to achieve the GHG emissions reduction targets of AB 32.

Executive Order B-30-15 (2015)

EO B-30-15, signed April 29, 2015, set a goal of reducing GHG emissions in the state to 40 percent of 1990 levels by year 2030. Executive Order B-30-15 also directed CARB to update the Scoping Plan to quantify the 2030 GHG reduction goal for the state and requires state agencies to implement measures to meet the interim 2030 goal as well as the long-term goal for 2050 in EO S-03-05. It also requires the Natural Resources Agency to conduct triennial updates of the California adaption strategy, *Safeguarding California*, in order to ensure climate change is accounted for in state planning and investment decisions.

Senate Bill 32 and Assembly Bill 197

In September 2016, Governor Brown signed SB 32 and AB 197 into law, making the executive order goal for year 2030 into a statewide mandated legislative target. AB 197 established a joint legislative committee on climate change policies and requires the CARB to prioritize direct emissions reductions rather than the market-based cap-and-trade program for large stationary, mobile, and other sources.

Assembly Bill 1279, the California Climate Crisis Act

AB 1279 declares the state to achieve net zero greenhouse gas emissions by 2045 and maintain a negative greenhouse gas emissions thereafter, and to ensure that by 2045, statewide anthropogenic greenhouse gas emissions are reduced to at least 85 percent below the 1990 levels.

2017 Climate Change Scoping Plan Update

EO B-30-15 and SB 32 required CARB to prepare another update to the Scoping Plan to address the 2030 target for the state. On December 24, 2017, CARB adopted the 2017 Climate Change Scoping Plan Update, which outlined potential regulations and programs, including strategies consistent with AB 197 requirements, to achieve the 2030 target. The 2017 Scoping Plan established a new emissions limit of 260 $MMTCO_2e$ for the year 2030, which corresponds to a 40 percent decrease in 1990 levels by 2030 (CARB 2017b).

California's climate strategy will require contributions from all sectors of the economy, including an enhanced focus on zero- and near-zero emission (ZE/NZE) vehicle technologies; continued investment in renewables, such as solar roofs, wind, and other types of distributed generation; greater use of low carbon fuels; integrated land conservation and development strategies; coordinated efforts to reduce emissions of short-lived climate pollutants (methane, black carbon, and fluorinated gases); and an increased focus on integrated land use planning, to support livable, transit-connected communities and conservation of agricultural and other lands. Requirements for GHG reductions at stationary sources complement local air pollution control efforts by the local air districts to tighten criteria air pollutants and toxic air contaminants emissions limits on a broad spectrum of industrial sources. Major elements of the 2017 Scoping Plan framework include:

- Implementing and/or increasing the standards of the Mobile Source Strategy, which include increasing ZE buses and trucks.
- Low Carbon Fuel Standard (LCFS), with an increased stringency (18 percent by 2030).
- Implementation of SB 350, which expands the Renewables Portfolio Standard (RPS) to 50 percent RPS and doubles energy efficiency savings by 2030.
- California Sustainable Freight Action Plan, which improves freight system efficiency, utilizes near-zero emissions technology, and deployment of ZE trucks.
- Implementing the Short-Lived Climate Pollutant Strategy, which focuses on reducing methane and hydrofluorocarbon emissions by 40 percent and anthropogenic black carbon emissions by 50 percent by year 2030.
- Post-2020 Cap-and-Trade Program that includes declining caps.
- Continued implementation of SB 375.
- Development of a Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

To the degree a project relies on GHG mitigation measures, CARB recommends that lead agencies prioritize on-site design features that reduce emissions, especially from vehicle miles traveled (VMT), and direct investments in GHG reductions within the project's region that contribute to potential air quality, health, and economic co-benefits. Where further project design or regional investments are infeasible or not

proven to be effective, CARB recommends mitigating potential GHG impacts through purchasing and retiring carbon credits (CARB 2017b).

Executive Order B-55-18

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

2022 Climate Change Scoping Plan Update

CARB released the Draft 2022 Scoping Plan on May 10, 2022. The Scoping Plan was updated to address the carbon neutrality goals of EO B-55-18. Previous Scoping Plans focused on specific GHG reduction targets for our industrial, energy, and transportation sectors—to meet 1990 levels by 2020, and then the more aggressive 40 percent below that for the 2030 target. Carbon neutrality takes it one step further by expanding actions to capture and store carbon including through natural and working lands and mechanical technologies, while drastically reducing anthropogenic sources of carbon pollution at the same time. The measures in the Scoping Plan would achieve 80 percent below 1990 levels by 2050. Final adoption of the 2022 Scoping Plan is anticipated in late fall 2022 (CARB 2022).

CARB's 2022 Scoping Plan identifies strategies that would be most impactful at the local level for ensuring substantial process towards the State's carbon neutrality goals (see Table 5.8-3, *Priority Strategies for Local Government Climate Action Plans*).

TABLE 5.8-3 PRIORITY STRATEGIES FOR LOCAL GOVERNMENT CLIMATE ACTION PLANS

Priority Area	Priority Strategies
Transportation Electrification	Convert local government fleets to zero-emission vehicles (ZEV).
	Create a jurisdiction-specific ZEV ecosystem to support deployment of ZEVs statewide (such as permit streamlining, infrastructure siting, consumer education, or preferential parking policies).
VMT Reduction	Reduce or eliminate minimum parking standards in new developments,
	Adopt and implement Complete Streets policies and investments, consistent with general plan circulation element requirements,
	Increase public access to shared clean mobility options (such as planning for and investing in electric shuttles, bike share, car share, transit).
	Implement parking pricing or transportation demand management pricing strategies.
	Amend zoning or development codes to enable mixed-use, walkable, and compact infill development (such as increasing allowable density of the neighborhood).
	Preserve natural and working lands.
Building Decarbonization	Adopt policies and incentive programs to implement energy efficiency retrofits (such as weatherization, lighting upgrades, replacing energy intensive appliances and equipment with more efficient systems, etc.).
	Adopt policies and incentive programs to electrify all appliances and equipment in existing buildings.
	Adopt policies and incentive programs to reduce electrical loads from equipment plugged into outlets (such as purchasing Energy Star equipment for municipal buildings, occupancy sensors, smart power strips, equipment controllers, etc.).
	Facilitate deployment of renewable energy production and distribution and energy storage.

Source: CARB 2022

For CEQA projects for proposed land use developments, CARB recommends demonstrating that they are aligned with State climate goals based on the attributes of land use development that reduce operational GHG emissions while simultaneously advancing fair housing. Attributes that accommodate growth in a manner consistent with the GHG and equity goals of SB 32 have all the following attributes:

- At least 20 percent of the units are affordable to lower-income residents;
- Result in no net loss of existing affordable units;
- Utilize existing infill sites that are surrounded by urban uses, and reuse or redevelop previously developed, underutilized land presently served by existing utilities and essential public services (e.g., transit, streets, water, sewer);
- Include transit-supportive densities (minimum of 20 residential dwelling units/acre), or are in proximity to existing transit (within ½ mile), or satisfy more detailed and stringent criteria specified in the region's Sustainable Communities Strategy (SCS), for "SCS consistency" that would go further to reduce emissions;
- Do not result in the loss or conversion of the State's natural and working lands;

- Use all electric appliances, without any natural gas connections, and would not use propane or other fossil fuels for space heating, water heating, or indoor cooking
- Provide EV charging infrastructure at least in accordance with the California Green Building Standards Code (CALGreen) Tier 2 standards; and
- Relax parking requirements by:
    - Eliminating parking requirements or including maximum allowable parking ratios.
    - Providing residential parking supply at a ratio of <1 parking space per unit.
    - Unbundling residential parking costs from costs to rent or lease. (CARB 2022)

The second approach to project-level alignment with State climate goals is net zero GHG emissions. The third approach to demonstrating project-level alignment with State climate goals is to align with GHG thresholds of significance, which many local air quality management (AQMDs) and air pollution control districts (APCDs) have developed or adopted (CARB 2022).

Assembly Bill 1279

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

Senate Bill 375

SB 375, the Sustainable Communities and Climate Protection Act, adopted in 2008 to connect the GHG emissions reduction targets established in the 2008 Scoping Plan for the transportation sector to local land use decisions that affect travel behavior. Its intent is to reduce GHG emissions from light-duty trucks and automobiles (excludes emissions associated with goods movement) by aligning regional long-range transportation plans, investments, and housing allocations to local land use planning to reduce VMT and vehicle trips. Specifically, SB 375 required CARB to establish GHG emissions reduction targets for each of the 18 metropolitan planning organizations (MPO). Metropolitan Transportation Commission (MTC) is the MPO for the Bay region, which includes Napa, Marin, San Francisco, and Contra Costa counties. Pursuant to the recommendations of the Regional Transportation Advisory Committee, CARB adopted per capita reduction targets for each of the MPOs rather than a total magnitude reduction target.

2017 Update to the SB 375 Targets

CARB is required to update targets for the MPOs every eight years. In June 2017, CARB released updated targets and technical methodology and recently released another update in February 2018, which became effective in October 2018. CARB adopted the updated targets and methodology on March 22, 2018. All SCSs adopted after October 1, 2018, are subject to these new targets. The updated targets consider the need to

further reduce VMT, as identified in CARB's Scoping Plan, while balancing the need for additional and more flexible revenue sources to incentivize positive planning and action toward sustainable communities. Like the 2010 targets, the updated SB 375 targets are in units of percent per capita reduction in GHG emissions from automobiles and light trucks compared to 2005. This excludes reductions anticipated from implementation of state technology and fuels strategies and any potential future state strategies such as statewide road user pricing. The proposed targets call for greater per-capita GHG emission reductions from SB 375 than are currently in place, which for 2035 translates into proposed targets that either match or exceed the emission reduction levels in the MPOs' currently adopted sustainable communities' strategies (SCS). As proposed, CARB staff's proposed targets would result in an additional reduction of over 8 $MMTCO_2e$ in 2035 compared to the current targets (CARB 2018).

Transportation Sector Specific Regulations

Assembly Bill 1493

California vehicle GHG emission standards were enacted under AB 1493 (Pavley I). Pavley I is a clean-car standard that reduces GHG emissions from new passenger vehicles (light-duty auto to medium-duty vehicles) from 2009 through 2016 and is anticipated to reduce GHG emissions from new passenger vehicles by 30 percent in 2016. California implements the Pavley I standards through a waiver granted to California by the EPA. In 2012, the EPA issued a Final Rulemaking that sets even more stringent fuel economy and GHG emissions standards for model years 2017 through 2025 light-duty vehicles. (See also the previous discussion in federal regulations under "Update to Corporate Average Fuel Economy Standards [2017 to 2026].") In January 2012, CARB approved the Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025. The program combines the control of smog, soot, and GHGs with requirements for greater numbers of ZE vehicles into a single package of standards. Under California's Advanced Clean Car program, by 2025 new automobiles will emit 34 percent less GHG emissions and 75 percent less smog-forming emissions.

Executive Order S-01-07

On January 18, 2007, the state set a new LCFS for transportation fuels sold in the state. EO S-01-07 set a declining standard for GHG emissions measured in CO_2e gram per unit of fuel energy sold in California. The LCFS required a reduction of 2.5 percent in the carbon intensity of California's transportation fuels by 2015 and a reduction of at least 10 percent by 2020. The standard applied to refiners, blenders, producers, and importers of transportation fuels, and used market-based mechanisms to allow these providers to choose the most economically feasible methods for reducing emissions during the "fuel cycle."

Executive Order B-16-2012

On March 23, 2012, the state identified that CARB, the California Energy Commission (CEC), the Public Utilities Commission, and other relevant agencies worked with the Plug-in Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks to accommodate ZE vehicles in major

metropolitan areas, including infrastructure to support them (e.g., electric vehicle charging stations). EO B 16-2012 also directed the number of ZE vehicles in California's state vehicle fleet to increase through the normal course of fleet replacement so that at least 10 percent of fleet purchases of light-duty vehicles are ZE by 2015 and at least 25 percent by 2020. The executive order also established a target for the transportation sector of reducing GHG emissions to 80 percent below 1990 levels.

Executive Order N-79-20

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

Renewables Portfolio: Carbon Neutrality Regulations

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

A major component of California's Renewable Energy Program is the renewables portfolio standard established under Senate Bills 1078 and 107. Under the RPS, certain retail sellers of electricity were required to increase the amount of renewable energy each year by at least 1 percent to reach at least 20 percent by December 30, 2010. EO S-14-08, signed in November 2008, expanded the state's renewable energy standard to 33 percent renewable power by 2020. This standard was adopted by the legislature in 2011 (SB X1-2). Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. The increase in renewable sources for electricity production decreases indirect GHG emissions from development projects because electricity production from renewable sources is generally considered carbon neutral.

Senate Bill 350

Senate Bill 350 was signed into law in September 2015 and establishes tiered increases to the RPS—40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. SB 350 also set a new goal to double the energy-efficiency savings in electricity and natural gas through energy efficiency and conservation measures.

Senate Bill 100

On September 10, 2018, Governor Brown signed SB 100. Under SB 100, the RPS for public-owned facilities and retail sellers consists of 44 percent renewable energy by 2024, 52 percent by 2027, and 60 percent by 2030. SB 100 also established a new RPS requirement of 50 percent by 2026. Furthermore, the bill establishes an overall state policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of

electricity procured to serve all state agencies by December 31, 2045. Under the bill, the state cannot increase carbon emissions elsewhere in the western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target.

Senate Bill 1020

SB 1020 was signed into law on September 16, 2022. SB 1020 provides interim RPS targets (90 percent renewable energy by 2035 and 95 percent renewable energy by 2040) and requires renewable energy and zero-carbon resources to reach 100 percent clean electricity by 2045.

Energy Efficiency Regulations

California Building Energy Efficiency Standards

Energy conservation standards for new residential and nonresidential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the CEC) in June 1977 (Title 24, Part 6, of the California Code of Regulations [CCR]). Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for the consideration and possible incorporation of new energy efficiency technologies and methods.

The 2022 Building Energy Efficiency Standards were adopted on August 11, 2021, and went into effect on January 1, 2023. The 2022 standards encourage efficient electric heat pumps, establishes electric-ready requirements for new homes, expands solar photovoltaic and battery storage standards, strengthens ventilation standards, and more. The 2022 standards require mixed-fuel single-family homes to be electric-ready to accommodate replacement of gas appliances with electric appliances. In addition, the standards also include prescriptive photovoltaic system and battery requirements for high-rise, multifamily buildings (i.e., more than three stories) and noncommercial buildings such as hotels, offices, medical offices, restaurants, retail stores, schools, warehouses, theaters, and convention centers.

California Building Code: CALGreen

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (24 CCR, Part 11, known as "CALGreen") was adopted as part of the California Building Standards Code. CALGreen established planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants. The green building standards became mandatory in the 2010 edition of the code. The mandatory provisions of CALGreen became effective January 1, 2011, and were last updated in 2022. The 2022 CALGreen standards became effective on January 1, 2023.

2006 Appliance Efficiency Regulations

The 2006 Appliance Efficiency Regulations (20 CCR Sections 1601–1608) were adopted by the CEC on October 11, 2006, and approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally regulated appliances and non–federally regulated appliances. Though these regulations are now often viewed as "business as usual," they exceed the standards imposed by all other states, and they reduce GHG emissions by reducing energy demand.

Solid Waste Diversion Regulations

AB 939: Integrated Waste Management Act of 1989

California's Integrated Waste Management Act of 1989 (AB 939, Public Resources Code Section 40050 et seq.) set a requirement for cities and counties throughout the state to divert 50 percent of all solid waste from landfills by January 1, 2000, through source reduction, recycling, and composting. In 2008, the requirements were modified to reflect a per capita requirement rather than tonnage. To help achieve this, the Act requires that each city and county prepare and submit a source reduction and recycling element. AB 939 also established the goal for all California counties to provide at least 15 years of ongoing landfill capacity.

AB 341

AB 341 (Chapter 476, Statutes of 2011) increased the statewide goal for waste diversion to 75 percent by 2020 and requires recycling of waste from commercial and multifamily residential land uses. Section 5.408 of CALGreen also requires that at least 65 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse.

AB 1327

The California Solid Waste Reuse and Recycling Access Act (AB 1327, Public Resources Code Section 42900 et seq.) requires areas to be set aside for collecting and loading recyclable materials in development projects. The act required the California Integrated Waste Management Board to develop a model ordinance for adoption by any local agency requiring adequate areas for collection and loading of recyclable materials as part of development projects. Local agencies are required to adopt the model or an ordinance of their own.

AB 1826

In October of 2014, Governor Brown signed AB 1826 requiring businesses to recycle their organic waste on and after April 1, 2016, depending on the amount of waste they generate per week. This law also requires that on and after January 1, 2016, local jurisdictions across the state implement an organic waste recycling program to divert organic waste generated by businesses and multifamily residential dwellings with five or

more units. Organic waste means food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed with food waste.

Water Efficiency Regulations

SBX7-7

The 20x2020 Water Conservation Plan was issued by the Department of Water Resources (DWR) in 2010 pursuant to Senate Bill 7, which was adopted during the 7th Extraordinary Session of 2009–2010 and therefore dubbed "SBX7-7." SBX7-7 mandated urban water conservation and authorized the DWR to prepare a plan implementing urban water conservation requirement (20x2020 Water Conservation Plan). In addition, it required agricultural water providers to prepare agricultural water management plans, measure water deliveries to customers, and implement other efficiency measures. SBX7-7 required urban water providers to adopt a water conservation target of a 20 percent reduction in urban per capita water use by 2020 compared to 2005 baseline use.

AB 1881: Water Conservation in Landscaping Act

The Water Conservation in Landscaping Act of 2006 (AB 1881) requires local agencies to adopt the updated DWR model ordinance or an equivalent. AB 1881 also requires the CEC to consult with the DWR to adopt, by regulation, performance standards and labeling requirements for landscape irrigation equipment, including irrigation controllers, moisture sensors, emission devices, and valves, to reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy or water.

Short-Lived Climate Pollutant Reduction Strategy

On September 19, 2016, the Governor signed SB 1383 to supplement the GHG reduction strategies in the Scoping Plan to consider short-lived climate pollutants, including black carbon and methane. Black carbon is the light-absorbing component of fine particulate matter produced during the incomplete combustion of fuels. SB 1383 required the state board, no later than January 1, 2018, to approve and begin implementing a comprehensive strategy to reduce emissions of short-lived climate pollutants to achieve a reduction in methane by 40 percent, hydrofluorocarbon gases by 40 percent, and anthropogenic black carbon by 50 percent below 2013 levels by 2030. The bill also established targets for reducing organic waste in landfills. On March 14, 2017, CARB adopted the Short-Lived Climate Pollutant Reduction Strategy, which identifies the state's approach to reducing anthropogenic and biogenic sources of short-lived climate pollutants. Anthropogenic sources of black carbon include on- and off-road transportation, residential wood burning, fuel combustion (charbroiling), and industrial processes. According to CARB, ambient levels of black carbon in California are 90 percent lower than in the early 1960s, despite the tripling of diesel fuel use (CARB 2017a). In-use on-road rules were expected to reduce black carbon emissions from on-road sources by 80 percent between 2000 and 2020.

Regional Regulations

Shasta County Air Quality Management District

The Shasta County Air Quality Management District (SCAQMD) does not have an adopted Climate Action Plan, greenhouse gas threshold of significance, or guidance for assessing GHG emission impacts under CEQA.

Shasta Regional Transportation Agency

In October 2018, Shasta Regional Transportation Agency (SRTA) adopted the 2018 Regional Transportation Plan (RTP) for Shasta County, which contains SRTA's Sustainable Communities Strategy (SCS). The 2018 RTP includes an updated SCS as required by California Senate Bill 375, the Sustainable Communities and Climate Protection Act of 2008 (SB 375). The per-capita regional emission reduction target set by CARB under the purview of SB 375 are as follows:

- 0 percent (no increase) below 2005 rates by 2020
- 0 percent (no increase) below 2005 rates by 2035

As a result of the SCS development process, seven Strategic Growth Areas (SGAs) were included in the final SCS. Factors included in the SCS and utilized in travel demand and emissions modeling include:

- Population and employment shift to SGAs
- Increased residential densities in the SGAs
- Increased automobile operating costs
- Increased public transportation services frequency plus on-demand transit
- Accelerated delivery of active transportation investment in SGAs with an emphasis on transformational projects and programs that expand accessibility to all ages and abilities
- Accelerated adoption of plug-in electric vehicles

The project includes the Downtown Redding SGA. Therefore, the 2018 RTP/SCS recommendation for increased density would apply to the project in the downtown area.

The County is currently in the process of updating and accepting public comments on the 2022 Regional Transportation Plan/Sustainable Communities Strategy (2022 RTP/SCS) (SRTA 2023).

Local Regulations

2000-2020 General Plan

The existing General Plan does not contain goals or policies directly aimed at reducing greenhouse gas emissions. However, goals and policies within the Community Development and Design Element, Transportation Element, and Air Quality Element indirectly affect or reduce greenhouse gas generation by requiring or promoting alternative transit infrastructure.

Community Development and Design Element

- Goal CDD10: Provide for a pattern that: establishes distinct neighborhoods, districts, and activity centers; promotes mixed-use development; places employment, shopping, and other activity centers in or near residential neighborhoods; encourages walking, bicycling, and transit use.
    - Policy CDD10F: Provide comprehensive transportation facilities, including bicycle and pedestrian routes. Integrate pedestrian and bicycle routes into developments to provide alternative access to public and private parks and open space, transit stops, nearby commercial developments, and schools.

Transportation Element

- Goal T1: Provide safe, efficient, and comfortable routes for walking, bicycling, and public transportation to increase the use of these modes of transportation, enable convenient and active travel as part of daily activities, and meet the needs of all users of the streets.
    - Policy T1A: Ensure that multimodal infrastructure improves transportation choices for pedestrians, bicyclists, motorists, and public transportation riders of all ages and abilities and that all users are considered and included in the planning, design, approval, construction, and operation of new streets, and the alteration and maintenance phases of existing streets by:
        - Including infrastructure that promotes a safe means of travel for all users along the right of way, such as sidewalks, shared-use paths, bicycle lanes, and paved shoulders.
        - Provide pedestrian and bike connections from developments to adjacent main streets, open space areas, parks, transit stops, schools, commercial and employment centers, and other activity centers as opportunities arise.
        - Designing new development to incorporate street connectivity for all users.
        - Including new or alteration of existing infrastructure that facilitates safe crossing of the right-of-way for all users, such as: accessible curb ramps, high-visibility crosswalks, pedestrian refuge islands, smaller curb radii, corner bulbouts, pedestrian signals, and bicycle detection at traffic signals where warranted.

- Incorporating street design features and techniques that promote safe and comfortable travel along streets by pedestrians, bicyclists, and public transportation riders. Examples include: constructing traffic-calming mechanisms in neighborhoods; providing pedestrian refuge medians on busy streets; reducing the number of motor vehicle lanes and/or widths where appropriate; providing transit turnouts; and constructing physical buffers and separations between vehicular traffic and other users.
- Providing features that improve the comfort, convenience, and safety of users such as pedestrian-oriented/wayfinding signs, pedestrian-scale lighting, benches and other street furniture, bicycle parking facilities, comfortable and attractive public transportation stops and facilities, street trees, landscape, and planting strips.

- Goal T5: Coordinate transportation and land use planning; protect existing and planned land uses from transportation-related conflicts; promote multi-modal transportation options.
  - Policy T5D: Encourage employers to provide incentives for employees utilizing alternatives to the single-occupant automobile, such as car pools, van pools, buses, bicycling, and walking
  - Policy T5E: Encourage employers, including government agencies, to allow telecommuting and flex time and to promote staggered shifts or base work hours that do not coincide with peak-period traffic to reduce peak-hour trips.
  - Policy T10A: Provide pedestrian-oriented features, such as benches, enhanced landscape, and trash receptacles, in commercial areas, particularly in the Downtown and Park Marina areas.
  - Policy T10B: Require new development to provide sidewalks or other pedestrian dedicated facilities on both sides of new public streets. Exceptions may be appropriate where topography is difficult, proposed lots are of a rural or semi-rural nature, or where the development plan illustrates that pedestrians will be accommodated by alternative means.
  - Policy T10F: Require all new or renovated pedestrian facilities to be of a sufficient width to ensure pedestrian comfort and safety and to accommodate the special needs of the physically disabled.
- Goal T12: Make it easier and safer for people to travel by bicycle.
  - Policy T12G: Require new development to provide bicycle facilities or pay in-lieu fees based on the fair share of that development's impacts on the bikeway system and needs identified on the Comprehensive Bikeway Plan.

Air Quality Element

- Goal 2: Reduce motor vehicle trips and vehicle miles travelled and increase average vehicle ridership (AVR).
    - Policy 17 Transit and Pedestrian-Oriented Design Guidelines: The City shall make air quality and mobility prime considerations when reviewing any proposed change to the land-use pattern. Such consideration shall include, as much as possible, increased transit and pedestrian mobility. This step shall be part of the CEQA process and apply reasonable Best Available Mitigation Measures (BAMM) to projects that exceed the significance thresholds promulgated by the Air Quality Management District.

Redding Municipal Code

The Redding Municipal Code includes various directives to minimize adverse impacts from GHG emissions in the City of Redding as listed below:

- Chapter 16.08, California Green Building Standards Code: incorporates the CCR Title 24, Part 11, California Green Building Standards Code.
- Chapter 16.02, Building Code: Section 16.03.020, Small residential rooftop solar energy systems, allows for an expedited review of effective installations of small residential rooftop solar energy systems.

The California Green Building Standards represents the first-in-the-nation mandatory green building standards code that aims to reduce GHG emissions from the built environment and often includes requirements for the installation of solar panels and other renewable energy and energy-efficient designs and technologies.

5.8.1.4 EXISTING CONDITIONS

Climate and Meteorology

The proposed Project is located at the northern end of the Northern Sacramento Valley Air Basin (NSVAB). The NSVAB consist of seven counties: Sutter, Yuba, Butte, Glenn, Tehama, and Shasta. The prevailing winds in the area are from the south and southwest. Sea breezes flow over the San Francisco Bay Area and into the Sacramento Valley, transporting pollutants from the large urban areas. Growth and urbanization in Shasta County have also contributed to an increase in emissions.

California's GHG Sources and Relative Contribution

In 2021, the statewide GHG emissions inventory was updated for 2000 to 2019 emissions using the GWPs in IPCC's AR4 (IPCC 2013). Based on these GWPs, California produced 418.2 MMTCO2e GHG emissions in 2019. California's transportation sector was the single largest generator of GHG emissions, producing 39.7

percent of the state's total emissions. Industrial sector emissions made up 21.1 percent, and electric power generation made up 14.1 percent of the state's emissions inventory. Other major sectors of GHG emissions include commercial and residential (10.5 percent), agriculture and forestry (7.6 percent), high GWP (4.9 percent), and recycling and waste (2.1 percent) (CARB 2021).

Since the peak level in 2004, California's GHG emissions have followed a decreasing trend. In 2016, California statewide GHG emissions dropped below the AB 32 target for year 2020 of 431 MMTCO2e and have remained below this target since then. In 2019, emissions from routine GHG-emitting activities statewide were almost 13 MMTCO2e lower than the AB 32 target for year 2020. Per capita GHG emissions in California have dropped from a 2001 peak of 14.0 MTCO2e per person to 10.5 MTCO2e per person in 2019, a 25 percent decrease.

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

Existing Communitywide GHG Emissions

The existing land uses in Redding consist of single- and multifamily residences, retail, office, commercial, industrial, and institutional uses. Operation of these land uses generates GHG emissions from natural gas used for energy, heating, and cooking; electricity usage; vehicle trips for employees and residents; area sources such as landscaping equipment and consumer cleaning products; water demand; waste generation; and solid waste generation.[3] Table 5.8-4, *Existing City of Redding GHG Emissions Inventory,* shows the emissions associated with existing land uses in the city.

[3] Emissions from water demand and wastewater are emissions associated with electricity used to supply, treat, and distribute water.

TABLE 5.8-4 EXISTING CITY OF REDDING GHG EMISSIONS INVENTORY

Sector	Existing $MTCO_2e$/year	Percent of Total
Building Electricity	126,196	21.7%
Building Natural Gas	84,924	14.6%
Building Propane Fuel	867	0.1%
On-Road Transportation	236,188	40.7%
Off-Road Vehicles and Equipment[2]	24,513	4.2%
Solid Waste / Landfills	8,778	1.5%
Refrigerants	45,162	7.8%
Water Use	2,435	0.4%
Wastewater Treatment	51,295	8.8%
Total	**580,360**	**100%**
Service Population	149,415	NA
$MTCO_2e$/SP	3.9	NA

Source: Appendix 5.3-1.
Note: Totals may not add to 100 percent due to rounding.

5.8.2 THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the State CEQA Guidelines, the proposed Project would have a significant impact if it would:

GHG-1 Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

GHG-2 Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

GHG-3 In combination with past, present, and reasonably foreseeable projects, result in cumulative impacts with respect to greenhouse gas emissions.

Determining Significance Thresholds

SCAQMD has not formally adopted GHG thresholds. In the context of CEQA, a project that achieves "no net increase" from the CEQA baseline would not result in significant GHG impacts. This is reiterated in the Natural Resources Agency's 2009 Final Statement of Reasons pursuant to Senate Bill 97, which states that: "section 15054.4(b)(1) is not intended to imply a zero net emissions threshold of significance. As case law makes clear, there is no 'one molecule' rule in CEQA." Consequently, a zero net increase in GHG emissions is used to determine whether the project would result in a substantial increase in GHG emissions.

This analysis also assesses the potential for the project to conflict with the GHG reduction goals established by the State under AB 1279, which requires an 85 percent reduction in statewide GHG emissions from 1990 levels and a statewide goal for carbon neutrality by year 2045. Because the City's 1990 emission inventory is unknown, the City's existing emissions inventory (year 2020) is used herein as the emissions baseline from which the AB 1279 target of an 85-percent reduction is based on. Given that the State's carbon neutrality goals cannot be achieved without carbon dioxide removal (CDR), which is outside of the jurisdictional control of cities and counties, this CEQA document evaluates consistency with the 85 percent reduction from 2020 levels and substantial progress toward the State's carbon neutrality goals. Based on the City's existing emissions inventory (2020), an 85 percent reduction in emissions from 2020 levels would be 87,054 $MTCO_2e$ by 2045.

Mass Emissions and Health Effects

On December 24, 2018, in the case, *Sierra Club et al. v. County of Fresno et al.* (Friant Ranch), the California Supreme Court determined that the EIR for the proposed Friant Ranch project failed to adequately analyze the project's air quality impacts on human health. The EIR prepared for the project, which involved a master planned retirement community in Fresno County, showed that project-related mass emissions would exceed the San Joaquin Valley Air Pollution Control District's regional significance thresholds. In its findings, the California Supreme Court affirmed the holding of the Court of Appeal that EIRs for projects must not only identify impacts to human health, but also provide an "analysis of the correlation between the project's emissions and human health impacts" related to each criteria air pollutant that exceeds the regional significance thresholds or explain why it could not make such a connection. In general, the ruling focuses on the correlation of emissions of toxic air contaminants and criteria air pollutants and their impact to human health.

In 2009, the EPA issued an endangerment finding for six GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) in order to regulate GHG emissions from passenger vehicles. The endangerment finding is based on evidence that shows an increase in mortality and morbidity associated with increases in average temperatures, which increase the likelihood of heat waves and ozone levels. The effects of climate change are identified in Table 5.8-2. While these identified effects such as sea level rise and increased in extreme weather, can indirectly impact human health, neither the EPA nor CARB has established ambient air quality standards for GHG emissions. The State's GHG reduction strategy outlines a path to avoid the most catastrophic effects of climate change. Yet the State's GHG reduction goals and strategies are based on the State's path toward reducing statewide cumulative GHGs as outlined in AB 32, SB 32, AB 1279, and EO B-55-18.

As mentioned above, the two significance thresholds that the City uses to analyze GHG impacts are based on achieving the statewide GHG reduction goals (GHG-1) and relying on consistency with policies or plans adopted to reduce GHG emissions (GHG-2). Further, because no single project is large enough to result in a measurable increase in global concentration of GHG emissions, climate change impacts of a project are considered on a cumulative basis. Without federal ambient air quality standards for GHG emissions and given the cumulative nature of GHG emissions and the City's significance thresholds that are tied to

reducing the State's cumulative GHG emissions, it is not feasible at this time to connect the project's specific GHG emissions to the potential health impacts of climate change.

5.8.3 PROPOSED GENERAL PLAN POLICIES

Community Design and Development Element

- Policy CDD10C: Consider establishing incentives for medium- to high-density, mixed-use developments, where appropriate, with emphasis on Downtown and in the "Mixed Use Neighborhood Overlay" Districts. Review and amend as necessary the Mixed Use Neighborhood Overlay zoning district to ensure that it serves to facilitate and incentivize the development of new mixed use neighborhoods to the extent feasible.
- Policy CDD10D: Encourage development in the City to include inviting, attractive, accessible, and walkable urban mixed-use neighborhoods combining residential, commercial, recreational, open space, and employment to maximize the use of underused urban lots.
- Policy CDD11A: Encourage developers to create new residential developments in infill priority areas that are available to a broad segment of the community. The developments should be pedestrian and bicycle friendly, to make efficient use of available infrastructure and at densities that will help facilitate the provision and use of public transit where it is available.
- Policy CDD11C: Consider developing form-based codes specific to infill priority areas and develop small lot zoning standards for existing lots below the City's minimum lot size to facilitate residential development in infill priority areas.
- Policy CDD11D: Explore options for incentivizing parcel assemblage in infill priority areas to support residential and mixed-use developments.
- Policy CDD111E: Facilitate to the extent feasible, the construction of new affordable housing units that are within walking distance of transit, everyday services, schools, and employment centers.
- Policy CDD11K: Provide opportunities to develop multiple-family housing throughout the community, and especially near arterial streets, Downtown, major commercial areas, and neighborhood commercial areas.

Community Health, Wellness, and Environmental Justice Element

- Policy EJ3C: Partner with local, regional, and federal agencies to seek grants and other opportunities towards the development and expansion of clean air centers, building ventilation upgrades, and other available and accessible technological advancements to provide better air quality and to reduce negative health impacts during wildfires and extreme weather events.
- Policy EJ3E: Consider the development and adoption of a Climate Action and Resiliency Plan. Support plans, standards, regulations, incentives, investments, and seek grants and other funding to reduce the impacts of climate change on vulnerable residents.

- **Policy EJ3F:** Work with Shasta County Air Quality Management District or other appropriate entities to develop a public information campaign to educate residents on the risks and mitigation measures; to be undertaken when living within 1,000 feet of a freeway.
- **Policy EJ3G:** Monitor changes in technology that will prevent and mitigate transportation-related noise and air quality impacts on residential and sensitive uses in the community. Support traffic and highway improvements that will reduce noise and air quality impacts of vehicles. Alternatives to sound walls should be considered where possible.

Public Safety Element

- **Policy PS10D**: Partner with local, regional, and federal agencies, as appropriate, to seek grants and other opportunities towards development and expansion of clean air centers, building ventilation upgrades, and other available and accessible technological advancements to provide better air quality to vulnerable residents to reduce negative health impacts of wildfires.

Transportation Element

- **Policy T1A**: Strive to ensure that where complete streets infrastructure is constructed, it improves transportation choices for pedestrians, bicyclists, motorists, and public transportation riders and that users of all ages and abilities are considered in the planning, design, approval, construction, and operation of new streets, and the alteration and maintenance phases of existing streets by:
    - Including infrastructure that promotes a safe means of travel for all users along the right of way, such as sidewalks, shared-use paths, bicycle lanes (including protected bicycle lanes or buffered bicycle lanes where feasible) or paved shoulders.
    - Providing pedestrian and bike connections from developments to adjacent main streets, open space areas, parks, transit stops, schools, commercial and employment centers, and other activity centers as opportunities arise.
    - Designing new development to incorporate street connectivity for all users.
    - Including new or alteration of existing infrastructure that facilitates safe crossing of the right-of-way for all users, such as: accessible curb ramps, high-visibility crosswalks, pedestrian refuge islands, smaller curb radii, corner bulbouts, pedestrian signals, and bicycle detection at traffic signals where warranted.
    - Incorporating features that improve the comfort, convenience, and safety of users such as pedestrian-oriented/wayfinding signs, pedestrian-scale lighting, benches and other street furniture, bicycle parking facilities, comfortable and attractive public transportation stops and facilities, street trees, landscape, and planting strips.
- **Policy T1B:** Seek funding to establish a systematic complete street retrofit program that will effectively alter existing appropriately identified streets into complete streets.

- Policy T1C: Update the Redding Active Transportation Plan every four to seven years to ensure successful implementation of the City's planned bicycle and pedestrian networks by undertaking the following:
    - Work to identify and prioritize physical improvements that would make bicycle and pedestrian travel safer along current key bicycling and walking routes.
    - Pursue an implementation strategy to construct needed improvements.
    - Undertake improvements as part of street projects where reasonable and feasible.
- Policy T1D: Consider requiring that development projects dedicate street rights-of-way and construct both on- and off-site improvements as appropriate to provide access and street connectivity for users of all ages and abilities, mitigate the effects of vehicle miles traveled (VMT) attributable to the project, and not degrade peak-hour LOS below the following adopted thresholds nor conflict with multi-modal performance standards. The City Council may, at its sole discretion, determine that the degradation of LOS is appropriate given the extraordinary circumstances of the project being proposed. The traffic analysis used to establish mitigation or improvement measures shall be based on the regional travel demand model or other City-approved methods. At the option of the City and as may be provided by City ordinance, improvements may be deferred by the City upon approval of a Deferred Improvement Plan which identifies improvements needed, costs, funding sources, and other pertinent data required by the City.
- Policy T1E: Strive to complete the planned build-out street network as illustrated on the Circulation Plan map, and ensure that the accompanying design standards, programs, and procedures include complete streets implementation as a main focus by undertaking the following measures.
    - Review as necessary the City's design guidelines and standard cross-sections for streets, intersections (including roundabouts and traffic circles), pedestrian facilities, bicycle facilities, and transit facilities and revise as necessary to be consistent with National Association of City Transportation Officials (NACTO) and its guidelines regarding complete streets.
    - Consider establishing performance measures to evaluate multimodal travel conditions for pedestrians and bicyclists, such as Level of Traffic Stress (LTS) criteria, to guide development of the street network.
    - Collaborate with the Redding Area Bus Authority (RABA) and other service providers to incorporate infrastructure to assist users in employing multiple modes of transportation in a single trip in order to increase transportation access and flexibility. Examples include but are not limited to, provisions for bicycle and wheelchair access on public transportation, secure bicycle racks at transit stops, and public transportation access to trails and recreational locations.

- Consider the development of a Complete Streets Design Manual that can serve as a guide for public and private development projects that propose new streets or modifications of existing streets.

- Policy T1F: Strive to complete the Planned Pedestrian Improvements identified in the Redding Active Transportation Plan, and support the provision of an attractive, safe, and continuous system of sidewalks and other pedestrian facilities by undertaking the following measures where appropriate:
  - Seek funding for the design and/or, construction, of the sidewalk, path, and crossing improvements identified in the Active Transportation Plan. Focus on securing funds to match federal and State grant program opportunities.
  - Where feasible and appropriate, seek to provide pedestrian-oriented features, such as benches, enhanced landscape, and trash receptacles, in commercial areas, including the Downtown and Redding Riverfront Specific Plan areas.
  - Require new developments provide sidewalks or other pedestrian-dedicated facilities on both sides of new public streets contained within the development. Exceptions may be appropriate where the topography is difficult, proposed lots are of a rural or semi-rural nature, or where the development plan illustrates that pedestrians will be accommodated by alternative means.
  - Work with local organizations and neighborhood groups to develop a plan to determine where curbs, gutters, and sidewalks are needed on unimproved local streets and how to pay for the improvements; establishing sidewalk continuity wherever feasible is a priority.
  - Pursue funding for the continued replacement and repair of sidewalks that have deteriorated due to age and tree-root invasion.
  - Work to develop and seek funding to implement a program to identify, prioritize, and construct the retrofitting of existing intersections that do not currently have accessibility ramps and accommodations at the street corners.
  - Strive to ensure that all new or renovated pedestrian facilities be of a sufficient width to ensure pedestrian comfort and safety and to accommodate the special needs of persons with physical disabilities wherever feasible.

- Policy T1G: Strive to complete the Build-Out Bikeway Network identified in the Redding Active Transportation Plan, and support related measures to make bicycling a safe, accessible, comfortable, and sustainable transportation mode by:
  - Working to secure funding to construct the bikeway network improvements identified in the Active Transportation
  - Pursuing the installation of protected bicycle lanes (Class IV separated bikeway treatments) where feasible on arterial streets

- Seeking to incorporate appropriate bicycle facilities in the design of interchanges, intersections, and other street-improvement/maintenance projects.
- As funding allows, making improvements to streets, signs, and traffic signals as needed to improve bicycle travel, and keep bikeways free of overhanging shrubbery, debris, and other obstacles.
- Supporting to the extent possible the efforts of public transit providers including the Redding Area Bus Authority (RABA) to provide bicycle racks on all buses within the system.
- As appropriate, supporting the requirement that new development provides bicycle facilities or pay in-lieu fees based on the fair share of that development's impacts on the bikeway system and needs identified on the Comprehensive Bikeway Plan.

- Policy T1I: Work with the public, stakeholders, and other jurisdictions and agencies to promote, design, and construct an effective transportation system that serves users of all ages and abilities by:
  - Pursuing appropriate targeted outreach and public participation in community decisions concerning street design and use.
  - Collaborating with Shasta County, the City of Anderson, the City of Shasta Lake, Caltrans, and the Shasta Regional Transportation Agency to integrate bicycle, pedestrian, and public transportation facility planning into regional and local transportation planning programs to encourage connectivity between jurisdictions. Encourage coordination among these agencies to develop appropriate joint prioritization, capital planning and programming, and implementation of street improvement projects and programs.
  - Consulting with local public safety agencies to determine critical evacuation routes and recommended street design on designated routes to allow for adequate evacuations during emergency situations
  - Designing a roadway network that should have adequate circulation to allow for secondary and tertiary access points and should avoid developments with single points of access. Existing areas with single points of access should be prioritized to create secondary road access points. Road connections required for secondary access should be designed to meet a minimum road standard allowed by the City Engineer and the Fire Marshall.
- Policy T2A: Support the provision of a connected network of low-stress walk and bikeways to connect major activity centers, including the provision of appropriate low-stress walk and bikeway access to Downtown Redding and the Redding Transit Center. Low-stress bikeways should generally consist of separated bikeways (Class IV bikeways), sometimes referred to as "protected bicycle lanes", on arterial or collector streets; bicycle boulevard treatments on local streets; or multi-use paths.
  - Work to identify and prioritize routes for a connected network of low-stress walk and bikeways, identifying barriers to low-stress travel with plans to address them. and

Incorporate maps and plans into future updates of the Redding Active Transportation Plan. Pursue funding to construct the network.

- Work to identify networks for walking and biking to connect with key travel nodes, and activity centers, including transit nodes and strategic growth areas. Consider accessibility to all neighborhoods and housing, striving to ensure access to a connected network of low-stress walk and bikeways within one-half-mile radius to all residents. Key travel nodes and activity nodes include Downtown Redding, Redding Transit Center, transit nodes (where multiple transit lines intersect), schools, City Hall, County Government Center, Shasta College, Simpson University, major parks and recreation centers, employment centers/business parks, neighborhood commercial nodes and regional commercial centers.
- As funding permits, develop design standards for the low-stress walk and bikeway network that establishes a "kit of parts" set of standards for the three low-stress facility types: 1) separated bike lanes on arterial and collector streets, 2) neighborhood greenways, and 3) off-street paths and trails. An implementation strategy to construct needed improvements to the network should be established.
- Work with the Cities of Anderson and Shasta Lake, and Shasta County to identify low-stress walk, bike routes that connect to the downtown core strategic-growth areas of the cities and towns of Shasta County.
- Support to the extent feasible and as funding allows operation of amenities and programming to enable daily transportation by people biking and walking, including bikeshare services, the Shasta Bike Depot at the Redding Transit Center, secure bike parking, short-term bike parking racks, and similar secure bike parking and e-bike charging stations to meet existing and future needs for the encouragement and education of those who travel via walking or biking.
- Work with the local school districts to develop specific transportation plans associated with schools and the surrounding neighborhoods to address conflicts with; traffic, pedestrian movements, safety during school hours, and bicycle facilities to and from schools. This may include a plan to implement slower speed school zones while children are present and flashing beacons to identify when these school zones are in effect.

- Policy T3A: Support the provision of enhanced transit service that is timely, cost-effective, responsive to growth patterns, and meet the needs of existing and future transit demand. By:
  - Working with the Shasta Regional transportation Agency (SRTA) and public transit providers including the Redding Area Bus Authority (RABA) on an ongoing basis to plan and implement additional public transit services
  - Supporting to the extent feasible and as funding allows the continuation and expansion of private commercial or nonprofit bus operations to provide additional regional transit opportunities for residents.

- Promoting coordination pf public transit, intercity rail, bicycle share program, intercity bus, and air transportation services to enhance the transportation options available for residents and visitors to the Redding community.
- Supporting to the extent feasible and as funding allows provision of intercity bus service.
- Developing policies and procedures to implement shared mobility devices to help enhance public transit options. These micro-transit shared mobility type devices could include scooters and e-bikes, but may be expanded as technology develops.

- Policy T3B: Provide physical measures to enhance transit service by considering to undertake the following:
  - Require new development to install and maintain passenger amenities at designated bus stops when relevant to accommodating project trips or mitigating VMT as appropriate.
  - Provide bus facilities along arterial streets as indicated in an applicable transit development plan. Determine the precise locations during the development plan review or at the time of major street improvement or reconstruction.
  - Work with RABA to provide safe, attractive, well-lit, comfortable, and protected waiting areas for bus passengers.
- Policy T4A: Support measures that help reduce VMT below regional averages on a "residential per capita" and "per employee" basis by:
  - Encouraging employers, colleges, and schools to provide incentives and facilities (e.g., showers) for employees and students utilizing alternatives to the single-occupant automobile, such as carpools, vanpools, buses, bicycling, and walking.
  - Encouraging employers, including government agencies, to allow telecommuting and flex time and to promote staggered shifts or base work hours that do not coincide with peak-period traffic to reduce peak-hour trips.
- Policy T4B: Prioritize infill and mixed-use development, and encourage new development in close proximity to existing employment, housing, schools, commercial centers, and other services and amenities as addressed in the Community Development and Design Element.
- Policy T7A: Strive to maintain adequate on-street and public off- street parking areas, including electric vehicle charging stations, to meet ongoing parking demands by considering the following measures:
  - Pursue funding options and strategies for the construction and maintenance of shared parking facilities/structures Downtown.
  - Seek funding to provide electric charging stations at parking lots and rest areas for cars, trucks, and bicycles throughout the City.

  - Encourage and facilitate the provision of electric-vehicle charging facilities in new parking lots and multi-family residential developments.
  - Strive to install secure bicycle parking with electric charging stations and large enough for cargo bikes in the Downtown area and at City parks, civic buildings, and other community centers.

- Policy T7B: Endeavor to ensure that required parking provisions for private development supports efforts to encourage multimodal travel and reduce VMT by:
  - Pursuing maximum and minimum standards for automobile parking spaces in transit corridors and Downtown to promote use of alternate modes of travel as may be appropriate.
  - Pursuing minimum standards for bicycle parking, including both long-term and short-term bicycle parking spaces.
- Policy T7C: Generally, prohibit on-street automobile parking on arterial streets if there is not adequate space for bike lanes and parking lanes outside the Downtown area to reduce congestion and conflicts.
- Policy T7D: Work to ensure the provision of adequate curbside or off-street space where applicable to accommodate passenger pick-up/drop-off activity by transportation network companies (TNC), and delivery services.

Natural Resources Element

- Policy NR14A: Consider developing and adopting a "Climate Action and Resiliency Plan" for Redding. Such plan, if adopted, should establish GHG emissions reduction goals for 2035 and 2050, include an effective progress reporting timeline, and update the GHG inventory and forecasts at appropriate intervals.
- Policy NR14B: Strive to reduce greenhouse gas emissions from new development by encouraging development that lowers vehicle miles traveled (VMT), and discouraging auto-dependent sprawl and dependence on the private automobile; promoting development that is compact, mixed-use, pedestrian friendly, and transit oriented; promoting energy-efficient building design and site planning; improving the jobs/housing ratio; and other methods of reducing emissions while maintaining the balance of housing types and stock.
- Policy NR14C: Coordinate with SCAQMD to ensure projects incorporate feasible mitigation measures to reduce GHG emissions and air pollution from both construction and operations, if not already provided for through project design.
- Policy NR14D: Consider the appropriate use of CEQA streamlining mechanisms for projects that are consistent with this General Plan and its EIR.

- **Policy NR14E:** Work toward establishing a formal internal process for use in the project review stage to determine and document the following criteria established are in evidence for projects where streamlining is proposed.

5.8.4 IMPACT DISCUSSION

GHG-1:	The project would generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. [Threshold GHG-1]

Development under the proposed project would contribute to global climate change through direct and indirect emissions of GHG from land uses within the City. A General Plan does not directly result in development without additional approvals. However, the General Plan Update would guide and facilitate development throughout the City. Before any development can occur in the City, it must be analyzed for consistency with the General Plan, zoning requirements, and other applicable local and State requirements; comply with the requirements of CEQA; and obtain all necessary clearances and permits.

Emissions Forecast

The General Plan Update would guide the City's growth through the next 22 years and serve as an opportunity to address issues related to climate adaptation, environmental justice, and other State-mandated laws. As mentioned in Table 3-2, *2045 General Plan Planning Horizon Forecast*, buildout from the proposed project anticipates 8,066 new dwelling units, 9,781 jobs, and 5,650 students beyond existing conditions. Overall, implementation of the General Plan Update would accommodate growth in population and employment as well as future development of new residential and nonresidential land use. As a result, the General Plan Update would accommodate new activities, such as energy consumption, vehicular transport, and emission-generating product consumption, that would result in the generation of GHG emissions.

To identify GHG emissions generated by development facilitated by the General Plan Update in its horizon year of 2045 when compared to existing conditions, several emission sources and data were retrieved and analyzed for existing and future 2045 conditions. Quantification methodology for all emissions presented in this analysis are provided below.

- **Building Energy.** Emissions associated with natural gas and electricity use for residential and nonresidential land uses in the City were calculated based on data provided by Pacific Gas and Electric (PG&E) and the Redding Electric Utility (REU), respectively. Due to the 15/15 Rule, electricity use data for industrial land uses was aggregated with the nonresidential land uses in the

data provided by REU.[4] Existing 2020 emissions are based on the 2019-2021 annual average electricity and natural gas use. Forecasts for year 2045 are adjusted for increases in population for residential electricity and natural gas use and nonresidential square footage for nonresidential electricity and natural gas use in the City. Carbon intensity for year 2020 and 2045 are based on the carbon intensity for REU identified in the 2022 CalEEMod User's Guide, Appendix G (CAPCOA 2022).

- **Propane Use.** For propane emissions, proposal consumption was identified for residential uses only, using US Census Bureau data for houses using bottled, tank, or LP gas for house heating fuels and US Energy Information Administration data for propane consumption, and was applied to the growth in residential units through 2045. Nonresidential propane consumption was not identified as that is not anticipated to be a substantial contribution to propane consumption in the City. Please refer to Appendix 5.3-1 for propane source emission calculations.
- **Transportation.** Transportation emissions forecasts were modeled using emissions data from CARB's EMFAC2021 V1.0.2 web database. Model runs were based on daily VMT data provided by GHD (see Chapter 5.16, Transportation) and calendar year 2020 (existing) and 2045 emission rates.[5] The VMT is based on the origin-destination using the Shasta County Transportation Model and includes the full trip length for land uses in the City and a 50 percent reduction in the trip length for external-internal/internal-external trips based on the recommendations of CARB's Regional Targets Advisory Committee under SB 375.[6] Consistent with CARB's methodology within the Climate Change Scoping Plan Measure Documentation Supplement, daily VMT was multiplied by 347 days per year to account for reduced traffic on weekends and holidays to determine annual emissions.

[4] The 15/15 Rule was adopted by the California Public Utilities Commission in the Direct Access Proceeding (CPUC Decision 97-10-031) to protect customer confidentiality. The 15/15 rule requires that any aggregated information provided by a utility must be made up of at least 15 customers, and a single customer's load must be less than 15 percent of an assigned category. If the number of customers in the compiled data is below 15, or if a single customer's load is more than 15 percent of the total data, categories must be combined before the information is released. The Rule further requires that if the 15/15 Rule is triggered for a second time after the data have been screened once already using the 15/15 Rule, the customer be dropped from the information provided.

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

[6] For accounting purposes, there are three types of trips: (1) Internal-Internal. Vehicle trips that originated and terminated within the City (Internal-Internal, I-I). Using the accounting rules established by RTAC, 100 percent of the length of these trips and their emissions are attributed to the City, (2) Internal-External/External-Internal. Vehicle trips that either originated or terminated (but not both) in the City (Internal-External or External-Internal, I-X and X-I). Using the accounting rules established by RTAC, 50 percent of the trip length for these trips is attributed to the City; and (3) External-External. Vehicle trips that neither originated nor terminated in the City. These trips are commonly called pass-through trips (External-External, X-X). Using the accounting rules established by RTAC, these trips are not counted toward the City's VMT or emissions.

- **Off-Road Equipment.** OFFROAD is a database of equipment use and associated emissions for each county compiled by CARB. Off-road equipment in the City is based on year 2020 emission rates for Shasta County obtained from CARB's OFFROAD V1.0.3 web database. OFFROAD was used to estimate emissions from lawn and garden, light commercial, and construction equipment in the City. To determine the percentage of emissions attributable to the City, light commercial equipment is estimated based on employment for Redding as a percentage of Shasta County and forecast based on the change in employment in the City. Construction equipment use is estimated based on building permit data for Redding and County of Shasta from data compiled by the US Census and assumes that construction emissions for the forecast year would be similar to historical levels. Lawn and garden equipment is based on the percentage of population in Redding compared to Shasta County and forecast based on the change in population in the City.
- **Refrigerant Leakage.** Refrigerants are based on the statewide 2019 refrigerant use and statewide population based on the 2020 census data in order to derive emissions per person. Emissions from this sector are based on AR4 since the inventory is not available with AR5 GWPs.
- **Solid Waste Disposal.** GHG emissions from solid waste disposal by residents and employees in the city were quantified based on the waste-in-place method. This method assumes that the degradable organic component in waste decays slowly throughout a few decades, during which CH_4 and biogenic CO_2 are formed. If conditions are constant, the rate of CH_4 production depends solely on the amount of carbon remaining in the waste. As a result, emissions of CH_4 from waste deposited in a disposal site are highest in the first few years, then gradually decline. Significant CH_4 production typically begins one or two years after waste disposal in a landfill and continues for 10 to 60 years or longer. Waste disposal was averaged over several years to account for fluctuations in average annual solid waste disposal. Waste generated was based on data obtained from the California Department of Resources Recycling and Recovery (CalRecycle), to provide an estimate of GHG emissions for existing conditions (2020). GHG emissions from solid waste disposal in the baseline year were modeled using CARB's Landfill Emissions Tool Version 1.09, which includes waste characterization data from CalRecycle. Because the landfill gas captured is not under the jurisdiction of the City of Redding, the landfill gas emissions from the capture system are not included in the inventory. Only fugitive sources of GHG emissions from landfills are included. Modeling assumes a 75 percent reduction in fugitive GHG emissions from the landfill's Landfill Gas Capture System. The landfill gas capture efficiency is based on CARB's LGOP, Version 1.3. Total GHG emissions from waste disposal in 2020 were forecast based on the percentage increase in population for the City. The emissions forecast does not account for reductions from increasing waste diversion.
- **Water Use and Wastewater Treatment.** GHG emissions from this sector include indirect GHG emissions from the embodied energy associated with water use and wastewater generation and fugitive GHG emissions from processing wastewater. The total annual existing and proposed project water demand in the City are based on data retrieved from the three water purveyors in the City, Redding Water Utility, Bella Vista Water District, and Centerville Water District. The total annual existing and proposed project wastewater generation in the City are based on the City's 2022

Wastewater Utility Master Plan (Redding 2022). Electricity use from water use is estimated using energy rates identified by in the 2022 CalEEMod Users Guide (CAPCOA 2022). Then energy is multiplied by the carbon intensity of energy for PG&E. Wastewater treatment also results in direct CH_4 emissions from wastewater processing, which are based on the emission rates identified in the 2022 CalEEMod Users Guide (CAPCOA 2022).

Industrial sources of emissions that require a permit from SCAQMD are not included in the community inventory. Life-cycle emissions are not included in this analysis because not enough information is available for the General Plan Update; therefore, quantification of life-cycle emissions would be speculative.[7] Black carbon emissions are not included in the GHG analysis because CARB does not include this short-lived climate pollutant in the State's GHG emissions inventory but treats it separately.[8]

As mentioned in Chapter 5.3, *Air Quality*, to identify the expected growth in nonresidential building square footage between 2020 and 2045, the existing nonresidential square footage inventory was provided by the City and multiplied by the same growth rate that employment would experience between 2020 and 2045. The community GHG emissions inventory and forecast for the City is shown in Table 5.8-5, *City of Redding GHG Emissions Forecast*. Buildout of the General Plan Update with up to 8,066 new dwelling units, 43,383 new residents, 5,591,974 new nonresidential square footage, and 9,781 new employees would result in an estimated 584,307 $MTCO_2e$ GHG emissions per year in 2045, or a decrease of approximately 2 percent from 2020 conditions. As shown on Table 5.8-5, the continued increase in renewable and carbon-free electricity generation sources, as required under SB 100, would lead to a net decrease in electricity-related GHG emissions, including those associated with water treatment and transport. Similarly, the gradual increase of electric vehicles in the average fleet mix combined with increased standard for vehicle fuel economy through 2045 would result in a net decrease in on-road vehicle GHG emissions. All other emission sources, as shown in Table 5.8-5, would increase from existing conditions as a result of population and employment growth throughout the City through 2045.

[7] Life cycle emissions include indirect emissions associated with materials manufacture. However, these indirect emissions involve numerous parties, each of which is responsible for GHG emissions of their particular activity. The California Resources Agency, in adopting the CEQA Guidelines Amendments on GHG emissions found that lifecycle analysis was not warranted for project-specific CEQA analysis in most situations, for a variety of reasons, including lack of control over some sources, and the possibility of double-counting emissions (see Final Statement of Reasons for Regulatory Action, December 2009). Because the amount of materials consumed during the operation or construction of the proposed project is not known, the origin of the raw materials purchased is not known, and manufacturing information for those raw materials is also not known, calculation of life cycle emissions would be speculative. A life-cycle analysis is not warranted (OPR 2008).

[8] Particulate matter emissions, which include black carbon, are analyzed in Section 5.3, *Air Quality*. The majority of anthropogenic sources come from transportation—specifically, heavy-duty vehicles. The share of black carbon emissions from transportation is dropping rapidly and is expected to continue to do so between now and 2030 as a result of California's air quality programs. The remaining black carbon emissions will come largely from woodstoves/fireplaces, off-road applications, and industrial/commercial combustion (CARB 2022).

TABLE 5.8-5 CITY OF REDDING GHG EMISSIONS FORECAST

Emissions Sector	GHG Emissions ($MTCO_2e$/Year)					
	Existing		Proposed Project 2045		Net Change	
Building Electricity	126,196	21%	99,393	17%	-26,803	-21%
Building Natural Gas	84,924	14%	99,088	17%	14,164	17%
Building Propane Fuel	867	<1%	1,010	<1%	143	16%
Hearth Use	3,113	1%	3,626	1%	513	16%
On-Road Transportation	236,188	40%	220,596	38%	-15,592	-7%
Off-Road Vehicles and Equipment	24,513	4%	25,538	4%	1,025	4%
Solid Waste/Landfills	8,778	1%	10,256	2%	1,478	17%
Refrigerants	56,762	10%	66,118	11%	9,356	16%
Water Use	2,435	<1%	1,290	<1%	-1,145	-47%
Wastewater Treatment	51,295	9%	57,390	10%	6,095	12%
Total Community Emissions	**595,073**	**100%**	**584,307**	**100%**	**-10,766**	**-2%**
Service Population (SP)	173,517	—	202,737	—	29,220	17%
$MTCO_2e$/SP	3.4	—	2.9	—	-0.5	-16%
AB 1279 Target for Year 2045[1]	—	—	89,261	-85%	—	—
Does Project Meet Target?	—	—	**No**	—	—	—

Source: See Appendix 5.3-1

Notes: Emissions may not total to 100 percent due to rounding. Based on GWPs in the IPCC Fifth Assessment Report (AR5).

[1] The AB 1279 Target for Year 2045 represents an 85-percent emissions reduction from existing conditions.

As shown in Table 5.8-5, buildout of the land uses accommodated under the General Plan Update would result in a net decrease of GHG emissions from existing conditions. Similarly, GHG emissions per service population (SP) would decrease. The primary reason for the decrease in GHG emissions per service populationis due to regulations adopted to reduce GHG emissions and turnover of California's on-road vehicle fleets.

It should be noted that the majority of annual GHG emissions generated by development facilitated by the proposed project are the result of vehicle use. Energy source emissions, meaning emissions associated with the consumption of electricity and natural gas for power generation, constitute the next largest source of GHG emissions during operation. However, adopted State measures aim to target and reduce mobile and energy sources to reduce GHG emissions, such as:

- The RPS requires increases in renewable electricity supplies.
- The Clean Car Standards require increased fuel efficiency of on-road vehicles and decreased carbon intensity of vehicle fuels.
- The updated Title 24 Building Energy Efficiency Standards require new buildings to achieve increased energy efficiency targets.

- The Climate Change Scoping Plan LCFS mandates reduced carbon intensity of fuels used in off-road equipment.
- SB 100 also establishes RPS requirements for publicly owned utilities that consist of 44 percent renewable energy by 2024, 52 percent by 2027, and 60 percent by 2030.
- SB 1020 adds interim targets to require renewable and zero-carbon generation sources to supply 90 percent of all retail electricity sales by 2035 and 95 percent of all retail electricity sales by 2040.
- SB 1383 aims for a 75 percent reduction in organic wastes by 2025 aimed to tackle climate change.
- SB 350 directs CARB, in coordination with the California Public Utilities Commission (CPUC) and (CEC), to establish 2030 GHG emissions targets for the electricity sector in general and each electricity provider.

Consistency with the State's 2045 Carbon Neutrality Goals

To determine whether the proposed project would result in a potentially significant impact, the proposed project must demonstrate consistency with the State's 2045 GHG reduction target of carbon neutrality. Under the General Plan Update, new growth would be focused on areas of the City where services exist or can be expanded and/or extended to serve additional and more intensive development. As identified in Table 5.8-5, the proposed project would result in a slight decrease in emissions but would not achieve an 85 percent reduction in GHG emissions by 2045. Therefore, until such time, GHG emissions impacts for the Redding General Plan Update are considered potentially significant regarding meeting the long-term year 2045 reduction goal.

General Plan Policies That May Reduce GHG Emissions

While growth in the City would cumulatively contribute to GHG emissions impacts, implementation of various General Plan Update policies would help to minimize GHG emissions. Such policies that would help reduce GHG emission generation during project operation are listed below:

- Policy CDD10: Encourage development in the City to include inviting, attractive, accessible, and walkable urban mixed-use neighborhoods combining residential, commercial, recreational, open space, and employment to maximize the use of underused urban lots.
- Policy CDD11A: Encourage developers to create new residential developments in infill priority areas that are available to a broad segment of the community. The developments should be pedestrian and bicycle friendly to make efficient use of available infrastructure and at densities that will help facilitate the provision and use of public transit where it is available.
- Policy CDD11C: Consider developing form-based codes specific to infill priority areas and develop small lot zoning standards for existing lots below the City's minimum lot size to facilitate residential development in infill priority areas.

- Policy CDD11D: Explore options for incentivizing parcel assemblage in infill priority areas to support residential and mixed-use developments.
- Policy CDD11E: Facilitate to the extent feasible, the construction of new affordable housing units that are within walking distance to transit, everyday services, schools, and employment centers.
- Policy T3A: Support the provision of enhanced transit service that is timely, cost-effective, responsive to growth patterns, and meet the needs of existing and future transit demand. By:
    - Working with the Shasta Regional transportation Agency (SRTA) and public transit providers including the Redding Area Bus Authority (RABA) on an ongoing basis to plan and implement additional public transit services
    - Supporting to the extent feasible and as funding allows the continuation and expansion of private commercial or nonprofit bus operations to provide additional regional transit opportunities for residents.
    - Promoting coordination pf public transit, intercity rail, bicycle share program, intercity bus, and air transportation services to enhance the transportation options available for residents and visitors to the Redding community.
    - Supporting to the extent feasible and as funding allows provision of intercity bus service.
    - Developing policies and procedures to implement shared mobility devices to help enhance public transit options. These micro-transit shared mobility type devices could include scooters and e-bikes, but may be expanded as technology develops.
- Policy T3B: Provide physical measures to enhance transit service by considering to undertake the following:
    - Require new development to install and maintain passenger amenities at designated bus stops when relevant to accommodating project trips or mitigating VMT as appropriate.
    - Provide bus facilities along arterial streets as indicated in an applicable transit development plan. Determine the precise locations during the development plan review or at the time of major street improvement or reconstruction.
    - Work with RABA to provide safe, attractive, well-lit, comfortable, and protected waiting areas for bus passengers.
- Policy T4A: Support measures that help reduce VMT below regional averages on a “residential per capita” and “per employee” basis by:
    - Encouraging employers, colleges, and schools to provide incentives and facilities (e.g., showers) for employees and students utilizing alternatives to the single-occupant automobile, such as carpools, vanpools, buses, bicycling, and walking.
    - Encouraging employers, including government agencies, to allow telecommuting and flex time and to promote staggered shifts or base work hours that do not coincide with peak-period traffic to reduce peak-hour trips.

- Policy T7A: Strive to maintain adequate on-street and public off- street parking areas, including electric vehicle charging stations, to meet ongoing parking demands by considering the following measures:
    - Pursue funding options and strategies for the construction and maintenance of shared parking facilities/structures Downtown.
    - Seek funding to provide electric charging stations at parking lots and rest areas for cars, trucks, and bicycles throughout the City.
    - Encourage and facilitate the provision of electric-vehicle charging facilities in new parking lots and multi-family residential developments.
    - Strive to install secure bicycle parking with electric charging stations and large enough for cargo bikes in the Downtown area and at City parks, civic buildings, and other community centers.
- Policy T7B: Endeavor to ensure that required parking provisions for private development supports efforts to encourage multimodal travel and reduce VMT by:
    - Pursuing maximum and minimum standards for automobile parking spaces in transit corridors and Downtown to promote use of alternate modes of travel as may be appropriate.
    - Pursuing minimum standards for bicycle parking, including both long-term and short-term bicycle parking spaces.

The primary mechanism by which local jurisdictions can ensure consistency with the State GHG reduction goals is through preparation of a Climate Action Plan. Natural Resources Element Policy NR14A would require the City to develop and implement a Climate Action Plan:

- Policy NR14A: Consider developing and adopting a "Climate Action and Resiliency Plan" for Redding. Such plan, if adopted, should establish GHG emissions reduction goals for 2035 and 2050, include an effective progress reporting timeline, and update the GHG inventory and forecasts at appropriate intervals.

Summary

While sector emissions would be generated under the proposed project largely due to the forecast growth in population and employment, the above General Plan Update policies would support GHG emission reductions through individual development projects facilitated by the proposed project. Implementation of these policies and other proposed policies of the General Plan Update would contribute to minimizing GHG emissions associated with the city to the extent feasible. However, as shown in Table 5.8-5, GHG emissions are projected to result in a slight decrease in emissions from the CEQA baseline but not result in the 85 percent reduction from existing conditions necessary to ensure the City is on a trajectory to achieve the long-term reductions goals AB 1279 and substantial progress toward the State's carbon neutrality goals for

year 2045. Although the General Plan Updates includes Natural Resource Element Policy NR14A that requires that the city to develop and implement a Climate Action Plan and implementation measures to support this goal, it is uncertain whether these policies will, in effect, lower the City's GHG emissions to a less-than-significant level. Therefore, GHG emissions associated with the proposed project are considered significant.

Level of Significance Before Mitigation: GHG-1 would be potentially significant.

Mitigation Measures

There are no feasible mitigation measures. The General Plan Update includes Natural Resource Element Policy NR14A, which directs the City to consider developing and implementing a Climate Action Plan. The Climate Action Plan would outline additional measures new development should take to ensure that the city is consistent with the State's carbon neutrality goals.

Level of Significance After Mitigation: GHG-1 would be significant and unavoidable.

Implementation of the Redding General Plan Natural Resource Element Policy NR14A would ensure that the City to develop and implement a Climate Action Plan to achieve the GHG and substantial progress toward the State's carbon neutrality goals for year 2050. However, given the growth in population and employment within the City and the magnitude of emissions reductions needed to achieve the GHG reduction target, it is uncertain whether Natural Resource Element Policy NR14A would lower GHG emissions to less-than-significant levels. Therefore, GHG emissions are considered significant and unavoidable.

GHG-2:	The proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. [Threshold GHG-2]

Applicable plans adopted for the purpose of reducing GHG emissions include CARB's Scoping Plan and SRTA's Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS). A consistency analysis with these plans is presented below.

CARB Scoping Plan

The CARB Scoping Plan is applicable to state agencies but is not directly applicable to cities/counties and individual projects (i.e., the Scoping Plan does not require local jurisdictions to adopt its policies, programs, or regulations to reduce GHG emissions). However, new regulations adopted by the State agencies from the Scoping Plan result in GHG emissions reductions at the local level. So local jurisdictions benefit from reductions in transportation emissions rates, increases in water efficiency in the building and landscape codes, and other statewide actions that affect a local jurisdiction's emissions inventory from the top down.

Statewide strategies to reduce GHG emissions include the LCFS mandate and changes in the corporate average fuel economy standards.

Development projects accommodated under the proposed project are required to adhere to the programs and regulations identified by the Scoping Plan and implemented by state, regional, and local agencies to achieve the statewide GHG reduction goals of AB 32, SB 32, and AB 1279. Future development projects would be required to comply with these state GHG emissions reduction measures because they are statewide strategies. For example, new buildings under the proposed project would be required to meet the CALGreen and Building Energy Efficiency Standards in effect at the time when applying for building permits. Furthermore, as discussed under the discussion for Impact GHG-1, the proposed project includes General Plan Update policies that would help reduce GHG emissions and therefore help achieve GHG reduction goals. Implementation of the proposed project would not obstruct implementation of the CARB Scoping Plan, and impacts would be less than significant.

SRTA's Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS)

The RTP/SCS is the Shasta County regional transportation plan to achieve the passenger vehicle emissions reductions identified under SB 375. The 2018 RTP/SCS includes an updated SCS which features seven SGAs where strategies are focused to reduce per capita vehicle miles traveled and associated GHGs. Strategies are intended to increase population and employment density within SGAs and to provide a range of practical mobility alternatives (SRTA 2018). The General Plan Update would include development within a designated SGA which is the City of Redding's Downtown area. The County's RTP directs the focus of development in infill areas, such as the downtown area. As shown in Table 5.8-6, *RTP/SCS Consistency Analysis*, the proposed project would be consistent with the goals of the RTP as the proposed project aims to direct its future growth in infill areas.

TABLE 5.8-6 RTP/SCS CONSISTENCY ANALYSIS

Goals	Consistency Analysis
#1: Optimize the use of existing interregional and regionally significant roadways to prolong functionally and maximize return-on-investment	Policy T1I in the Transportation Element encourages the public, stakeholders, and other jurisdictions and agencies to promote, design, and construct an effective transportation system that serves users of all ages and abilities. It includes the Shasta Regional Transportation Agency, consulting with local public safety agencies, and designing a roadway network that has adequate circulation to allow for secondary and tertiary access points. Existing areas with single points of access should be prioritized to create secondary access points. Road connections required for secondary access should be designed to meet a minimum road standard allowed by the City Engineer and the Fire Marshall.
#2: Strategically increase capacity on interregional and regionally significant roadways to keep people and freight moving effectively and efficiently	See response in Goal #1. In addition, Policy T3A supports the provision of enhanced transit service that is timely, cost-effective, responsive to growth patterns, and meets the needs of existing and future transit demand.
#3: Provide an integrated, context-appropriate range of practical transportation choices	The General Plan Update includes policies in the Transportation Element that promote and supports alternative modes of transportation (Policies T1C, T2A, T2B, T3A, T3B,T6A, T6B)
#4: Create people-centered communities that support public safety, health, and well-being	The General Plan Update also includes policies in the Community Development and Design Element and Transportation Element that promote mixed-use development (Policies CDD9C, CDD9D, CDD10C, CDD10D, CDD10E, CDD13C, CDD13D, T4A, T4B, 10A)
#5: Strengthen regional economic competitiveness for long-term prosperity	The General Plan Update includes the Economic Development Element which contains policies aimed at increasing economic opportunities in the City. Such as Policy ED5E and ED5F seek to leverage economic opportunities such as tourism, while Policy ED12A seeks to maximize the benefits of existing economic development partnerships and non-profit organizations.
#6: Promote public access, awareness, and action in planning and decision-making processes.	Policy T1I from the Transportation Element seeks to promote, design, and construct an effective transportation system that serves users of all ages and abilities. It involves outreach, collaboration, coordination, and consulting with local public safety agencies to determine evacuation routes and design a roadway network with adequate circulation to allow for secondary and tertiary access points.
#7: Practice and promote environmental and natural resource stewardship	The General Plan Update also includes policies in the Natural Resources Element aimed to protect environmental and natural resources. Such as Policy NR4E encourages education, volunteerism, and stewardship to protect biological resources. Policy NR4A prioritizes avoidance/minimization of development-related disturbances of sensitive habitats and "special status species" by encouraging innovative site design.

The land use patterns envisioned by the General Plan Update would support and encourage denser development in the downtown region as mentioned in Policy CCD9C and Policy CDD11K which encourages denser residential and mixed-use development within the City's Downtown area.

In addition, the proposed project would not redesignate or rezone to accommodate future development that would induce additional population, VMT, or additional emissions. The General Plan Update would primarily develop within infill locations and those areas where infrastructure is available. Thus, the project would be consistent with the overall goals of the RTP/SCS in concentrating new development in locations where there is existing infrastructure and transit as noted in Policy CDD10A, Policy CDD10C, Policy CDD10D,

Policy CDD10E, and Policy T4A, in the General Plan Update. Therefore, the proposed project would not conflict with the land use concept plan in the RTP/SCS and impacts would be less than significant.

Furthermore, as discussed in Section 5.14, *Population and Housing*, implementation of the proposed project would induce population and housing growth necessary to meet the population growth and housing needs in the City. Thus, the proposed project would provide more housing for residents to both live and work in the City instead of commuting to other areas, which would contribute to minimizing VMT and reducing VMT per service population. Therefore, the proposed project would not interfere with the RTP/SCS ability to implement the regional strategies in Shasta County Area, and impacts would be less than significant.

Level of Significance Before Mitigation: GHG-2 would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation: GHG-2 would be less than significant.

5.8.5 CUMULATIVE IMPACTS

GHG-3	Implementation of the proposed project would, in combination with past, present, and reasonably foreseeable projects, result in a cumulative impact with respect to GHG emissions.

Project-related GHG emissions are not confined to a particular air basin but are dispersed worldwide. Therefore, impacts under Impact GHG-1 and Impact GHG-2 are not project-specific impacts to global warming, but the proposed project's contribution to this cumulative impact. As discussed under Impact GHG-2, the proposed project would be consistent with SRTA's 2018 RTP/SCS and CARB's Scoping Plan. However, as discussed under Impact GHG-1 due to the magnitude of GHG emissions generated by land use development facilitated by the General Plan Update and despite the proposed project's policies, and state mandated measures, the proposed project would not achieve the emission reduction target of 85 percent below 1990s levels by 2045. Therefore, project-related GHG emissions and their contribution to global climate change would be cumulatively considerable, and GHG emissions impacts would be *significant and unavoidable*.

Level of Significance Before Mitigation: GHG-3 would be potentially significant.

Mitigation Measures

There are no feasible mitigation measures.

Level of Significance After Mitigation: GHG-3 would be significant and unavoidable.

5.8.6 REFERENCES

California Air Resources Board (CARB). 2017a, March. Short-Lived Climate Pollutant Reduction Strategy. https://www.arb.ca.gov/cc/shortlived/shortlived.htm.

_____. 2017b, November. California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target. https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf.

_____. 2018, February. Proposed Update to the SB 375 Greenhouse Gas Emission Reduction Targets. https://www.arb.ca.gov/cc/sb375/sb375_target_update_final_staff_report_feb2018.pdf.

_____. 2021, July 28. California Greenhouse Gas 2000-2019 Emissions Trends and Indicators Report. https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2019/ghg_inventory_trends_00-19.pdf.

_____. 2022, May 10. Draft 2022 Scoping Plan. https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents.

California Climate Action Team (CAT). 2006, March. Climate Action Team Report to Governor Schwarzenegger and the Legislature. https://planning.lacity.org/eir/8150Sunset/References/4.E.%20Greenhouse%20Gas%20Emissions/GHG.23_CalEPA%202006%20Report%20to%20Governor.pdf

California Climate Change Center (CCCC). 2012, July. Our Changing Climate 2012: Vulnerability and Adaptation to the Increasing Risks from Climate Change in California.

California Energy Commission (CEC). 2006. Our Changing Climate: Assessing the Risks to California. 2006 Biennial Report. CEC-500-2006-077. California Climate Change Center.

_____. 2009, May. The Future Is Now: An Update on Climate Change Science, Impacts, and Response Options for California. CEC-500-2008-0077. http://www.susannemoser.com/documents/CEC-500-2008-071_Moseretal_FutureisNow.pdf.

California Natural Resources Agency (CNRA). 2014, January. Safeguarding California: Reducing Climate Risk: An Update to the 2009 California Climate Adaptation Strategy. https://files.resources.ca.gov/docs/climate/materials/2014-01-22_Sacramento_Overview.pdf.

California Office of Emergency Services (CalOES). 2020, June. California Adaptation Planning Guide. https://www.caloes.ca.gov/HazardMitigationSite/Documents/CA-Adaptation-Planning-Guide-FINAL-June-2020-Accessible.pdf

California Council on Science and Technology (CCST). 2012. California's Energy Future: Portraits of Energy Systems for Meeting Greenhouse Gas Reduction Targets. https://ccst.us/wp-content/uploads/2012ghg.pdf

Department of Water Resources (DWR). 2010, February. 20x2020 Water Conservation Plan. https://www.waterboards.ca.gov/water_issues/hot_topics/20x2020/docs/20x2020plan.pdf

Governor's Office of Planning and Research (OPR). 2008, June. CEQA and Climate Change: Addressing Climate Change through CEQA Review. Technical Advisory. http://www.opr.ca.gov/ceqa/pdfs/june08-ceqa.pdf.

Intergovernmental Panel on Climate Change (IPCC). 1995. Second Assessment Report: Climate Change 1995.

_____. 2001. Third Assessment Report: Climate Change 2001. New York: Cambridge University Press.

_____. 2007. Fourth Assessment Report: Climate Change 2007. New York: Cambridge University Press.

_____. 2013. Fifth Assessment Report: Climate Change 2013. New York: Cambridge University Press.

_____. 2021. Sixth Assessment Report: Climate Change 2022. The Physical Science Basis. https://report.ipcc.ch/ar6/wg1/IPCC_AR6_WGI_FullReport.pdf

National Highway Traffic Safety Administration (NHTSA). 2022, April 1. USDOT Announces New Vehicle Fuel Economy Standards for Model year 2024-2026. https://www.nhtsa.gov/press-releases/usdot-announces-new-vehicle-fuel-economy-standards-model-year-2024-2026, accessed on July 27, 2022.

Redding, City of. 2022, July. City of Redding Wastewater Utility Master Plan.

Sacramento Metropolitan Air Quality Management District (SMAQMD). 2021, February. Guide to Air Quality Assessment in Sacramento County, Chapter 6 Greenhouse Gas Emissions. https://www.airquality.org/LandUseTransportation/Documents/Ch6GHG2-26-2021.pdf, accessed March 16, 2023.

Shasta Regional Transportation Agency (SRTA). 2018. Regional Transportation Plan & Sustainable Communities Strategy for the Shasta Region. https://www.srta.ca.gov/DocumentCenter/View/4285/2018-Regional-Transportation-Plan--Sustainable-Communities-Strategy-adopted-Oct-9-2018?bidId=.

_____2023, March 2 (accessed). 2022 RTP. https://www.srta.ca.gov/355/2022-RTP.

US Environmental Protection Agency (USEPA). 2009a, December. EPA: Greenhouse Gases Threaten Public Health and the Environment: Science Overwhelmingly Shows Greenhouse Gas Concentrations at Unprecedented Levels due to Human Activity. https://archive.epa.gov/epapages/newsroom_archive/newsreleases/08d11a451131bca585257685005bf252.html.

_____. 2009b, July 18 (accessed). USEPA: Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act.

This page intentionally left blank.

5.9 HAZARDS AND HAZARDOUS MATERIALS

This chapter describes the regulatory framework and existing conditions in the City of Redding related to hazards and hazardous materials, and the potential impacts of the proposed project on hazards and hazardous materials.

5.9.1 ENVIRONMENTAL SETTING

5.9.1.1 REGULATORY FRAMEWORK

This section summarizes key federal, State, and local regulations, plans, and programs that apply to hazards and hazardous materials in Redding.

Federal Regulations

United States Environmental Protection Agency

At the federal level, the chief environmental regulator is the US Environmental Protection Agency (EPA), whose mission is to protect human health and the environment. Butte County is designated within EPA Region IX, which includes Arizona, California, Hawaii, and New Mexico. The EPA maintains responsibility for cleanup of federal lands and waterways, and the State holds regulatory authority for all other lands.

Hazardous Material Databases

Information on hazardous materials is listed in a number of databases, including the federal Superfund list, which was created through the Comprehensive Environmental Response, Conservation, and Liability Act (CERCLA) of 1980; the EPA's Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS); and the leaking underground storage tank (LUST) information system. These databases are also a primary source of information for legal disclosures, such as Phase I Environmental Site Assessments (ESAs), and to facilitate interagency cooperation.

Federal Emergency Management Agency

The primary mission of the Federal Emergency Management Agency (FEMA) is to reduce the loss of life and property and to protect the nation from all hazards, including natural disasters, acts of terrorism, and other human-made disasters, by leading and supporting a risk-based, comprehensive emergency management system of preparedness, protection, response, recovery, and mitigation.

Disaster Mitigation Act

The Disaster Mitigation Act of 2000 requires a state mitigation plan as a condition of disaster assistance, adding incentives for increased coordination and integration of mitigation activities at the state level through the establishment of requirements for two different levels of state plans: "Standard" and "Enhanced." States that develop an approved Enhanced State Plan can increase the amount of funding available through the Hazard Mitigation Grant Program. The Disaster Mitigation Act also established a new requirement for local mitigation plans.

Federal Aviation Administration

The FAA is charged with the review of construction or alterations that occur in the vicinity of airports. Its role in reviewing these activities is to identify potential aeronautical hazards and prevent or minimize adverse impacts to the safe and efficient use of navigable airspace. The regulations in the Code of Federal Regulations (CFR), Title 14, Part 77 (or FAR Part 77), are designed to ensure that no permanent or temporary obstructions are allowed into the navigable air space that would endanger the public or limit the efficient use of airspace. Proposed structures are also evaluated against Terminal En Route Procedures, which ensure that an object does not adversely impact flight procedures. Tall structures, including buildings, construction cranes, and cell towers, in the vicinity of an airport can be hazardous to the navigation of airplanes. FAR Part 77 identifies the maximum height at which a structure would be considered an obstruction based on its proximity to the airport. All objects over 200 feet above ground level (AGL) are impacted by these regulations, and any object less than 200 feet AGL within 20,000 feet of an airport must be evaluated based on height and location relative to the airport.

Toxic Substances Control Act

Established in 1976 and amended on December 31, 2002, the Toxic Substances Control Act (TSCA) (15 United States Code [USC] Title 15, Sections 2601–2692) grants the EPA power to require proper reporting, record-keeping, and testing requirements related to chemical substances and/or mixtures. Specifically, the TSCA addresses the production, importation, use, and disposal of specific chemicals, including PCBs, asbestos, radon, and LBPs. The TSCA establishes the EPA's authority to require the notification of the use of chemicals, require testing, maintain a TSCA inventory, and require those importing chemicals under Sections 12(b) and 13 to comply with certification and/or other reporting requirements. This federal legislation also phased out the use of asbestos-containing materials in new building materials and set requirements for the use, handling, and disposal of asbestos-containing materials. Disposal standards for lead-based paint wastes are also detailed in the TSCA.

The Emergency Planning and Community Right-To-Know Act

The Emergency Planning and Community Right-To-Know Act (also known as Title III of the Federal Superfund Amendments and Reauthorization Act, or "SARA III") (42 USC section 11001 et seq.) was established by the EPA to allow for emergency planning at the state and local level regarding chemical emergencies, to provide notification of emergency release of chemicals, and to address the community's right to know about hazardous and toxic chemicals in their area. SARA III was designed to increase community access and knowledge about chemical hazards as well as facilitate the creation and implementation of state/ tribal emergency response commissions responsible for coordinating certain emergency response activities and appointing local emergency planning committees. Section 1910.1200(c) Title 29 of the CFR defines "chemicals or hazardous materials" for the purposes of SARA III.

Hazardous Materials Transportation Act—Safe Transport of Hazardous Materials

The USDOT regulates hazardous materials transportation between states under 49 CFR Chapter 1, Parts 100-185. In California, the California Department of Transportation (Caltrans) and the California Highway Patrol enforce federal law related to the transport of hazardous materials. Together, these agencies determine driver training requirements, load labeling procedures, and specifications for container types.

Resource Conservation and Recovery Act

The 1976 Federal Resource Conservation and Recovery Act and the 1984 RCRA Amendments regulate the treatment, storage, and disposal of hazardous and nonhazardous wastes. The legislation mandates that hazardous wastes be tracked from the point of generation to ultimate fate in the environment. This includes detailed tracking of hazardous materials during transport and permitting of hazardous material handling facilities.

Comprehensive Environmental Response, Compensation and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 introduced active federal involvement to emergency response, site remediation, and spill prevention, most notably the Superfund program. The act was intended to be comprehensive in encompassing both the prevention of and response to uncontrolled hazardous substances releases. The act deals with environmental response, providing mechanisms for reacting to emergencies and chronic hazardous material releases. In addition to procedures to prevent and remedy problems, it establishes a system for compensating appropriate individuals and assigning appropriate liability. It is designed to plan for and respond to failure in other regulatory programs and to remedy problems resulting from action taken before the era of comprehensive regulatory protection.

State Regulations

California Health and Safety Code and Code of Regulations

California Health and Safety Code Chapter 6.95 and California Code of Regulations, Title 19, Section 2729, set out the minimum requirements for business emergency plans and chemical inventory reporting. These regulations require businesses to provide emergency response plans and procedures, training program information, and a hazardous material chemical inventory disclosing hazardous materials stored, used, or handled on-site. A business that uses hazardous materials or a mixture containing hazardous materials must establish and implement a business plan if the hazardous material is handled in certain quantities.

Department of Toxic Substance Control

The DTSC is a department of CalEPA and is the primary agency in California that regulates hazardous waste, cleans up existing contamination, and looks for ways to reduce the hazardous waste produced in California. The DTSC regulates hazardous waste in California primarily under the authority of the federal RCRA and the California Health and Safety Code (primarily Division 20, Chapters 6.5 through 10.6, and Title 22, Division 4.5). Other laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning.

Government Code Section 65962.5 directs DTSC to compile a list (commonly referred to as the Cortese List) of DTSC-listed hazardous waste facilities and sites, Department of Health Services (DHS) lists of contaminated drinking water wells, sites listed by the State Water Resources Control Board as having underground storage tank (UST) leaks and which have had a discharge of hazardous wastes or materials into the water or groundwater, and lists from local regulatory agencies of sites that have had a known migration of hazardous waste/material.

California Building Code

The State of California provided a minimum standard for building design through the California Building Code (CBC), which is in Part 2 of Title 24 of the California Code of Regulations. Commercial buildings are plan-checked by the City for compliance with the CBC. Typical fire safety requirements of the CBC included; the installation of sprinklers, establishment of fire resistance standards for fire doors, certain building materials, and particular types of construction, and the clearance of debris and vegetation within a prescribed distance from occupied structures in wildlife hazard areas.

State of California Multi-Hazard Mitigation Plan

The State of California Multi-Hazard Mitigation Plan (SHMP) is the official statement of the State's hazard identification, vulnerability analysis, and hazard mitigation strategy. The SHMP is also a federal requirement under the Disaster Mitigation Act of 2000 for the State of California to receive federal funds for disaster assistance grant programs (Cal OES 2018). The goal of the SHMP, prepared by the Office of Emergency

Services (OES), is to guide implementation activities to achieve the greatest reduction of vulnerability, which results in saved lives, reduced injuries, reduced property damages, and protection for the environment. The State OES is currently working with the California Office of Planning Research to incorporate hazard mitigation planning into General Plan guidelines.

California Fire Safety Regulations

There are number of State regulations pertaining to fire hazards, including the following.

- Public Resources Code Fire Safe Regulations. Section 4290 of the Public Resources Code (PRC) covers Fire Safe Regulations, establishing minimum road standards; signing for streets, roads, and buildings; private water supply resources; and wildland fuel modification. Section 4290 works in conjunction with building construction development standards in State Responsibility Areas (SRAs), which are State-identified lands or areas for which the California Department of Forestry and Fire Protection (CAL FIRE) has the primary responsibility to manage the public safety during a fire incident (OSFM 2021a). SRAs are defined based on land ownership, population density, and land use. In Butte County, SRAs primarily consist of private property outside of incorporated areas and outside of the valley floor. For example, CAL FIRE does not have responsibility for densely populated areas, the valley area, or lands administered by the federal government. In addition, Section 4291 of the PRC requires annual defensible space of 100 feet to be provided around all structures in or adjoining any mountainous area or land covered with forest, brush, grass, or other flammable material.
- Wildland-Urban Interface Code. The California Building Commission adopted the Wildland-Urban Interface Codes in late 2005 with an effective date of January 2008 (OSFM 2021b). These new codes include provisions for ignition-resistant construction standards in fire-prone areas. More specifically, new buildings in any fire hazard severity zone within SRAs, any locally designated Very High Fire Hazard Severity Zone (VHFHSZ), or any Wildland-Urban Interface Fire Area must meet the requirements in the new codes (OSFM 2021b). As part of the code revision process, fire hazard severity zones were evaluated and updated. The updated fire hazard severity zones are used by building officials to determine appropriate construction materials for new buildings in the wildland-urban interface. These zones are also used by property owners to comply with natural hazards disclosure requirements at the time of property sale, including wildland areas that may contain substantial forest fire risks and hazards, and VHFHSZs. These fire hazard severity zones are also used by local governments when updating their Safety Elements.
- Uniform Fire Code. This code may be adopted by counties and local jurisdictions with amendments and provides minimum standards for many aspects of fire prevention and suppression activities. These standards include provisions for access, water supply, fire protection systems, and the use of fire-resistant building materials. However, the Office of the State Fire Marshal (SFM), along with other State agencies, is in the process of developing and proposing a new Building and Fire Code for California using the 2006 International Building Code (IBC) and the International Fire Code (IFC)

as the base document. Many jurisdictions choose to adopt their own version, as is the case in Butte County.

- California Fire Code. This is the official code for the State of California and all political subdivisions. It is in Part 9 of Title 24 of the CCR (Title 24 is commonly referred to as the California Building Standards Code). The California Fire Code is revised and published every three years by the California Building Standards Commission. It was most recently published in 2019 (CBSC 2021).
- California Health and Safety Code. This code regulates the abatement of fire-related hazards. It also requires that local jurisdictions enforce the Uniform Building Code, which provides standards for fire-resistant building and roofing materials, and other fire-related construction methods.
- California Code of Regulations. Title 19 of the CCR establishes regulations related to fire prevention and engineering measures for new construction.
- Assembly Bill (AB) 337 (Bates Bill). In response to the Oakland Hills fire of 1991, this bill was passed in 1992. It requires brush clearance and fire-resistant roof material (Class A, B, or C) to be used on all new construction that is in any fire hazard severity zone.

California Department of Forestry and Fire Protection

The California Department of Forestry and Fire Protection (CAL FIRE) has mapped fire threat potential throughout California. CAL FIRE ranks fire threat based on the availability of fuel and the likelihood of an area burning (based on topography, fire history, and climate). The rankings include no fire threat, moderate, high, and very high fire threat. CAL FIRE produced the 2019 Strategic Fire Plan for California, with goals, objectives, and policies to prepare for and mitigate the effects of fire on California's natural and built environments.

The Office of the State Fire Marshal is proposing amendments to, and the relocation of, the regulation in 14 CCR, Section 1280, which designates FHSZ in SRA. Within this section are referenced maps titled "Maps of the Fire Hazard Severity Zones (FHSZ) in State Responsibility Areas of California. November 21, 2022." These maps are being updated as part of the proposal pursuant to California PRC) Sections 4201- 4204.

California Fire Code

The California Fire Code (CFC) is Part 9 of the California Building Standards Code (California Code of Regulations, Title 24). Updated every 3 years, the CFC includes provisions and standards for emergency planning and preparedness, fire service features, fire protection systems, hazardous materials, fire flow requirements, and fire hydrant locations and distribution. Similar to the CBC, the CFC is generally adopted on a jurisdiction-by-jurisdiction basis, subject to further modification based on local conditions. The latest edition of the California Fire Code is the 2022 edition with an effective date of January 1, 2023.

Federal and State Hazardous Materials-Specific Programs and Regulations

Asbestos-Containing Materials Regulations

Asbestos is a naturally occurring fibrous mineral that has been mined for its useful thermal properties and tensile strength. Asbestos-containing materials (ACM) are generally defined as either friable or nonfriable. Any material containing more than 1 percent asbestos is considered friable ACM; it is more likely to produce airborne fibers than nonfriable ACM and can be crumpled, pulverized, or reduced to powder by hand pressure. Nonfriable ACM contains 1 percent or less asbestos and it cannot be crumpled, pulverized, or reduced to powder by hand pressure. When left intact and undisturbed, ACM does not pose a health risk to building occupants. Potential for human exposure occurs when ACM becomes damaged and fibers become airborne and are inhaled. Inhalation of asbestos fibers can lead to various health problems, some extremely serious.

State-level agencies, in conjunction with the EPA and OSHA, regulate removal, abatement, and transport procedures for ACMs. Releases of asbestos from industrial, demolition, or construction activities are prohibited by these regulations, and medical evaluation and monitoring are required for employees performing activities that could expose them to asbestos. The regulations include warnings that must be heeded and practices that must be followed to reduce the risk for asbestos emissions and exposure. Finally, federal, state, and local agencies must be notified prior to the onset of demolition or construction activities with the potential to release asbestos.

Lead-Based Paint

Lead-based paint (LBP), which can result in lead poisoning when consumed or inhaled, was widely used in the past to coat and decorate buildings. Lead poisoning can cause anemia and damage to the brain and nervous system, particularly in children. Like ACM, LBP generally does not pose a health risk to building occupants when left undisturbed; however, deterioration, damage, or disturbance will result in hazardous exposure. In 1978, the use of LBP was federally banned by the Consumer Product Safety Commission. Therefore, buildings built before 1978 are presumed to contain LBP, as are buildings built shortly thereafter during the gradual phase-out of LBP.

Cal/OSHA's Lead in Construction Standard is in Title 8, Section 1532.1 of the California Code of Regulations. The regulations address all of the following areas: permissible exposure limits; exposure assessment; compliance methods; respiratory protection; protective clothing and equipment; housekeeping; medical surveillance; medical removal protection; employee information, training, and certification; signage; record keeping; monitoring; and agency notification.

Polychlorinated Biphenyls

The EPA prohibited the use of polychlorinated biphenyls (PCBs) in the majority of new electrical equipment starting in 1979 and initiated a phase-out for much of the existing PCB-containing equipment. The inclusion of PCBs in electrical equipment and their handling are regulated by the provisions of the Toxic Substances Control Act (15 USC Sections 2601 et seq.). Relevant regulations include labeling and periodic inspection requirements for certain types of PCB-containing equipment and outline highly specific safety procedures for their disposal. The State of California likewise regulates PCB-laden electrical equipment and materials contaminated above a certain threshold as hazardous waste, and they must be treated, transported, and disposed of accordingly. At lower concentrations for non-liquids, regional water quality control boards may exercise discretion over the classification of such wastes.

Regional Regulations

Shasta County Airport Land Use Compatibility

The Shasta County Airport Land Use Commission is responsible for airport land use compatibility planning in the county. Although the Redding Municipal Airport is owned by the City of Redding, it is within the jurisdiction of the County of Shasta. The planning area includes portions of the spheres of influence of both the City of Redding and the City of Anderson.

Central Valley Regional Water Quality Control Board

The Porter-Cologne Water Quality Act established the State Water Resources Control Board and divided the state into nine regional basins, each under the jurisdiction of an RWQCB. The Central Valley RWQCB (Region 5) regulates water quality in the Project area and has the authority to require groundwater investigations when the quality of groundwater or surface waters of the state is threatened, and to require remediation actions, if necessary.

The Central Valley Region is divided into three basins from north to south—the Sacramento River Basin, San Joaquin River Basin, and Tulare Lake Basin. The City of Redding is in the Sacramento River Basin.

Shasta County Sheriff's Department, Office of Emergency Services

The Shasta County's Office of Emergency Services (OES), a division of the sheriff's department, coordinates planning, preparedness, response, and recovery efforts for disasters in the unincorporated areas of the county. OES also works with federal, state, and other local agencies providing emergency management services, including the cities of Redding, Anderson, and Shasta Lake. OES is responsible for maintaining and updating the County Emergency Operation Plan (EOP), which is an all-hazards plan for Shasta County (Shasta 2022).

Local Regulations

2000-2020 Redding General Plan

The following policies are included in the existing General Plan and are applicable to hazards and hazardous materials. The numbering is from the existing General Plan and therefore may not be consecutive.

Natural Resources Element

- **Goal NR4:** Prevent and remedy surface-water, groundwater, and soil contamination.
    - **Policy NR4B:** Continue to accept, recycle, and/or properly dispose of household hazardous waste through ongoing operation of the City's Household Hazardous Waste Collection Program.
    - **Policy NR4D:** Work with Shasta County and other appropriate agencies to educate the public and business owners regarding proper handling and disposal of hazardous materials and household hazardous waste.
    - **Policy NR4E:** Establish and enforce penalties for illegal dumping of both hazardous and nonhazardous materials.

Health and Safety Element

- **Goal HS7:** Minimize the potential for, and damage resulting from, aircraft accidents.
    - **Policy HS7A:** Prevent development that could endanger the safety of air travelers and persons residing or working in the Airport environs by adhering to the land use policies contained in the Comprehensive Land Use Plans, Airport Approach Zone provisions of the Municipal Code, and applicable Shasta County Airport Land Use Commission (ALUC) resolutions.
- **Goal HS8:** Maintain and enhance the City's emergency-response capabilities and preparedness.
    - **Policy HS8A:** Maintain and periodically update the City's Emergency Response Plan and Local Hazard Mitigation Plan.
    - **Policy HS8B:** Encourage the involvement of local hospitals, schools, major businesses, utilities, the Red Cross, churches, and other service providers in emergency preparedness planning and training.
    - **Policy HS8C:** Review periodically, but not less than annually, emergency-service equipment and shelters to ensure that they are ready for immediate operation in the event of an emergency.
    - **Policy HS8D:** Require that residences and businesses maintain visible and clearly legible street address numbers to shorten the response time of emergency personnel.

- Goal HS9: Reduce the risk of personal injury, property damage, and environmental degradation resulting from the use, transport, disposal, and release/discharge, of hazardous materials.
    - Policy HS9A: Require new developments that produce, store, utilize, or dispose of significant amounts of hazardous materials or waste to incorporate appropriate state-of-the-art project designs and building materials to protect employees and adjacent land uses.
    - Policy HS9B: Continue operation of the City's Household Hazardous Waste Collection Program.
    - Policy HS9C: Require that soils containing toxic or hazardous substances be remediated to the satisfaction of the agency having jurisdiction prior to the granting of any permits for new development.
    - Policy HS9D: Promote the routing of vehicles carrying potentially hazardous materials along transportation corridors that reduce the risk of exposure to the public and sensitive environmental areas.
    - Policy HS9E: Implement the Hazardous Materials Emergency Response component of the City's Emergency Operations Plan in the event of a hazardous material spill, accident, or release within Redding's corporate limits.
    - Policy HS9F: Encourage the state to regularly monitor and report on the types and amounts of hazardous materials being transported through the Planning Area on state highways and Interstate 5.
    - Policy HS9G: Encourage the State Department of Health Services and the California Highway Patrol to review permits for radioactive materials on a regular basis and enforce public-safety standards for the use of these materials, including the placarding of transport vehicles.
- Goal HS10: Ensure the continued functioning of essential critical, sensitive, and high-occupancy facilities following a disaster.
    - Policy HS10A: Prevent the placement of new critical, sensitive, or high-occupancy facilities within high hazard areas; ensure adequate street access.
    - Policy HS10B: Encourage owners of existing critical, sensitive, and high-occupancy facilities with significant seismic vulnerabilities to upgrade, relocate, or phase out the facilities as appropriate.
- Goal HS11: Plan for the orderly evacuation of people and their possession during emergency and/or disaster situations.

- **Policy HS11A:** Ensure that emergency personnel receive adequate training in traffic-control and evacuation procedures as required by the City's Emergency Operations Plan.
- **Policy HS11B:** Publicize evacuation routes contained within the City's Emergency Operations Plan as a general guide for improving the awareness and preparedness of residents located in high hazard areas.

Emergency Operations Plan (EOP)

The City's Emergency Operations Plan (EOP) was adopted in 2014. The EOP is an all-hazard plan that details the roles and responsibilities of the different agencies and public services will organize and response to emergencies and disasters in the City of Redding. EOP provides the framework for coordinates response and recover activities during a large-scale emergency (Redding 2014).

Redding Local Hazard Mitigation Plan (LHMP)

Under the Federal Disaster Act of 2000, jurisdictions are required to prepare Local Hazard Mitigation Plans (LHMPs) that are subject to state review. The City of Redding LHMP assesses hazard vulnerabilities and identifies mitigation actions that the City will pursue in order to reduce the level of injury, property damage, and community disruption that might otherwise result from such events. The actions address hazards, as well as specific activities for wildland fire; flood; hazardous material; severe winter weather; earthquakes; utility disruption; aviation disaster; Chemical, Biological, Radiological, Nuclear, Explosives (CBRNE); dam overflow or failure; and volcanic issues. The most recent update to the City of Redding Local Hazard Mitigation Plan was adopted by the City in 2023 (Redding 2023a).

The Redding Fire Department (RFD) Operations Division is responsible for emergency management in the City of Redding. The City Fire Chief is the Emergency Services Coordinator responsible for maintaining and updating the City's Local Hazard Mitigation Plan (LHMP); the City adopted its current LHMP in 2021. The RFD provides emergency responses to hazardous materials incidents in the city. As needed, the RFD is assisted by the Shasta-Cascade Hazardous Materials Response Team (SCHMRT), a multiagency team based in Shasta County and serving the counties of Shasta, Tehama, Trinity, Siskiyou, and Modoc (Redding 2015b). The RFD is currently working with the community to update and prepare the Local Hazard Mitigation Plan 2022 (Redding 2022a).

Redding Municipal Airport Master Plan (RAMP)

The Airport Master Plan provides guidance for future development of the Airport while also being compatible with the surrounding environment. The 2015 document focuses on changes and development of the airport since the previous Master Plan in 2004 and projects facility needs for future airport operations. On June 2022, Redding City Council unanimously approved the name change from the Redding Municipal Airport to the Redding Regional Airport (West 2023).

Benton Airpark Airport Master Plan

Benton Airpark's Airport Master Plan involves forecasts of aviation activity through 2022. This includes forecasts of based aircraft, based aircraft fleet mix, and annual aircraft operations. The Airport Master Plan's forecasts are only guidelines and planning must remain flexible enough to respond to unforeseen facility needs. The forecast analysis provided in the Airport Master Plan examines recent developments, historical information, and current aviation trends to provide an updated set of aviation demand projections for Benton Airpark. The intent is to permit the City of Redding to make planning adjustments necessary to ensure that the facility meets projected demands in an efficient and cost-effective manner.

Fire Safe Building Construction and Methods for Wildland Urban Interface Fire Areas

The Fire Safe Building and Methods for Wildfire Urban Interface (WUI) Fire Areas published in 2008, details the WUI-related Chapter 7A, Materials and Construction Methods for Exterior Wildfire Exposure, from the California Building Code in January 2009. The document was implemented into the city standards.

City of Redding Municipal Code

Municipal Code Section 18.40.110, Performance standards – Citywide, requires that "the use, handling, storage and transportation of hazardous and extremely *hazardous materials* shall comply with the provisions of the California Hazardous Materials Regulations, the California Fire and Building Codes, and any other applicable laws."

Municipal Code Section 18.43.050, Automobile/vehicle repair, minor and major, requires automotive repair businesses to obtain the necessary permits for storage and use of hazardous materials.

Municipal Code Chapter 3.16, Fire Regulations, sets fire regulations for airport operation such as storing flammable liquid, heating equipment, fueling, or draining aircraft.

Municipal Code Chapter Section 9.20, Fire Code, of the Redding Municipal Code, the City adopted the 2022 California Fire Code as well as the 2021 International Fire Code of the International Code Council.

5.9.1.2 EXISTING CONDITIONS

This section describes existing conditions on hazardous materials, airport hazards, and wildland fires in the City of Redding.

Hazardous Materials

Hazardous materials include a wide variety of substances commonly used in households and businesses. Used motor oil, paint, solvents, lawn care and gardening products, household cleaners, gasoline, and refrigerants are among the diverse range of substances classified as hazardous materials. Nearly all businesses and residences generate some amount of hazardous waste. Certain businesses and industries

generate larger amounts of such substances, including gas stations, automotive service and repair shops, printers, dry cleaners, and photo processors. Hospitals, clinics, and laboratories generate medical waste, much of which is also potentially hazardous.

Clear Creek and Stillwater Wastewater Treatment Plants

The City of Redding Clear Creek and Stillwater Wastewater Treatment Plants store and utilize chlorine gas to disinfect wastewater and then neutralize the chlorine with sulfur dioxide gas prior to reclaimed water discharge into the Sacramento River (Redding 2023a). The operators at the plant treat influent wastewater to high-quality standards, ensuring that stringent water quality criteria are met, and that public health and the environment are protected. Both the Stillwater and the Clear Creek Wastewater Treatment Plant are operated and maintained in compliance with National Pollutant Discharge Elimination System (NPDES) permit from the California Central Valley Regional Water Quality Control Board (Redding 2022b; 2023a).

Hazardous Materials Transport

Transportation of hazardous materials on the highways is regulated through the Federal Department of Transportation (DOT) and the California Department of Transportation (Caltrans). This includes a system of placards, labels, and shipping papers that must identify the hazards of shipping each class of hazardous materials. Existing federal laws which address risks associated with the transport of hazardous materials include the Materials Transportation Act, administered by the DOT. At the State level, Caltrans implements the DOT regulations, and the California Highway Patrol (CHP) enforces them. Regulation of hazardous materials and wastes include the manufacturing of packaging and transport containers, packing and repacking, labeling, marking, or placarding, handling, spill reporting, routing of transports, training of transport personnel, and registration of highly hazardous material transport.

Areas of concern in the City of Redding are the Union Pacific Railroad and Interstate 5, which are major interstate transportation routes that pass through our community. In addition, State Routes 44, 273, and 299 East and West support relatively high traffic volumes. Trains and trucks commonly carry a variety of hazardous materials, including gasoline and various crude-oil derivatives and other chemicals known to cause human health problems (Redding 2023a)). The National Hazardous Materials Route Registry (NHMRR) lists State Route 44 from I-5 in the City Redding to State Route 36 in Susanville as having a Class 1 designation meaning transportation of explosives (DOT 2022a). The City's roads and streets are used to transport locally generated wastes from the source to the regional highway systems. In addition, within the last decade, the City of Redding has had 20 reported hazardous materials releases during highway transportation (DOT 2022b).

Hazardous Sites

According to the State Water Resources Control Board, there are 251 GeoTracker sites in the city, 15 of which are open cases. The 15 open sites include eight cleanup program sites and seven LUST Cleanup sites.

The Department of Toxic Substances Control reports 31 Envirostor sites in the city, two of which are listed as active, and one is listed as a federal superfund site. Table 5.9-1, *Geotracker Sites in the City of Redding*, and Table 5.9-2, *Envirostor Sites in the City of Redding*, summarize the status of the hazardous material sites within the city.

TABLE 5.9-1 GEOTRACKER SITES IN THE CITY OF REDDING

Types of Sites	Status	Number of Sites
Cleanup Program Site	Completed – Case Closed	29
	Completed – Case Closed – Land Use Restrictions	2
	Open – Assessment and Interim Remedial Action	2
	Open – Remediation	3
	Open – Site Assessment	2
	Open – Verification Monitoring	1
LUST Cleanup Site	Completed – Case Closed	204
	Open – Eligible for Closure	2
	Open – Remediation	1
	Open – Site Assessment	4
Military UST Site	Completed – Case Closed	1
Subtotal, Open/Active Cases:		**15**
Total		**251**

Source: SWRCB 2022

TABLE 5.9-2 ENVIROSTOR SITES IN THE CITY OF REDDING

Types of Sites	Status	Number of Sites
State Response	Certified O&M - Land Use Restrictions Only	1
	No Further Action	1
	Refer: Local Agency	1
Federal Superfund	Active*	1
Hazardous Waste – RCRA/ Standardized	Closed	2
Historical	Refer: Other Agency	7
	Refer: RCRA	1
	Refer: RWQCB	1
School Investigation	No Action Required	4
	Inactive – Withdrawn	1
Tiered Permit	Inactive – Needs Evaluation	1
Voluntary Clean Up	Active	1
	No Further Action	2
Evaluation	No Action Required	1
	Refer: RWQCB	5
	Refer: Other Agency	1
Subtotal, Open/Active Cases:		**2**
Total		**31**

Source: DTSC 2022
*Iron Mountain Mine

The Iron Mountain Mine (IMM) is listed as a Federal Superfund site and has been on the EPA's National Priority List since 1983. The IMM site encompasses approximately 4,400 acres which includes extensive underground workings, several waste rock dumps and tailing piles and an open pit mine area. The site was mined for iron, gold, silver, copper, zinc, and pyrite from the 1860s to 1963. Discharge of acid mine drainage (AMD), to local tributaries and the Sacramento River, is considered a potential public and biological threat. IMM was divided into a number of operable units (OUs) based on corresponding Interim Record of Decision (ROD). Specific details of remedial projects are discussed under each of the individual OUs (DTSC 2022b). The IMM is located off State Route (SR-) 299 and is nine miles northwest of Redding's city limits.

Fire Hazards

CALFIRE's Fire Hazard Severity Zones (FHSZ) can be shown on Figure 5.9-1*, Fire Hazards Zones within City Limits, SOI, and Planning Area*. According to CALFIRE mapping, portions of the City are identified as Very High Fire Hazard Severity Zones (VHFHSZ) in Local Responsibility Areas (LRA) and are primarily located on the north and northwest portions of the City. As shown in Figure 5.9-1, the southwest portion of the City's limits and unincorporated areas surrounding the City are identified as VHSZ and High Severity Zone (HSZ) in State Responsibility Areas (SRA).

Airports

The major aviation facilities in the City of Redding include the following (Redding 2015a):

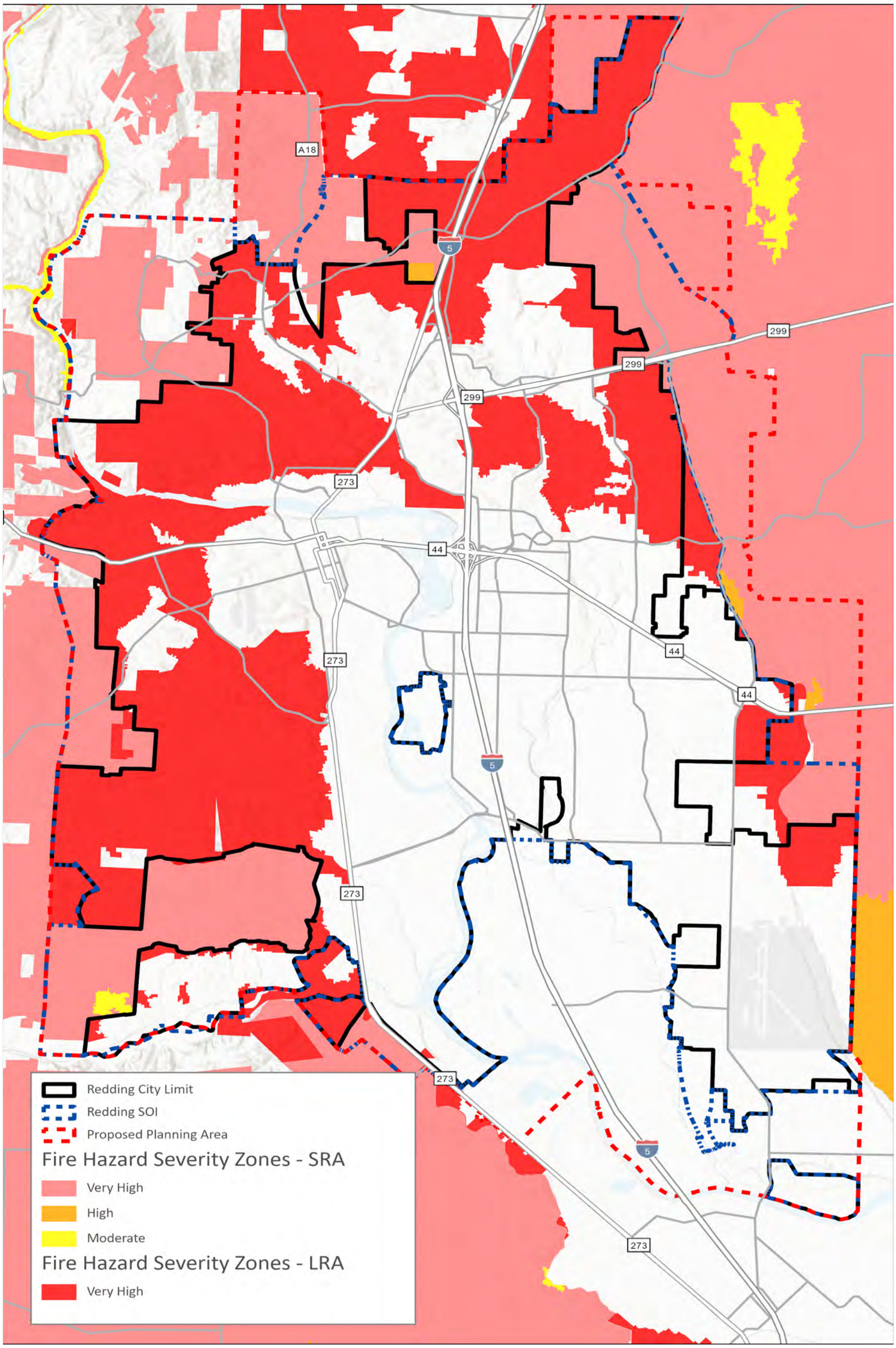
- Redding Regional Airport: Previously known as Redding Municipal Airport is a public airport owned and operated by the City of Redding-Airports Division. The airport is located on 6751 Woodrum Cir and encompasses approximately 1,500 acres of land. The current runway system consists of two runways with the primary instrument runway at 7,003 feet.
- Benton Airpark: A public airport owned and operated by the City of Redding- Airports Division. The airport is located on 2600 Gold St. The airport has a single 2,420-foot runway, no published approached, and 97 based aircraft.
- Tews Field. A private-use facility located on Moody Creek Drive with a single 1,800-foot runway and three based aircraft.

Figure 5.9-2, *Public Airports in the City of Redding*, shows the Benton Airpark and Redding Regional Airport's Airport Influence Area (AIA).

Heliport

There are three private heliports within the City of Redding. These three heliports are located in the Mercy Medical Center, and Shasta Regional Medical Center and McConnell Foundation (Airnav 2022).

5.9 HAZARDS AND HAZARDOUS MATERIALS

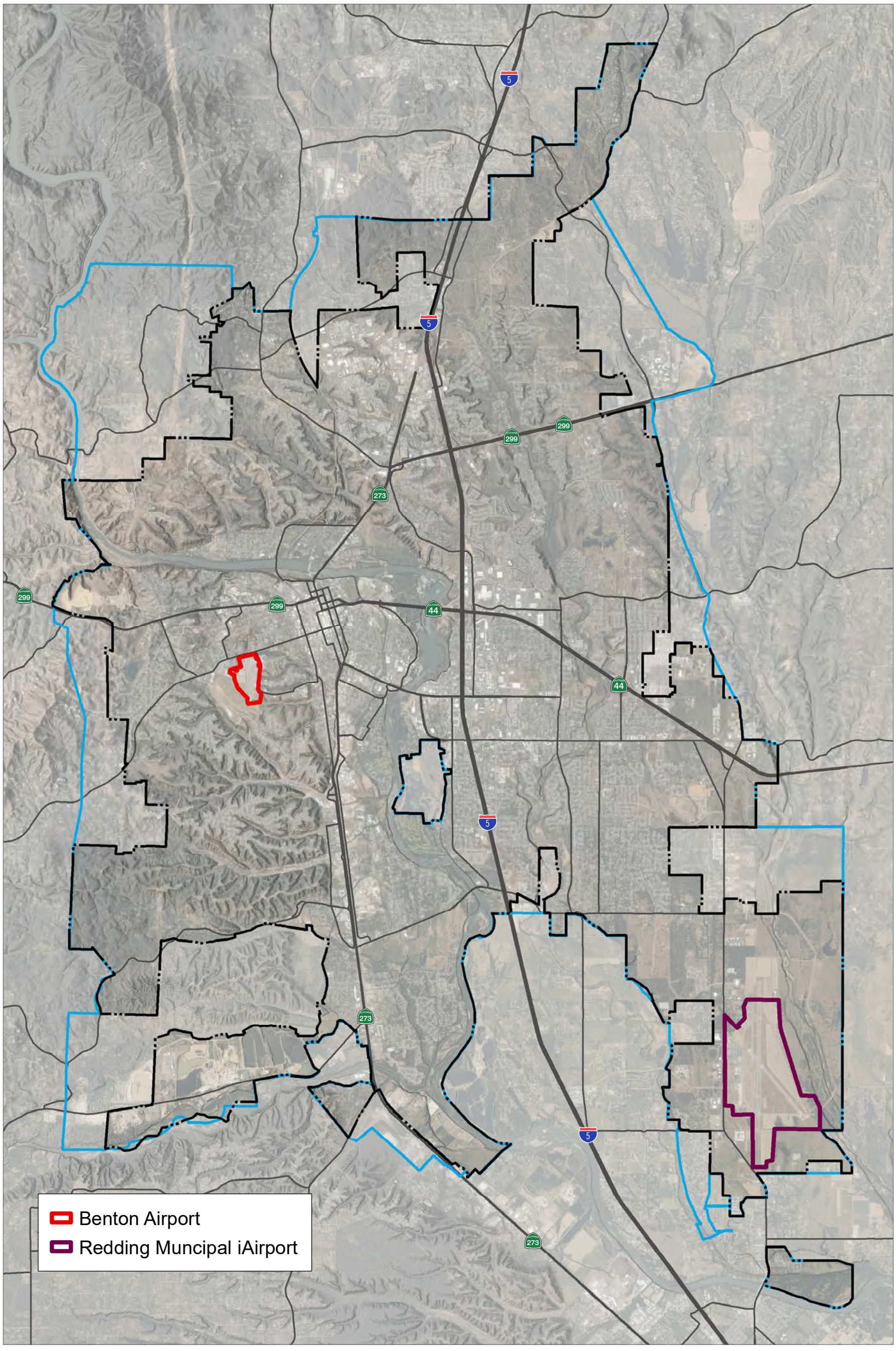


Source: Generated using ArcMap, 2023; City of Redding GIS 2017, 2021, and 2022; CAL FIRE, 2007.

0 2
Scale (Miles)

Figure 5.9-1
Fire Hazards Zones within the City of Redding

5.9 HAZARDS AND HAZARDOUS MATERIALS



Source: Generated using ArcMap, 2023; City of Redding GIS 2017, 2021, and 2022; CAL FIRE, 2007.

Figure 5.9-2
Public Airports in the City of Redding

5.9.2 THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the State CEQA Guidelines, the proposed project would have a significant impact if it would:

HAZ-1 Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

HAZ-2 Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

HAZ-3 Emit hazardous emissions or handle hazardous or acutely hazardous materials, substance, or waste within one-quarter mile of an existing or proposed school.

HAZ-4 Be located on a site which is included on a list of hazardous materials compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment.

HAZ-5 For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would result in a safety hazard or excessive noise for people residing or working in the project area.

HAZ-6 Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

HAZ-7 Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.

HAZ-8 In combination with past, present, and reasonably foreseeable projects, result in cumulative impacts with respect to hazards and hazardous materials.

5.9.3 PROPOSED GENERAL PLAN POLICIES

The following are relevant policies of the Redding General Plan Update, which may contribute to the reduction of hazards as a result of implementation of the proposed project.

Public Safety Element

- **Policy PS3A:** Utilize the Emergency Operations Center (EOC) for coordination of information and emergency response in the event of potential flooding created by uncontrolled releases from Shasta and Whiskeytown Dams.

- **Policy PS4G:** Consider establishing a program to construct and maintain fire-access roads in ravine areas considered to have a very high fire danger to enhance the ability to suppress wildland fires. These roads need not be surfaced and may also function as part of the City's trail system. Erosion and impacts to native vegetation and natural features should be minimized.
- **Policy PS4H:** Work with local community services districts (i.e., water districts) to ensure that district systems are developed, maintained, and monitored to provide minimum fire-flow, rates, and peak-load capacity for fire suppression.
- **Policy PS4I**: Require that remote hillside developments maintain sufficient water supplies on-site, when appropriate, to provide wildland fire protection. Water supplies may be stored in the form of ponds, storage tanks, or other features acceptable to the Fire Marshal.
- **Policy PS4J***:* Utilize techniques, as determined appropriate by the Fire Marshal, to reduce fire damage in those areas with a high wildland fire potential.
- **Policy PS4K:** Enforce subdivision regulations that generally limit cul-de-sac lengths to no greater than 600 feet and strive to ensure that sufficient emergency-vehicle turnaround areas are provided.
- **Policy PS4L:** Apply as appropriate, subdivision regulations requiring each residential development having 50 or more dwelling units and each commercial development employing 150 or more people to have at least two connected points of public access as may be determined necessary by the Fire Marshal.
- **Policy PS4M:** Seek to construct emergency-vehicle access routes to open-space areas at optimal locations within projects during the development process, as funding or law allows. As funding and physical conditions allow, construct such access routes in existing developments where warranted.
- **Policy PS4N:** Strive to ensure new subdivisions have adequate fire protection measures such as multi-access for firefighting apparatus, noncombustible building construction, appropriate defensible space, street widths and grade to accommodate emergency vehicles and evacuees simultaneously.
- **Policy PS4R:** Work with CAL FIRE and other appropriate public safety agencies to identify evacuation routes and their capacity, safety, and viability as required by AB747 and residential development in any identified fire hazard zone that does not have at least two emergency evacuation routes as required by SB99 within 24 months of adoption of this General Plan.
- **Policy PS5F:** Consider expanding Police services to the Redding Airport if and when necessary to support the growth/ needs for security and public safety.
- **Policy PS7A:** Discourage development that could endanger the safety of air travelers and persons residing or working in the Airport environs by adhering to the land use policies contained in the Comprehensive Land Use Plans, Airport Approach Zone provisions of the Municipal Code, guidance provided by the California Airport Land Use Planning Handbook, and applicable Shasta County Airport Land Use Commission (ALUC) resolutions.
- **Policy PS7B***:* Continue to update the Airport Emergency Plan and ensure it complies with State and Federal regulations.

- **Policy PS7C:** Consider establishing avigation easements for new development in vicinity of the Redding Regional Airport and Benton Airpark as appropriate to address overflight noise and other potential aviation-related impacts.
- **Policy PS8A:** Maintain and update the City's Emergency Response Plan and Local Hazard Mitigation Plan, as necessary.
- **Policy PS8B:** Encourage the involvement of local hospitals, schools, major businesses, utilities, the Red Cross, places of worship, and other service providers in emergency preparedness planning and training. Work toward educating the residents on emergency response, disaster preparedness protocols and procedures and disaster risk reduction.
- **Policy PS8C:** Collaborate with local and regional jurisdictions to periodically review, exercise and test emergency-service equipment, plans, and shelters so that they are better prepared for immediate operation in the event of an emergency.
- **Policy PS8D:** Consider requiring that residences and businesses maintain visible and clearly legible street address numbers, as may be required by state and local regulations, to shorten the response time of emergency personnel.
- **Policy PS8E:** Strive to ensure the continued functioning of critical facilities and the establishment of cooling, warming and clean air centers, as a part of an extreme weather preparedness program. Endeavor to partner with community groups and jurisdictions to develop and implement refuge centers in case of extreme weather, disease, or evacuation due to declared emergency. Consider adaptive reuse of public and community facilities to serve as shelters during crisis events.
- **Policy PS8F:** Maintain, update, and make publicly available all comprehensive emergency and evacuation plans and maps which address emergency preparedness, evacuation and rescue, information on hazardous materials, location and information on the protection of critical facilities, and development guidelines to reduce the risk of panic during a disaster and to enhance preparedness, as appropriate.
- **Policy PS9A:** New developments that produce, store, utilize, or dispose of significant amounts of hazardous materials or waste should incorporate appropriate state-of-the-art project designs and building materials to protect employees and adjacent land uses, as required by state and local regulations.
- **Policy PS9B***:* Continue operation of the City's Household Hazardous Waste Collection Program to encourage proper disposal of products containing hazardous materials or wastes.
- **Policy PS9C:** Where soils containing toxic or hazardous substances are identified, remediation to the satisfaction of the agency having jurisdiction should occur prior to ground disturbance allowed by any permits for new development or as otherwise required by the responsible agency.
- **Policy PS9D:** Strive to route vehicles carrying potentially hazardous materials along transportation corridors that reduce the risk of exposure to the public and sensitive environmental areas.
- **Policy PS9E:** Take appropriate actions to implement the Hazardous Materials Emergency Response component of the City's Emergency Operations Plan in the event of a hazardous material spill, accident, or release within Redding's corporate limits.

- Policy PS9F*:* Encourage the state to regularly monitor and report on the types and amounts of hazardous materials being transported through the Planning Area on state highways and Interstate 5.
- Policy PS9G: Encourage the State Department of Health Services and the California Highway Patrol to review permits for radioactive materials on a regular basis and enforce public-safety standards for the use of these materials, including the placarding of transport vehicles.
- Policy PS9H: Endeavor to educate residents and businesses on the need to reduce or eliminate the use of, and/or proper disposal of, hazardous materials and products. Encourage the use of safe, non-toxic, environment friendly equivalents for community well-being.
- Policy PS9I: Strive to attract and maintain clean industries and businesses in the City and discourage the expansion of industries, with exception of healthcare and related medical facilities that require on-site treatment of hazardous industrial waste.
- Policy PS9J: Consider enhancing Hazardous Material Emergency Response through a partnership with the Office of Emergency Services (OES) to attract additional resources including funding, to the region.
- Policy PS10A: To the extent feasible, locate new critical, sensitive, or high-occupancy facilities outside the high hazard areas, and ensure adequate street access to these facilities.
- Policy PS10B*:* Encourage owners of existing critical, sensitive, and high-occupancy facilities with significant seismic vulnerabilities to upgrade, relocate, or phase out the facilities as appropriate.
- Policy PS10C: Strive to ensure operational readiness of the Emergency Operations Center (EOC) in conjunction with other local, State, and Federal agencies. Work toward conducting training for staff on, and maintaining, testing, and updating plans and equipment to meet current standards, as necessary.
- Policy PS10D: Partner with local, regional, and federal agencies, as appropriate, to seek grants and other opportunities towards development and expansion of clean air centers, building ventilation upgrades, and other available and accessible technological advancements to provide better air quality to vulnerable residents to reduce negative health impacts of wildfires.
- Policy PS11A: Strive to ensure that emergency personnel receive adequate training in traffic-control and evacuation procedures as required by the City's Emergency Operations Plan.
- Policy PS11B*:* Evacuation routes contained within the City's Emergency Operations Plan should be published and reinforced in public materials as a general guide for improving the awareness and preparedness of residents located in high-hazard areas, as appropriate.
- Policy PS11C: Consider implementing an emergency evacuation plan and consistently educate residents on:
    - Access: Evacuation routes laid out for residents to use in case of emergency.
    - Signage: Signage, wayfinding, and designated evacuation routes.
    - Communication: Timely notices that may arrive through multiple communication avenues.
    - Assistance: Available assistance programs to aid resident evacuation during emergency.

Community Health, Wellness, and Environmental Justice Element

- **Policy EJ7E:** As funding and resources permit, implement an emergency evacuation plan and consistently educate residents on:
    - *Access*: Evacuation routes laid out for residents to use in case of emergency
    - *Signage*: Signage, wayfinding, and designated evacuation routes
    - *Communication*: Timely notices that may arrive in a variety of languages to accommodate the linguistic preferences of all residents and through multiple communication avenues including Assistive Listening Devices
    - *Assistance*: Available assistance programs to aid residents evacuation during emergencies.
- **Policy EJ7F:** Identify emergency shelters as a part of the emergency preparedness program, partnering with community groups and jurisdictions, to develop and implement refuge centers in case of extreme weather events, disease, or declared emergency. Consider adaptive reuse of public and community facilities to serve as emergency shelters during crisis.
- **Policy EJ7G:** Consider and implement emergency policies and procedures that appropriately allow service and companion animals to be permitted access to emergency facilities.

5.9.4 IMPACT DISCUSSION

HAZ-1	The proposed project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

Construction

During construction of future projects throughout the City, new development would potentially involve the use of hazardous materials, such as fuels, lubricants, paints, solvents, and greases in construction equipment and coatings used in construction. As mentioned in 5.9.2.2, Existing Conditions, hazardous materials is transported through Union Pacific Railroad and I-5 which are major interstate transportation routes that pass through the City. In addition, State Routes support relatively high traffic volumes with trains and trucks that can carry variety of hazardous materials. Future construction activities would be short-term in nature, and the materials used would not require use or storage of hazardous materials in quantities that would pose a substantial safety hazard. Future construction contractors would be required to ensure that the use, transport, storage, and disposal of construction-related materials is in conformance with existing laws and regulations, such as the DOT's Hazardous Materials Regulations Title 49 Code of Federal Regulations which sets general requirements for the transport of hazardous materials (Code of Federal Regulations).

According to California Vehicle Code § 32000.5, any motor carrier who transports hazardous materials must have a hazardous materials transportation license issued by CHP. In addition, the CHP Handbook 84.3, Explosive Materials Shipments: Routes, Safe Stopping Places, and Safe Parking Places, sets traveling restrictions when transporting hazardous materials through or into Redding (CHP 2021):

- North and southbound traffic going west on SR-299 exit at the Central Redding-Eureka (SR-299) exit, proceed west on SR-299 to Pine Street, then north on Pine Street to Eureka Way, then west on Eureka Way (SR-299).
- North and southbound traffic going east on SR-299 shall exit I-5 at the Burney-Alturas (SR-299) exit, then proceed east.
- North and southbound traffic going east on SR-44 shall exit I-5 at Lassen Park (SR-44) exit and proceed east.

Although the General Plan Update is not expected to result in the use of explosive materials, future projects must comply with applicable requirements and procedures pertaining to the operation of vehicles transporting hazardous materials in order to prevent injury or loss of life resulting from accidents involving vehicles carrying explosives.

Also, construction activities would be conducted in accordance with the Storm Water Pollution Prevention Plan (SWPPP) as part of the National Pollutant Discharge Elimination System (NPDES) permit. The primary objective of the SWPPP is to identify, construct, implement, and maintain best management practices (BMPs) to reduce eliminate pollutants in stormwater discharges and authorized non-stormwater discharges from the construction site. BMPs for hazardous materials include, but are not limited to, off-site refueling, placement of generators on impervious surfaces, establishing clean out areas for cement, etc.

In addition, the General Plan Update includes policies regarding the use, storage, disposal, and transportation of hazardous materials:

- Policy PS9D: Strive to route vehicles carrying potentially hazardous materials along transportation corridors that reduce the risk of exposure to the public and sensitive environmental areas.
- Policy PS9E: Take appropriate actions to implement the Hazardous Materials Emergency Response component of the City's Emergency Operations Plan in the event of a hazardous material spill, accident, or release within Redding's corporate limits.
- Policy PS9F*:* Encourage the state to regularly monitor and report on the types and amounts of hazardous materials being transported through the Planning Area on state highways and Interstate 5.

The General Plan Update also includes policies that incorporate preventative measures to reduce the potential for hazardous materials to the public. Policy PS9A requires new developments that produce, store,

utilize, or dispose of significant amounts of hazardous materials or waste to incorporate appropriate state-of-the-art project designs and building materials to protect employees and adjacent land uses.

While the risk of exposure to hazardous materials cannot be eliminated, adherence to existing regulations would ensure compliance with safety standards related to the use and storage of hazardous materials and with the safety procedures mandated by applicable federal, state, and local laws and regulations, including the General Plan Update policies. Therefore, transport, use, and/or disposal of hazardous materials during construction activities in accordance with the proposed project would be properly managed, and impacts would be less than significant. Compliance with applicable laws and regulations governing the use, storage, and transportation of hazardous materials would ensure that all potentially hazardous materials are used and handled in an appropriate manner and would minimize the potential for impacts to occur.

Operation

Operation of projects developed pursuant to the General Plan Update would involve hazardous materials used in industrial, commercial, residential, and other land uses, including but not limited to: cleaners, solvents, paints, pesticides, and fertilizers. The amounts of hazardous materials used would vary by land use type. The General Plan Update is expected to increase in the number of hazardous waste generators.

Hazardous wastes are required to be stored, transported, and disposed of in conformance with existing regulations of the EPA, DOT, CalRecycle, and Shasta County Department of Resource Management, Environmental Health Division.

For example, the Health and Safety Code, Division 20, Chapter 6.7, Article 1, Business and Area Plan, requires regulated facilities to complete Hazardous Materials Business Plan (HMBP) reporting if they store hazardous materials in quantities equal to or greater than, 55 gallons (liquids), 200 cubic feet (gases) or 500 pounds (solids). The HMBP requires providing a Hazardous Materials Inventory and Site Map and Emergency response and Employee Training Plan (ER/TP) to be reported to the California Environmental Reporting System (CERS) (Shasta County 2023a). Future commercial and industrial uses must follow specific guidelines to manage, store, and transport generated hazardous waste detailed by the Shasta County Department of Resource Management Environmental Health which is the CUPA for the City of Redding. Businesses can take universal waste such as florescent lights and household batteries and similar materials to the Household Hazardous Waste Collection Facility (Shasta County 2023b). Residents can take their household hazardous waste for proper disposal free of charge to the collection facility. The City of Redding discloses the transportation of more than 5 gallons or 50 pounds of hazardous waste at a time under the Health and Safety Code, Division 20, Chapter 6.5, Section 25218.5 (Redding 2023c).

Additionally, implementation of General Plan Update Policy PS9A, which requires new developments to incorporate appropriate project designs and building materials to protect employees and adjacent land uses from hazardous materials or waste, and Policy PS9D, which aims to reduce the risk of exposure to the public and sensitive environmental areas by routing hazardous materials along transportation corridors, would

reduce impacts. Therefore, implementation of the General Plan Update would not result in substantial hazards to the public due to the transport, use, and/or disposal of hazardous material. Impacts would be less than significant.

Level of Significance Before Mitigation: HAZ-1 would be less than significant.

Mitigation Measures

No mitigation measures are required.

HAZ-2	The project would not 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.

Implementation of the General Plan Update would result in land uses that would require the use, transportation, and storage of hazardous materials throughout the City. Personal injury, property damage, environmental degradation, or death could result from the release of hazardous materials caused by upset or accident conditions. However, General Plan Update Policy PS9E, which directs the implementation of the Hazardous Materials Emergency Response component of the City's Emergency Operations Plan in the event of a hazardous material spill, accident, or release within Redding's corporate limits, would reduce such impacts. The purpose of the Emergency Operations Plan is to minimize damage to human health, natural systems, and property caused by the release of hazardous materials. Local responsibilities are principally focused on discovery, notification, evaluation, initiation of immediate protective actions, and monitoring of recovery operations. The Fire Department is designated as the Incident Command (IC) authority for all hazardous materials spills and emergencies occurring within the jurisdictional limits of the City, excluding state and federal lands or property. Therefore, in the case of an accidental spill or release of hazardous material, there are plans and responsible agencies in place to reduce significant hazards to the public.

Although the risk of upset and accident conditions involving the release of hazardous materials cannot be completely eliminated, it can be reduced to a manageable level. Shasta County Department of Resource Management, Environmental Health Division serves as the Certified Unified Program Agency (CUPA) for the City of Redding and is responsible for the Hazmat Business Plans, Hazardous Waste Generator and On-site Hazardous Waste Treatment (tiered permitting) Programs, Underground Storage Tank Program, California Accidental Release Prevention Program (CalARP), and the Aboveground Petroleum Storage (SPCC) Plans (Shasta County 2023).

Businesses using hazardous materials in Redding would be required to register with these programs and comply with their guidelines. Proper implementation of these CUPA programs, in conjunction with other State and federal regulations and the General Plan Update policies discussed above, would reduce the

impact of reasonably foreseeable accidents and/or upset conditions involving the release of hazardous materials to a less-than-significant level.

Level of Significance Before Mitigation: HAZ-2 would be less than significant.

Mitigation Measures

No mitigation measures are required.

HAZ-3	The project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 miles of an existing or proposed schools.

Implementation of the General Plan Update would allow land uses that would handle hazardous materials or generate hazardous emissions. It is possible that such uses could occur near existing or proposed schools. However, the General Plan Update includes policies aimed to keep sensitive facilities such as schools safe from the exposure of hazardous materials. For instance, Policy PS9D promotes the routing of vehicles carrying potentially hazardous materials along transportation corridors that reduce the risk of exposure to the public and sensitive environmental areas, and Policy PS10A aims to locate new critical, sensitive, or high-occupancy facilities outside the high hazard areas and ensure adequate street access to these facilities.

However, potential exposure to hazardous materials within proximity to school sites would be reduced as all users of hazardous materials are subject to federal, State, and local laws that ensure that hazardous material use, emission and transportation are controlled to a safe level. The combination of federal, State, and local regulations described in previous sections, and General Plan Update policies that call for reducing risks from the harmful effects of hazardous materials, would ensure that the risk of hazardous materials or emissions within proximity to school sites would be less than significant.

Level of Significance Before Mitigation: HAZ-3 would be less than significant.

Mitigation Measures

No mitigation measures are required.

HAZ-4	Implementation of the proposed project would not create a significant hazard to the public or the environment by being located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.

As noted in Table 5.9-1 and Table 5.9-2 there are a total of 282 sites in the City that are included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5. These sites have a history of contamination with hazardous materials and are subject to various State and federal laws and regulators, including the CERCLA, US EPA, DTSC, and RWQCB.

Development allowed by the General Plan Update could create a hazard to the public or the environment if the development occurs on contaminated sites. Although it is possible that construction activities resulting from the General Plan could occur within or adjacent to hazardous sites, development on or adjacent to any sites, such as those pursuant to Government Code 65962.5, would require environmental site assessment by a qualified professional to ensure that the projects would not disturb hazardous materials sites, nor create a substantial hazard to the public or the environment. Properties contaminated by hazardous substances are also regulated at the local, state, and federal level and are subject to compliance with stringent laws and regulations for investigation and remediation. For example, compliance with CERCLA, RCRA, California Code of Regulations, Title 22, and related requirements would remedy all potential impacts caused by hazardous substance contamination.

As mentioned in Section 5.9.1.2, Existing Conditions, the Iron Mountain Mine is listed as an active superfund site and located off SR-299, approximately nine miles northwest of Redding city limits, 1 mile northwest from the City's SOI, 0.6 miles northwest from the Planning Area,. The General Plan Update would not introduce people or development near this area and therefore would not have significant impact.

The General Plan Update includes Policy PS9C which requires that where soils containing toxic or hazardous substances are identified, remediation to the satisfaction of the agency having jurisdiction shall occur prior to the granting of any permits for new development or as otherwise required by the responsible agency. Therefore, this policy would not allow development to occur on a hazardous site unless remediated to a safe level for the public. The proposed General Plan Update policies, in combination with State and federal regulations, would reduce the hazard to the public and the environment to a less-than-significant level.

Level of Significance Before Mitigation: HAZ-4 would be less than significant.

Mitigation Measures

No mitigation measures are required.

HAZ-5	The project would be located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, resulting in a safety hazard or excessive noise for people residing or working in the project area.

As mentioned in 5.9.2.2, Existing Conditions, there are two public airports, one private-use facility, and three private heliports in the City of Redding. The Airport Master Plan for Redding Regional Airport focuses on facility changes and development direction of the airport. The Shasta County Airport Land Use Commission Comprehensive Land Use Plan covers the Redding Regional Airport and surrounding area.

Figure 5.9-2 shows the Benton Airpark and Redding Regional Airport AIAs. The Redding Regional Airport AIA consists of land use designations of public facilities, industrial, open space, and commercial. The majority of the land to the north, west, and south of the airport is designated for industrial development. The existing land uses surrounding Benton Airpark include the "closed" Benton Landfill, residential, open space, commercial, and office uses. Land designated for industrial development surrounding the Redding Regional Airport and open space surrounding the Benton Airpark would provide buffers between the airport and other potential non-compatible development, such as residences or public facilities.

The General Plan Update could bring in new development into these AIAs. However, future development in these AIAs would need to comply with existing regulations regarding airport areas. For example, Chapter 18.50, "A" Airport Environs Overlay, of the Municipal Code, includes provisions for height requirements, land use and nonconforming land use restrictions. Therefore, only restricted development allowed would occur in these areas.

The General Plan Update contains policies designed to lessen the impact of airport hazards, such as Policy PS7A, which discourages development that could endanger the safety of air travelers and persons residing or working in the Airport environs by adhering to the land use policies contained in the Comprehensive Land Use Plans, Airport Approach Zone provisions of the Municipal Code, and applicable Shasta County Airport Land Use Commission (ALUC) resolutions, and Policy PS7C, which seeks to establish an avigation easement for new development in vicinity of the Redding Regional Airport and Benton Airpark to address overflight noise and other potential aviation-related impacts. Proposed development under the General Plan Update would not conflict with the Benton Airpark's Airport Master Plan or the Redding Municipal Airport Comprehensive Land Use Plan. The proposed General Plan Update, in combination with local regulations and General Plan policies, would reduce airport hazards to a less-than-significant level.

Level of Significance Before Mitigation: HAZ-5 would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation: HAZ-5 would be less than significant.

HAZ-6	Implementation of the proposed project could impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

The General Plan Update would allow new development and population growth, which would result in an increase in demand for emergency services during disasters, which could affect the implementation of emergency response and evacuation plans.

Construction

An impact to emergency operations and evacuation under the proposed General Plan Update could occur from construction of potential future development projects if they were to result in temporary road closures and potentially disrupt evacuation routes. Potential future development in the city would be required to comply with SRA Fire Safe Regulations, the California Building Code, and the California Fire Code. Some traffic delays can be expected during proposed project construction; however, traffic impacts during construction are temporary in nature and would cease once construction activities are complete. Future construction-related road closures would be limited to the duration of the construction period, a detour plan would be created (as needed), and direct impacts of construction would be evaluated during the project environmental review process or permit review.

Future development under the proposed project would result in construction activities that could temporarily affect roadways as a result of lane closures. This could affect emergency response times or evacuation routes. However, future project applicants would need to apply for an encroachment permit application and submittal requirements including the Temp Traffic Control Plan Guidelines for projects that involve working in the City of Redding right of way with the City's Engineering Division (Redding 2023d).

Operation

The General Plan Update would increase the number of people who may need to evacuate the city in the event of an emergency. Future development under the proposed project would be required to comply with the provisions of most recent versions of the CFC and CBC, which would ensure that building and life safety measures are incorporated, and would facilitate implementation of emergency response plans. For example, the California Fire Code Chapter 49 cites specific requirements for wildland-urban interface areas that include, but are not limited to, providing defensible space and hazardous vegetation and fuel management.

The City of Redding EOP details emergency response and mitigation planning for the city. The EOP identifies the City's emergency planning, organizational, and response policies and procedures and how the City

would coordinate with emergency response from other levels of government. The City of Redding is also covered under the Redding Local Hazard Mitigation Plan (LHMP). Both the LHMP and EOP provide guidance to effectively respond to an emergency.

The operation phase of future development projects would not involve physical components that would interfere with the ability of the City, and emergency response service providers in the event of an emergency. The General Plan Update includes policies aimed to address the City's emergency preparedness in the event of natural or human-made disasters:

- Policy PS8A: Maintain and update the City's Emergency Response Plan and Local Hazard Mitigation Plan, as necessary.
- Policy PS8B: Encourage the involvement of local hospitals, schools, major businesses, utilities, the Red Cross, places of worship, and other service providers in emergency preparedness planning and training. Work toward educating the residents on emergency response, disaster preparedness protocols and procedures and disaster risk reduction.
- Policy PS8C: Collaborate with local and regional jurisdictions to periodically review, exercise and test emergency-service equipment, plans, and shelters so that they are better prepared for immediate operation in the event of an emergency.
- Policy PS8D: Consider requiring that residences and businesses maintain visible and clearly legible street address numbers, as may be required by state and local regulations, to shorten the response time of emergency personnel.
- Policy PS8E: Strive to ensure the continued functioning of critical facilities and the establishment of cooling, warming and clean air centers, as a part of an extreme weather preparedness program. Endeavor to partner with community groups and jurisdictions to develop and implement refuge centers in case of extreme weather, disease, or evacuation due to declared emergency. Consider adaptive reuse of public and community facilities to serve as shelters during crisis events.
- Policy PS8F: Maintain, update, and make publicly available all comprehensive emergency and evacuation plans and maps which address emergency preparedness, evacuation and rescue, information on hazardous materials, location and information on the protection of critical facilities, and development guidelines to reduce the risk of panic during a disaster and to enhance preparedness, as appropriate.

The General Plan Update would not interfere with an adopted emergency response plan or emergency evacuation. The proposed General Plan Update, in combination with state laws and regulations, as well as General Plan Update policies, would reduce hazards regarding implementation of emergency response and evacuation plans to a less-than-significant level.

Level of Significance Before Mitigation: HAZ-6 would be less than significant.

Mitigation Measures

No mitigation measures are required.

HAZ-7	The project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.

The General Plan Update would allow new development where there are fire risks that could expose people to loss, injury, or death due to wildfires. As shown in Figure 5.9-1, the north and northwest portions of the City limits are within VHFHSZ as designated by the LRA, the north and west portions of the SOI are within VHFHSZ as designated by the State Responsibility Area (SRA), and the north, west, and east portions of the Planning Area are within VHFHSZ as designated by the SRA.

Although majority of the land within the Very High Fire Hazard Severity Zones is designated as Greenway, there are residential, public facilities, and commercial uses allowed in these areas.

Development under the General Plan Update would be subject to compliance with the most recent California Building Code and California Fire Code. The California Fire Code (Part 9 of Title 24 of the California Code of Regulations) includes Section 4905.2, Construction Methods and Requirements within Established Limits. The California Fire Code Chapter 49 cites specific requirements for wildland-urban interface areas that include, but are not limited to, providing defensible space and hazardous vegetation and fuel management. Future development would be required to comply with the City's Municipal Code Chapter 9.20, Fire Code, which includes fire safety measures and protection systems for new buildings.

Additionally, the Redding Electric Utility's (REU) Wildfire Mitigation Plan provides strategies and measures aimed to reduce fire hazards from public utilities, such as vegetation management, enhanced inspections, and operational practices (REU 2021). The City of Redding is covered by the Shasta County Emergency Operations Plan and the Redding Local Hazard Mitigation Plan. These plans provide guidance to effectively respond to any emergency, including wildfires.

In addition, The General Plan Update includes policies that would reduce wildfire impacts:

- Policy PS4B*:* All new development and redevelopment projects should be designed to meet state and local standards for fire protection; encourage the upgrade of existing structures to current standards. Encourage the installation of smoke detectors in residential and commercial facilities constructed prior to the requirement of their installation, as appropriate.
- Policy PS4C*:* As resources allow, enforce existing codes and standards, to ensure all new and existing developments provide:
    - Defensible space.

  - Non-combustible design with appropriate building exterior and roofing materials.
  - Spark arresting system, Fire alarms, and fire sprinkler systems are installed.

- Policy PS4D: Continue to include the Fire Department in the project development review process to ensure projects adequately address safety, on-site fire protection, and comply with applicable fire and building codes.
- Policy PS4I: Require that remote hillside developments maintain sufficient water supplies on-site, when appropriate, to provide wildland fire protection. Water supplies may be stored in the form of ponds, storage tanks, or other features acceptable to the Fire Marshal.
- Policy PS4J*:* Utilize techniques, as determined appropriate by the Fire Marshal, to reduce fire damage in those areas with a high wildland fire potential.
- Policy PS4L: Apply as appropriate, subdivision regulations requiring each residential development having 50 or more dwelling units and each commercial development employing 150 or more people to have at least two connected points of public access as may be determined necessary by the Fire Marshal.
- Policy PS4N: Strive to ensure new subdivisions have adequate fire protection measures such as multi-access for firefighting apparatus, noncombustible building construction, appropriate defensible space, street widths and grade to accommodate emergency vehicles and evacuees simultaneously.

The General Plan Update would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. The proposed General Plan Update, in combination with state laws and regulations, as well as General Plan policies, would reduce hazards regarding fire risks to a less-than-significant level.

Level of Significance Before Mitigation: HAZ-7 would be less than significant.

Mitigation Measures

No mitigation measures are required.

4.9.1 CUMULATIVE IMPACTS

HAZ-8	The proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in less-than-significant cumulative impacts with respect to hazards and hazardous materials.

The increase in Redding's population under the proposed General Plan would result in the increased use of and potential exposure to hazardous household, commercial, and industrial materials. There would also be an increase in the population that would be exposed to potential hazards associated with aircraft operation and wildland fires. In addition, the increase in population could lead to an increase in demand for emergency services during disasters. However, most potential project-level impacts associated with hazards and hazardous materials would be reduced to a less-than-significant level due to local, regional, State, and federal regulations, such as those that control the production, use, and transportation of hazardous materials and waste and address development in areas adjacent to airports and at risk of wildfire. Since impacts associated with hazardous materials, airport hazards, and fire hazards are, by nature, are focused on specific sites or areas, impacts within Redding would not contribute to a cumulative increase in hazards in the city or the larger region. The potential for cumulative impacts associated with safety and hazards would be less than significant.

Level of Significance Before Mitigation: HAZ-8 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.9.5 REFERENCES

Airnav.com (Airnav). 2022 (accessed) December 14. Airports. http://www.airnav.com/airports/

California Department of Forestry and Fire Protection (CALFIRE). 2007, November 7. Fire Hazard Severity Zones in SRA, Shasta County. https://osfm.fire.ca.gov/media/6804/fhszs_map45.pdf

_____.2008, May 21. Very High Fire Hazard Severity Zones in LRA, Redding. https://osfm.fire.ca.gov/media/5992/redding.pdf

_____. 2022 (Accessed) December 14. FHSZ Viewer. https://egis.fire.ca.gov/FHSZ/.

California Highway Patrol (CHP). 2021, May. Explosive Materials Shipments: Routes, Safe Stopping Places, and Safe Parking Places. https://www.chp.ca.gov/CommercialVehicleSectionSite/Documents/HPH_84_3_rev0521.pdf.

Department of Toxic Substances Control (DTSC). 2022a, December 14 (Accessed). EnviroStor. https://www.envirostor.dtsc.ca.gov/public/.

_____. 2022b, December 16 (Accessed). Iron Mountain Mine (45100001). https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=45100001.

Department of Transportation (DOT). 2022a (Accessed). The National Hazardous Materials Route Registry (NHMRR). https://www.fmcsa.dot.gov/sites/fmcsa.dot.gov/files/2020-02/California0220.pdf

_____. 2022b (Accessed). Hazmat Incident Database. https://portal.phmsa.dot.gov/analytics/saw.dll?Portalpages&PortalPath=%2Fshared%2FPublic%20Website%20Pages%2F_portal%2FHazmat%20Incident%20Report%20Search.

Redding, City of. 2014, September. Emergency Operations Plan. https://www.cityofredding.org/home/showpublisheddocument/23422/637188367475300000

_____. 2015a, November. Airport Master Plan. https://www.shastacounty.gov/sites/default/files/fileattachments/planning/page/3045/draft-redding-municipal-master-plan-11-2015_x.pdf.

_____. 2022a,December 14 (Accessed). Emergency Preparedness. https://www.cityofredding.org/departments/fire-department/prevention/emergency-preparedness

_____.2022b. Clear Creek Wastewater Treatment Plant. https://www.cityofredding.org/departments/public-works/public-works-utilities/wastewater-utility/clear-creek-wwtp.

_____. 2023a, January 17. City of Redding Local Hazard Mitigation Plan 2022-2027. https://www.cityofredding.org/home/showpublisheddocument/28877/638131951485400000

_____.2023b, April 24 (Accessed). Stillwater Wastewater Treatment Plant. https://www.cityofredding.org/departments/public-works/public-works-utilities/wastewater-utility/stillwater-wwtp.

_____.2023c, January 24 (Accessed). Special Waste. https://www.cityofredding.org/departments/solid-waste/special-waste.

_____.2023d, May 3 (Accessed).Engineering Division Forms and Handouts. https://www.cityofredding.org/departments/public-works/engineering/engineering-handouts.

Redding Electric Utility (REU). 2021, December 7. Wildfire Mitigation Plan. https://www.cityofredding.org/home/showpublisheddocument/25486/637750022290300000

Shasta, County of. 1984. Shasta County Airport Land Use Commission. https://www.shastacounty.gov/planning/page/airport-land-use.

_____. 2022 (accessed) December 14. Office of Emergency Services. https://www.shastacounty.gov/sheriff/page/office-emergency-services.

_____. 2023a (accessed) January 23. Hazardous Materials Program. https://www.shastacounty.gov/environmental-health/page/hazardous-materials-program.

_____. 2023b (accessed) January 24. Business Waste Reduction and Recycling Program. Business Waste Reduction & Recycling Program | Shasta County California.

_____. 2023c (accessed) January 25. District and School Information. https://www.shastacoe.org/shasta-county-schools/pcs.

State Water Resources Control Board (SWRCB). 2022 (accessed) December 14. GeoTracker. https://geotracker.waterboards.ca.gov/.

West. 2023, March 22. Redding Regional Airport is rolling out a new logo. KRCR-TV. https://krcrtv.com/news/local/redding-regional-airport-is-rolling-out-a-new-logo.

5.10 HYDROLOGY AND WATER QUALITY

This chapter describes the regulatory framework and existing conditions in the Plan Area related to hydrology and water quality, and the potential impacts of the project on hydrology and water quality.

5.10.1 ENVIRONMENTAL SETTING

5.10.1.1 REGULATORY FRAMEWORK

This section summarizes key federal, state, regional, and local regulations and programs related to the hydrology and water quality for the proposed General Plan Update.

Federal Regulations

Clean Water Act

The federal Water Pollution Control Act (or Clean Water Act [CWA]) is the principal statute governing water quality. It establishes the basic structure for regulating discharges of pollutants into the waters of the United States and gives the EPA authority to implement pollution control programs, such as setting wastewater standards for industry. The statute's goal is to completely end all discharges and to restore, maintain, and preserve the integrity of the nation's waters. The CWA regulates direct and indirect discharge of pollutants; sets water quality standards for all contaminants in surface waters; and makes it unlawful for any person to discharge any pollutant from a point source into navigable waters unless a permit is obtained under its provisions. The CWA mandates permits for wastewater and stormwater discharges; requires states to establish site-specific water quality standards for navigable bodies of water; and regulates other activities that affect treatment plants and recognizes the need for planning to address nonpoint sources of pollution. Section 402 of the CWA requires a permit for all point source (a discernable, confined, and discrete conveyance, such as pipe, ditch, or channel) discharges of any pollutant (except dredge or fill material) into waters of the United States.

National Pollutant Discharge Elimination System

Under the National Pollutant Discharge Elimination System (NPDES) program (under Section 402 of the CWA), all facilities the discharge pollutants from any point into water of the United States must have a NPDES permit. The term "pollutant" broadly applies to any type of industrial, municipal, and agricultural waste discharged into water. Point sources can be publicly owned treatment works (POTWs), industrial facilities, and urban runoff. (The NPDES program addresses certain agricultural activities, but the majority are considered nonpoint sources and are exempt from NPDES regulation). Direct sources discharge directly to receiving waters, and indirect sources discharges to POTWs, which in turn discharge to receiving waters. Under the national program, NPDES permits are issued only for direct, point-source discharges. The National Pretreatment Program addresses industrial and commercial indirect discharges.

Municipal sources are POTWs that receive primarily domestic sewage from residential and commercial customers. Specific NPDES program areas applicable to municipal sources are the National Pretreatment Program, the Municipal Sewage Sludge Program, Combined Sewer Overflows (CSOs), and the Municipal Storm Water Program. Nonmunicipal sources industrial and commercial facilities. Specific NPDES program areas applicable to these industrial/commercial sources are: Process Wastewater Discharges, Non-Process Wastewater Discharges, and the Industrial Storm Water Program. NPDES issues two basic permit types: individual and general. Also, the EPA has recently focused on integrating the NPDES program further into watershed planning and permitting.

The NPDES has a variety of measures designed to minimize and reduce pollutant discharges. All counties with storm drain systems that serve a population of 50,000 or more, as well as construction sites one acre or more in size, must file for and obtain an NPDES permit. Another measure for minimizing and reducing pollutant discharges to a publicly owned conveyance or system of conveyances (including roadways, catch basins, curbs, gutters, ditches, man-made channels and storm drains, designed or used for collecting and conveying stormwater) is the EPA's Storm Water Phase II Final Rule. The Phase II Final Rule requires an operator (such as a City) of a regulated small municipal separate storm sewer system (MS4) to develop, implement, and enforce a program (e.g., Best Management Practices [BMPs], ordinances, or other regulatory mechanisms) to reduce pollutants in post-construction runoff to the City's storm drain system from new development and redevelopment projects that result in the land disturbance of greater than or equal to one acre.

Safe Drinking Water Act

The federal Safe Drinking Water Act (SDWA) regulates drinking water quality nationwide and gives the U.S. Environmental Protection Agency (EPA) the authority to set drinking water standards, such as the National Primary Drinking Water regulations (NPDWRs or primary standards). The NPDWRs protect drinking water by limiting the levels of specific contaminants that can adversely affect public health. All public water systems that provide service to 25 or more individuals must meet these standards. Water purveyors must monitor for contaminants on fixed schedules and report to the EPA when a maximum contaminant level (MCL) is exceeded. MCL is the maximum permissible level of a contaminant in water that is delivered to any use of a public water system. Contaminants include organic and inorganic chemicals (e.g., minerals), substances that are known to cause cancer, radionuclides (e.g. uranium and radon), and microbial contaminants (e.g., coliform and E. coli). The MCL list typically changes every three years as the EPA adds new contaminants or revises MCLs. The California Department of Public Health's Division of Drinking Water and Environmental Management is responsible for implementation of the SDWA in California.

Federal Urban Flooding Awareness Act

In recent years, communities have become concerned with localized flooding. In 2015, Congress passed the Urban Flooding Awareness Act of 2015. Under this bill, the National Academy of Sciences will conduct a study on urban flooding. It defines "urban flooding" as the inundation of property in a built environment, particularly in more densely populated areas, caused by rain falling on increased amounts of

impervious surface and overwhelming the capacity of drainage systems. The bill directs the National Academy of Sciences to evaluate the latest research, laws, regulations, policies, best practices, procedures, and institutional knowledge regarding urban flooding. The findings from this assessment will direct future federal policies on identifying, preventing, and mitigating urban flooding.

National Flood Insurance Program

The National Flood Insurance Act of 1968 and the Flood Disaster Protection of 1973 mandate the Federal Emergency Management Agency (FEMA) to evaluate flood hazards. FEMA provides Flood Insurance Rate Maps (FIRMs) for local and regional planners to promote sound land use and floodplain development, identifying potential flood areas based on the current conditions. To delineate a FIRM, FEMA conducts engineering studies referred to as Flood Insurance Studies (FISs). Using information gathered in these studies, FEMA engineers and cartographers delineate Special Flood Hazard Areas (SFHAs) on FIRMs.

The Flood Disaster Protection Act (FDPA) requires owners of all structures in identified SFHAs 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. Community members within designated areas are able to participate in the National Flood Insurance Program (NFIP) afforded by FEMA. The NFIP is required to offer federally subsidized flood insurance to property owners in those communities that adopt and enforce floodplain management ordinances that meet minimum criteria established by FEMA. The National Flood Insurance Reform Act of 1994 further strengthened the NFIP by providing a grant program for state and community flood mitigation projects. The act also established the Community Rating System (CRS), a system for crediting communities that implement measures to protect the natural and beneficial functions of their flood plains, as well as managing erosion hazards.

State Regulations

Porter-Cologne Water Quality Act

The Porter-Cologne Water Quality Act (Water Code sections 13000 et seq.) is the basic water quality control law for California. Under this Act, the State Water Resources Control Board (SWRCB) has ultimate control over state water rights and water quality policy. In California, the EPA has delegated authority to issue NPDES permits to the SWRCB. The SWRCB, through its nine RWQCBs, carries out the regulation, protection, and administration of water quality in each region. Each regional board is required to adopt a water quality control plan, or basin plan, that recognizes and reflects the regional differences in existing water quality, the beneficial uses of the region's ground and surface water, and local water-quality conditions and problems. The City of Redding is within the Sacramento River Basin and is under the jurisdiction of the Central Valley RWQCB (Region 5). The Central Valley RWQCB Region is divided into three basins—the Sacramento River Basin, San Joaquin River Basin, and Tulare Lake Basin.

The Central Valley RWQCB monitors surface water quality through implementation of the water quality control plan for the Sacramento and San Joaquin River Basins (Basin Plan) and designates beneficial uses for surface water bodies and groundwater in the basins. The Basin Plan was last revised in 2018 and describes the water quality that must be maintained to support the designated beneficial uses. It provides programs, projects, and other actions necessary to achieve the standards it established. The Basin Plan also contains water quality criteria for groundwater.

Statewide General Construction Permit

Construction projects of 1 acre or more are regulated under the Construction General Permit, Order No. 2012-0006-DWQ, issued by the SWRCB. Under the terms of the permit, applicants must file permit registration documents with the SWRCB prior to the start of construction, including a Notice of Intent, risk assessment, site map, Storm Water Pollution Prevention Plan (SWPPP), annual fee, and signed certification statement.

The SWPPP must demonstrate conformance with applicable BMPs, including a site map that shows the construction site perimeter, existing and proposed buildings, lots, roadways, stormwater collection and discharge points, general topography both before and after construction, and drainage patterns across the project location. The SWPPP must list BMPs that would be implemented to prevent soil erosion and discharge of other construction-related pollutants that could contaminate nearby water resources. Additionally, the SWPPP must contain a visual monitoring program, a chemical monitoring program for nonvisible pollutants if there is a failure of the BMPs, and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment. Categories of BMPs used in SWPPPs are described in Table 5.10-1, *Construction BMPs*. Some sites may require implementation of a Rain Event Action Plan. The Construction General Permit also requires applicants to comply with post-construction runoff reduction requirements.

Storm Water Pollution Prevention Plans

Pursuant to the CWA, in 2001, the SWRCB issued a statewide general NPDES Permit for storm water discharges from construction sites (NPDES No. CAS000002). Under this Statewide General Construction Activity permit, discharges of storm water from construction sites with a disturbed area of one or more acres are required to either obtain individual NPDES permits for storm water discharges or to be covered by the General Permit. Coverage by the General Permit is accomplished by completing and filing a Notice of Intent with the SWRCB and developing and implementing a Storm Water Pollution Prevention Plan (SWPPP). Each applicant under the General Construction Activity Permit must ensure that a SWPPP is prepared prior to grading and is implemented during construction. The SWPPP must list BMPs implemented on the construction site to protect storm water runoff, and must contain a visual monitoring program; a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs; and a monitoring plan if the site discharges directly to a water body listed on the state's 303(d) list of impaired waters.

Sustainable Groundwater Management ActSection 10720.1 of the Sustainable Groundwater Management Act (SGMA), effective January 1, 2015, established a framework of priorities and requirements to facilitate sustainable groundwater management throughout California. The legislative intent of the SGMA is for groundwater to be managed in California's groundwater basins by local public agencies and newly-formed Groundwater Sustainability Agencies (GSAs). Specifically, the SGMA establishes a definition of "sustainable groundwater management," requires that a Groundwater Sustainability Plan be adopted for the most important groundwater basins in California, establishes a timetable for adoption of Groundwater Sustainability Plans (GSPs), empowers local agencies to manage basins sustainably, establishes basic requirements for Groundwater Sustainability Plans, and provides for a limited State role.

Local and Regional Regulations

Enterprise Anderson Groundwater Sustainability Agency Groundwater Sustainability Plans

As described in below under Section 5.10.1.2, *Existing Conditions*, Groundwater, the City of Redding encompasses the Enterprise, Anderson, and Millville Subbasins of the Redding Groundwater Basin. Pursuant to the SGMA, the Enterprise Anderson Groundwater Sustainability Agency (EAGSA) was formed to develop and implement the GSPs for the two subbasins designated as medium priority in Shasta County (the Enterprise and Anderson Subbasins), discussed below. The EAGSA consists of the City of Anderson, Shasta County, Clear Creek Community Services District, Bella Vista Water District (BVWD), Anderson-Cottonwood Irrigation District, and the City of Redding. The EAGSA is governed by a Board of Directors, composed of elected officials representing each agency.

Enterprise Subbasin Groundwater Sustainability Plan

The Enterprise Subbasin GSP was last updated and released for public review in January of 2022. This GSP covers 61,300 acres of the Enterprise Subbasin. The GSP describes the current groundwater conditions and hydrogeologic conceptual model, establishes a water budget, outlines local sustainable management criteria, and describes projects and programs for maintaining sustainability through the GSP planning and implementation period (EAGSA 2022a). As a result of this analysis, the GSP concludes that the Enterprise Subbasin is currently being sustainably managed; therefore, there is not a current need for projects and management actions to bring the subbasins to a sustainable condition. As noted in the Department of Water Resources' (DWR) SGMA Portal, the Enterprise GSP is pending review by the DWR (DWR 2023).

Anderson Subbasin Groundwater Sustainability Plan

The Anderson Subbasin GSP was last updated and released for public review in January of 2022. This GSP covers 98,700 acres of the Anderson Subbasin. Like the Enterprise GSP, this GSP describes the current groundwater conditions and hydrogeologic conceptual model, establishes a water budget, outlines local sustainable management criteria, and describes projects and management actions for maintaining sustainability through the GSP planning and implementation period (EAGSA 2022b). This GSP also

concludes that the Subbasin is being sustainably managed. As noted in the DWR SGMA Portal, the Anderson GSP is pending review by the DWR (DWR 2023).

2000-2023 Redding General Plan

The following policies are included in the existing General Plan regarding hydrology and water quality. The numbering is from the existing General Plan and therefore may not be consecutive.

Community Development and Design Element

- **Goal CDD2:** Ensure the ability of the city, school districts, and other public service providers to efficiently provide expected and necessary public facilities to their constituents.
    - **Policy CDD2A:** Require construction of private development projects to be coordinated with the timing and location of public services. Ensure through a combination of development fees and other appropriate funding mechanisms that development pays its fair share of the costs of constructing/providing new facilities and services as determined by the direct impacts that such development has on these essential services.
    - **Policy CDD2C:** Evaluate public-service impacts as part of environmental review for proposed development projects and require applicants to obtain "will-serve" letters from service providers prior to receiving approval of a final subdivision map or, in the absence of the need for a final subdivision map, prior to receiving approval of any required building permits.
    - **Policy CDD2E:** Maintain adequate capacity for urban growth by continuously monitoring and, when required, increasing the capacity of the City's water, sewer, storm drainage, electric, and solid waste disposal systems.

Health and Safety Element

- **Goal HS2:** Protect the lives and property of residents and visitors from flood hazards.
    - **Policy HS2D:** Design both new development and redevelopment projects to minimize hazards associated with flooding.
    - **Policy HS2F:** Continue to utilize the Storm Drain Utility and Storm Drainage Construction Tax, or similar measures, as funding mechanisms for necessary drainage improvements throughout the City.
    - **Policy HS2G:** Establish a regional stormwater detention system at appropriate locations in area watersheds in cooperation with adjacent jurisdictions. Stormwater basins should be designed to allow passive or active recreational uses.

- Policy HS2H: Require new development to demonstrate that existing and/or planned (on- or off-site) drainage facilities are sized to accommodate project storm runoff and to prevent off-site increase peak runoff rates and flood elevations.

Natural Resources Element

- Goal NR1: Minimize soil erosion and sedimentation problems resulting from development activities; improve the quality of stormwater runoff.
  - Policy NR1A: Establish a process for the development, review, and approval of erosion- and sedimentation-control plans of single-family residential construction and similar small projects.
  - Policy NR1B: Require development applicants to submit and receive Public Works Department approval for erosion- and sediment-control plans prior to undertaking grading activities.
  - Policy NR1C: Minimize soil erosion and sedimentation created during and after construction activities to the fullest extent practicable, using Best Management Practices (BMPs).
  - Policy NR1D: Make project monitoring and enforcement activities a priority to ensure that erosion- control measures are in place prior to the start of the rainy season and function properly and effectively:
    - Installed properly.
    - In place prior to the start of the rainy season.
    - Functional and effective.
  - Policy NR1E: Aggressively pursue immediate remediation when erosion damage is discovered and/or initial control measures fail.
  - Policy NR1F: Establish and levy fines for failure to comply with the requirements of the Grading Ordinance and/or an approved erosion- and sediment-control plan.
  - Policy NR1G: Support and/or jointly sponsor erosion- and sedimentation-control training and education activities in conjunction with the development community.
  - Policy NR1H: Ensure that employees responsible for monitoring and enforcing the City's Grading Ordinance receive adequate training regarding erosion- and sediment-control practices.
  - Policy NR1I: Work with Shasta County and other regional, state, and federal agencies to reduce the amount of toxic chemicals and other agents or pollutants entering the surface water system from agriculture, golf course, and urban runoff.
  - Policy NR1J: Encourage neighboring jurisdictions to adopt and enforce consistent erosion- and sediment-control measures.

- **Goal NR3:** Preserve and protect the quantity and quality of groundwater resources within the planning area.
    - **Policy NR3A:** Provide maximum groundwater-recharge opportunities by maintaining the natural condition of waterways and floodplains to the extent feasible, given flood-control requirements.
    - **Policy NR3B:** Comply with the Regional Water Quality Control Board's regulations and standards to maintain and improve groundwater quality in the Planning Area.
    - **Policy NR3C:** Support the preparation of a groundwater management plan for the Redding Groundwater Basin that will address long- term sustainability of the resource.
    - **Policy NR3D:** Support efforts to prevent exportation of groundwater to other areas of the state and to retain local control over the resource.
    - **Policy NR3E:** Work with appropriate state, federal, and local agencies to protect, improve, and enhance groundwater quality in the region.
- **Goal NR4:** Prevent and remedy surface-water, groundwater, and soil contamination.
    - **Policy NR4A:** Discourage the establishment of any new septic systems, except in areas where residential densities are low (1–5 acres per unit and larger) and soils are suitable for septic system use.
    - **Policy NR4B:** Continue to accept, recycle, and/or properly dispose of household hazardous waste through ongoing operation of the City's Household Hazardous Waste Collection Program.
    - **Policy NR4C:** Work with appropriate local, state, and federal agencies to ensure that those responsible for soil, surface-water, and/or groundwater contamination are required to initiate, monitor, and complete full remediation activities.
    - **Policy NR4D:** Work with Shasta County and other appropriate agencies to educate the public and business owners regarding proper handling and disposal of hazardous materials and household hazardous waste.
    - **Policy NR4E:** Establish and enforce penalties for illegal dumping of both hazardous and nonhazardous materials.

City of Redding Stormwater Program

The City of Redding Public Works Department Stormwater Program administers requirements of the MS4 General Permit in the City. The City issued its Post-Construction Standards Plan in May 2016 (Redding 2016). Table 5.10-1, *Construction BMPs*, shows the recommended Best Management Practices for construction with regard to stormwater quality.

TABLE 5.10-1 CONSTRUCTION BMPS

Category	Purpose	Examples
Erosion Controls and Wind Erosion Controls	Cover and/or bind soil surface, to prevent soil particles from being detached and transported by water or wind.	Mulch, geotextiles, mats, hydroseeding, earth dikes, swales.
Sediment Controls	Filter out soil particles that have been detached and transported in water.	Barriers such as straw bales, sandbags, fiber rolls, and gravel bag berms; desilting basin; cleaning measures such as street sweeping.
Tracking Controls	Minimize the tracking of soil off-site by vehicles.	Stabilized construction roadways and construction entrances/exits; entrance/outlet tire wash.
Nonstorm Water Management Controls	Prohibit discharge of materials other than stormwater, such as discharges from the cleaning, maintenance, and fueling of vehicles and equipment. Conduct various construction operations, including paving, grinding, and concrete curing and finishing, in ways that minimize non-stormwater discharges and contamination of any such discharges.	BMPs specifying methods for: paving and grinding operations; cleaning, fueling, and maintenance of vehicles and equipment; concrete curing; concrete finishing.
Waste Management and Controls (i.e. good-housekeeping practices)	Management of materials and wastes to avoid contamination of stormwater.	Spill prevention and control, stockpile management, and management of solid wastes and hazardous wastes.

Source: California Stormwater Quality Association 2003

City of Redding Municipal Code

Chapter 16.12, Clearing, Grading, Fills, and Excavation

The Redding Municipal Code, Chapter 16.12, Clearing, Grading, Fills and Excavation, addresses requirements associated with clearing, grading, fills, and excavation. The ordinance sets rules and regulations to control clearing and grading and to prevent erosion and other environmental damage. It also establishes administrative procedures for the issuance and enforcement of permits, and provides for the approval of plans and inspection of grading and erosion-control implementation measures.

Chapter 14.19, Stormwater Quality Management and Discharge Control

The Redding Municipal Code, Chapter 14.19, Stormwater Quality Management and Discharge Control, addresses the requirements of the Clean Water Act and Porter-Cologne Water Quality Control Act. The ordinance aims to protect and promote the health, safety and general welfare of the community by controlling non-stormwater discharges to the city's stormwater conveyance system and by reducing pollutants in stormwater discharges to the maximum extent practicable. This chapter is also intended to assist in the protection and enhancement of water quality of watercourses and water bodies.

Chapter 18.51, "FP" Floodplain Overlay District

The Redding Municipal Code, Chapter 18.51, "FP" Floodplain Overlay District, addresses the requirements of FEMA to participate in the National Flood Insurance Program. This ordinance enforces floodplain-management measures to reduce the risk of flood losses. The regulations of the ordinance provide seven levels of protection within and along waterways of the floodplain combining district by:

1. generally prohibiting development within the floodway,
2. allowing only limited use and development in the flood fringe,
3. regulating uses and development on properties contiguous to the flood fringe and outside of the floodplain, which do not meet the minimum protection standards,
4. reviewing proposed development located in designated scenic corridors,
5. reviewing all development permits to determine that the permit requirements of this chapter have been satisfied,
6. reviewing all permits to determine that the site is reasonably safe from flooding, and
7. reviewing all development permits to determine if the proposed development adversely affects the flood-carrying capacity of the area of special flood hazard.

Stormwater Management Program

The Storm Water Management Program ensures that the City of Redding adheres to all California State requirements that protect the quality of the watershed. The program provides support for compliance with the Construction General Permit (CGP), Industrial General Permit (IGP), and the Municipal Separate Storm Sewer System Phase II General Permit [MS4] Phase II General Permit). The Department of Public Works is responsible for planning, inspection, enforcement, and permit clearances for construction projects in the city. The Department of Public Works is responsible for the city's stormwater drainage system.

City of Redding Construction Standards

The City of Redding has adopted a set of construction standards that are applied to the design of subdivisions and other development projects, streets, and utilities. The construction standards provide requirements for the design of storm drainage facilities, including hydraulic criteria and typical details for structures.

City of Redding Council Policy 1806

Council Policy 1806, Floodplain Development and Storm Water Detention, contains stormwater policies related to detention and floodplain development for consideration by City departments when considering subdivisions, use permits, building permits, rezonings, General Plan amendments, City construction

projects, grading permit applications, and floodplain encroachments. Council Policy 1806 requires project design measures to prevent increases in stormwater runoff as a result of project construction and/or appropriate mitigation measures to lessen flooding elsewhere in the drainage basin. This requirement can be met through the use of detention or retention facilities on- or off-site or other measures as approved by the Planning Commission and the City Engineer.

5.10.1.2 EXISTING CONDITIONS

Surface Water and Drainage

Regional Drainage

Redding is in the Lower Sacramento Watershed, which spans about 20,125 square miles, including the Sacramento Valley, the northern Sierra Nevada, the south end of the Cascade Range, and some of the eastern slopes of the northern Coast Ranges (see Figure 5.10-1, *Lower Sacramento Watershed and Clear Creek-Sacramento River Subbasin*) (USGS 2022). The Lower Sacramento watershed is divided into several subbasins. The city is in the Clear Creek-Sacramento River Subbasin, which spans about 686 square miles—almost entirely in Shasta County—including the north end of the Sacramento Valley and extending northwest into the Trinity Mountains and east into the Cascade Range (see Figure 5.10-1) (CDFW 2022). The Sacramento River passes north-south through the central part of the watershed.

The City of Redding and surroundings are set on plains in the north end of the Sacramento Valley and dissected by numerous rivers and streams emerging from the Trinity Mountains to the west and the Cascade Range to the north and east. The two nearest streams to the Planning Area—the Sacramento River and Churn Creek about 0.5-mile to the east—both originate in the Cascade Range to the north.

Major dams in the region include Shasta Dam, on the Sacramento River about 7 miles north of the city, and Whiskeytown Dam, in Clear Creek about 5 miles northwest of the city. Shasta Dam provides water storage, flood control, and hydroelectric power and is a key facility for the State (NSVIRWMG 2014a).

Surface Water Quality

The segment of the Sacramento River from Keswick Dam to Cottonwood Creek is listed on the Clean Water Act Section 303(d) List of Water-Quality Limited Segments for contamination with unknown toxicity. The affected segment extends through the City of Redding and south to east of the Community of Cottonwood. The segment of Clear Creek below Whiskeytown Lake to the convergence with the Sacramento River is listed on the Clean Water Act Section 303(d) List of Water-Quality Limited Segments for contamination with mercury. No other water bodies near Redding are listed on the Section 303(d) List (SWRCB 2022).

Surface Water Uses

Surface water from the Sacramento River and Whiskeytown Lake comprised about 74 percent of City of Redding water supplies in 2020, and the City forecasts that surface water will comprise about 61 percent of water supplies in 2045 (Redding 2021). Surface water comprises most agricultural water supply in the northern and central Sacramento Valley, where most water demands are for agricultural and environmental uses (NSVIRWMG 2014b)[1].

Storm Drain System

The City's storm drainage system is comprised of multiple networks of inlets, pipes, and basins that flow to the Sacramento River, Clear Creek, Churn Creek, or to terminal (retention) basins that percolate stormwater into the ground. The City's storm drain system includes over 18 miles of open drainage channels and ditches, 5,200 catch basins and inlets, 129 miles of storm drain pipes and 570 curb miles of streetside gutters (Redding 2003; 2019).

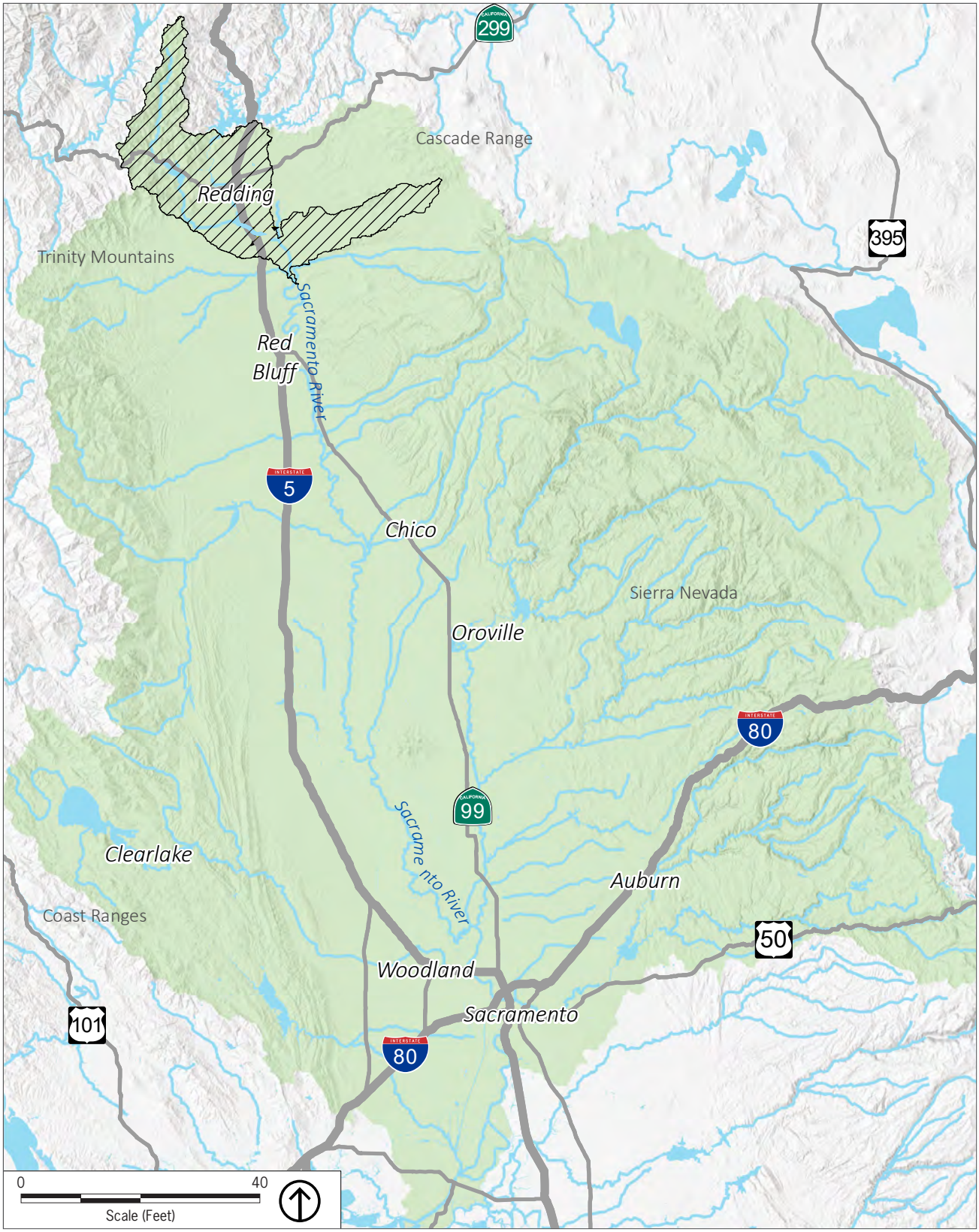
Groundwater

Redding encompasses the Enterprise, Anderson, and Millville Subbasins of the Redding Groundwater Basin. The Redding Groundwater Basin underlies about 544 square miles in the north end of the Sacramento Valley; the Anderson Subbasin is about 158 square miles in the western portion of the Redding Basin, the Enterprise Subbasin is about 95 square miles in the northeast portion of the Redding Basin, and the Millville Subbasin is about 110 square miles in the eastern portion of the Redding Basin (see Figure 5.10-2, *Redding Groundwater Basin and Subbasins*) (CDFW 2022).

Groundwater Quality

Water from the Redding Groundwater Basin is generally very high quality (USGS 1983). However, two wells that have been removed from regular service have shown arsenic levels above the primary contaminant level (MCL), the highest concentration level allowed in drinking water. Manganese levels are also a challenge for some of the wells located in the Enterprise SubBasin. The challenge is currently being addressed by adjusting pumping rates to achieve blending between wells to provide water below the secondary MCL.

[1] The northern and central Sacramento Valley region referenced, totaling about 9,441 square miles, consists of six counties: part of Shasta County; most of Butte, Glenn, and Colusa counties; and all of Tehama and Sutter counties.

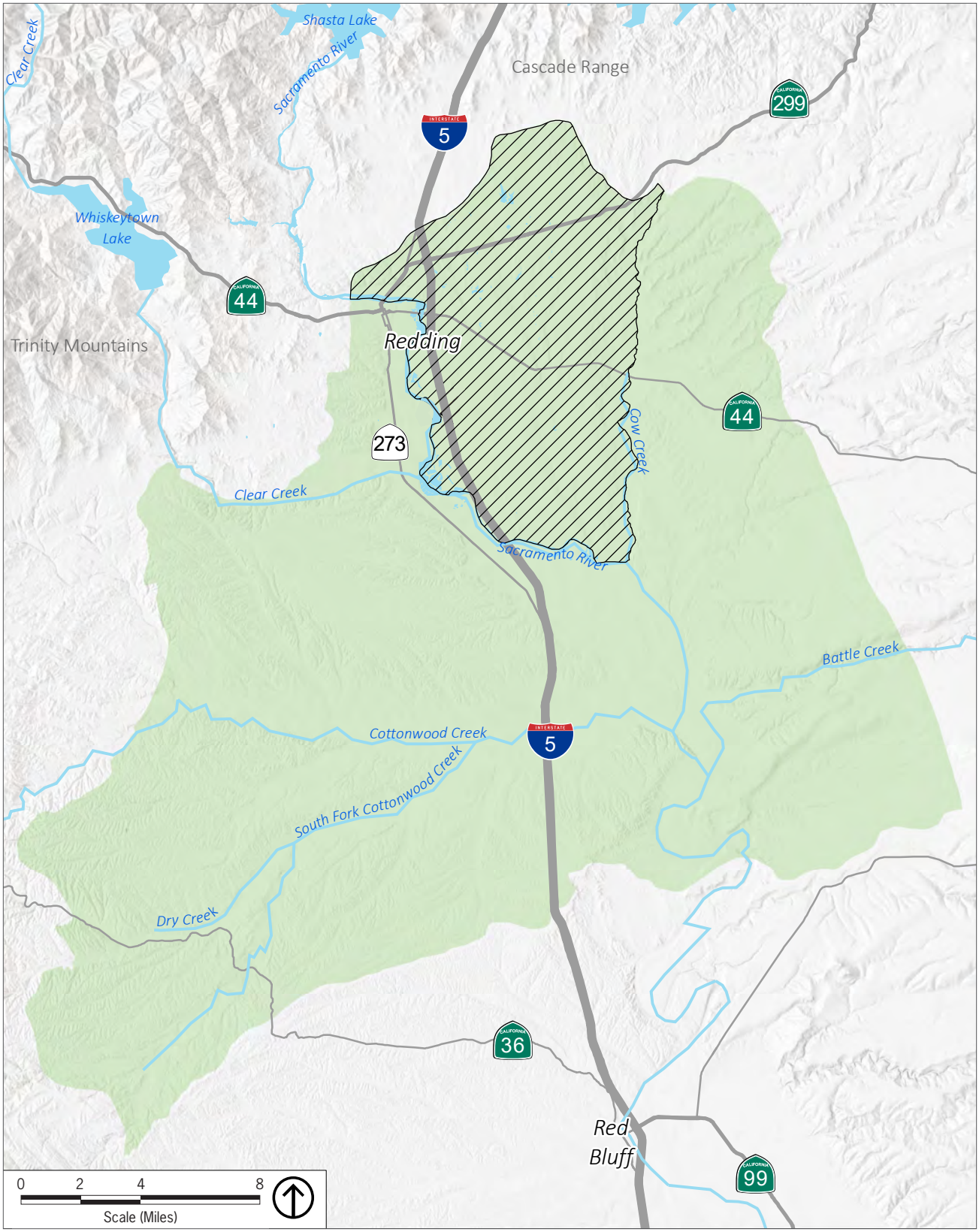


Source: City of Redding, 2016; PlaceWorks, 2017.

Clear Creek-Sacramento River Subbasin Lower Sacramento Watershed

Figure 5.10-1

Lower Sacramento Watershed and Clear Creek-Sacramento River Subbasin



Source: City of Redding, 2016; PlaceWorks, 2017.

Enterprise Subbasin Redding Groundwater Basin

Figure 5.10-2
Redding Groundwater Basin and Subbasins

Groundwater Uses

Groundwater made up 23 percent of City of Redding water supplies in 2020 and is forecast to be about 30 percent of supplies in 2045 (Redding 2021). Groundwater makes up the entire water supply for most cities and towns in the northern and central Sacramento Valley (NSVIRWMG 2014b).

Flood Control

Flood Zones

Redding is within the 100-year and 500-year flood zones as shown on Figure 5.10-3, *Flood Zones Map* (FEMA 2023). Base Floodplains area covered by a base flood which is generally defined by FEMA as Zone A, AO, A1-30 and AE on the flood insurance rate map. The City of Redding also uses a City-wide Storm Drain Master Plan by Montgomery-Watson Engineers dated October 1993 that is shown on Figure 5.10-3.

Dam Inundation

Redding is within the dam inundation areas for Keswick Dam, Shasta Dam and Whiskeytown Dam (CalOES 2023).

Levees

Two levees are located within the southern portion of the city (USACE 2022). The largest levee is located along the west bank of the Sacramento River, just east of the Clear Creek Wastewater Treatment Plant, and the other along Olney Creek north of Girvan Road.

Seiche

A seiche is a surface wave created when an inland water body is shaken, usually by an earthquake. Shasta Lake or Whiskeytown Lake could pose a significant flood hazard to the city due to a seiche.

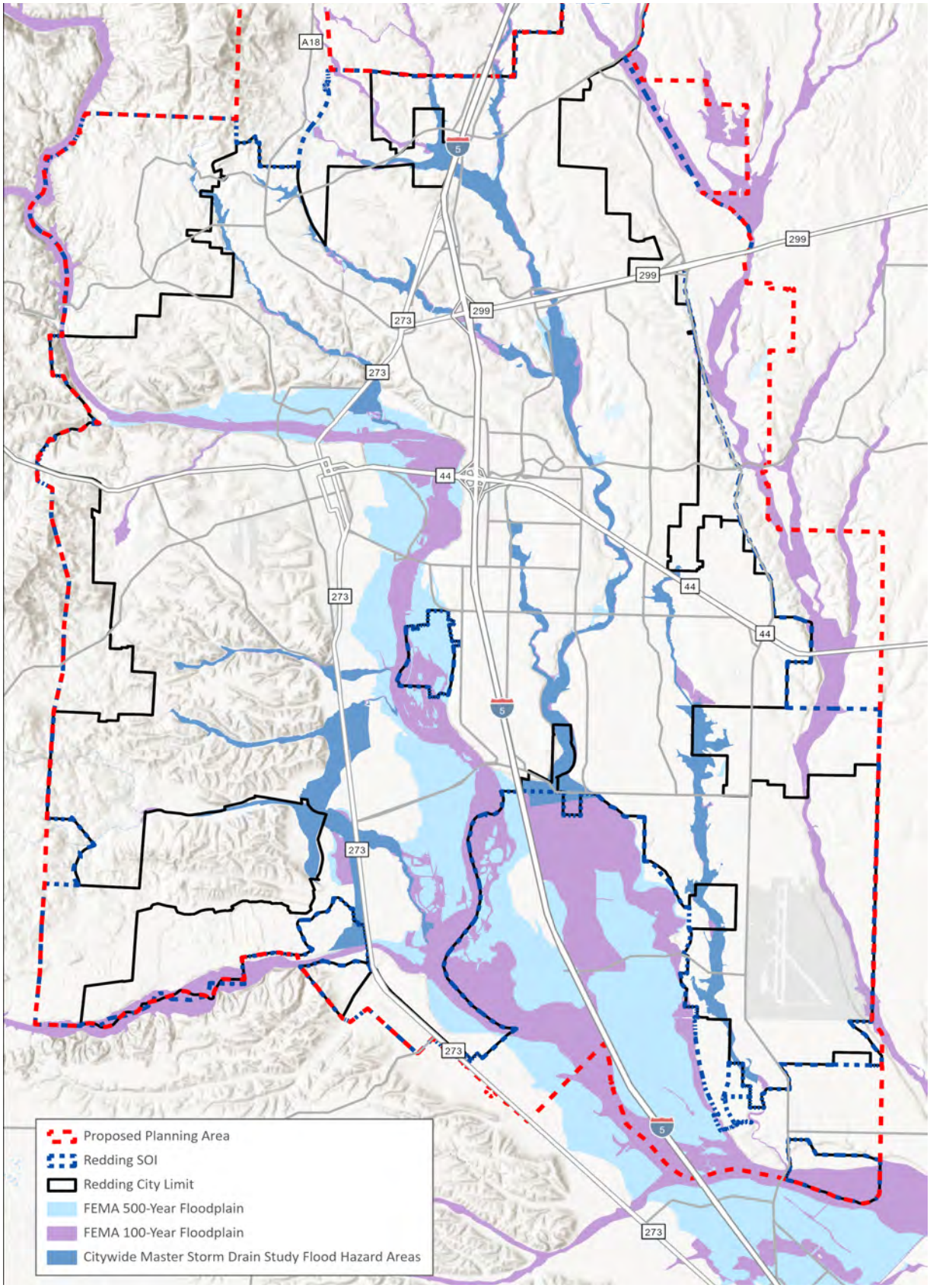
Tsunami

A tsunami is an ocean wave caused by a sudden displacement of the ocean floor, most often due to earthquakes. Redding is about 90 miles inland from the Pacific Ocean. There is no tsunami flood hazard in the city.

Mudflow

A mudflow is a landslide composed of saturated rock debris and soil with a consistency of wet cement. Most of the city is relatively flat to gently sloping. The western portion of the city contains slopes that may be susceptible to mudflows.

This page intentionally left blank.



Source: Montgomery-Watson 1993; FEMA National Flood Hazard Layer (Provided by City of Redding GIS 2023)

0 2
Scale (Miles)

PLACEWORKS

Figure 5.10-3
Flood Zones Map

This page intentionally left blank.

5.10.2 THRESHOLDS OF SIGNIFICANCE

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

HYD-1 Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.

HYD-2 Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.

HYD-3 Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

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

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

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

iv) Impede or redirect flood flows.

HYD-4 In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.

HYD-5 Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

HYD-6 In combination with past, present, and reasonably foreseeable projects, result in cumulative impacts with respect to hydrology and water quality.

5.10.3 PROPOSED GENERAL PLAN POLICIES

The following are relevant policies of the Redding General Plan Update, which may contribute to a reduction in hydrology and water quality impacts as a result of implementation of the proposed project.

Community Development and Design Element

- Policy CDD5A: Consider the development of a stormwater detention master plan and development standards that would:

- Identify adequate locations for feasible regional and neighborhood detention and related facilities, which also may consider the use of parks and public right-of-way for stormwater detention.
- Ensure that public facilities and infrastructure are designed pursuant to approved State regulatory requirements.
- Establish design and construction standards, landscape, and maintenance guidelines.
- Identify opportunities for recreation as a combined use with detention facilities.
- Facilitate groundwater recharge.

Public Facilities and Services Element

- Policy PF8A: Adhere to the following thresholds for stormwater drainage facilities to the extent feasible:
  - Design drainage facilities to convey a 100-year storm.
  - Until adequate stormwater facilities are in place, utilize a policy of "no net increase in runoff" for development projects in all drainage basins.
- Policy PF8B: Work toward constructing stormwater detention/retention basins at strategic locations to minimize current flooding risk. Select and pursue the acquisition of sites considered appropriate for such facilities as funding permits
- Policy PF8C: Encourage Shasta County and the City of Shasta Lake to participate in appropriate City stormwater systems that may be available and/or participate in the development of a system of regional detention facilities that will complement the City's system.
- Policy PF8D: Encourage project designs that minimize drainage concentrations and coverage by impermeable surfaces.
- Policy PF8E: As resources allow, maintain all drainage facilities, including detention basins and both natural and manmade channels, to ensure that their full carrying capacity is not impaired.
- Policy PF8F: Encourage the use of green infrastructure design and Low Impact Development techniques for stormwater facilities.

Public Safety Element

- Policy PS2A: Continue to participate in the National Flood Insurance Program to ensure the availability of federally sponsored floodplain insurance for City residents.
- Policy PS2B: Continue efforts to reduce flood insurance premiums for City residents by restricting floodplain development and participating in the federal Community Rating Service Program.

- Policy PS2C: Consider the update of the Community Development and Design Element and the General Plan Diagram to reflect the current floodplain mapping data provided by FEMA and local studies such as the City's Montgomery Watson study. As funding is available, update these local studies to ensure that they reflect the best available information. Make maps available and accessible showing updated flood projections from a 100-year storm event; update the maps as new information is available.
- Policy PS2D: Work with local, regional, State and Federal agencies to maintain an adequate information base, prepare risk assessments, identify strategies, and seek appropriate funding for mitigation and flood protection.
- Policy PS2E: Strive to preserve the river and creek corridors, and strictly limit development in areas subject to flooding from a 100-year storm event. Allow minor encroachments into floodplains only if it can be demonstrated that such encroachments will not impact other properties or significantly contribute to a cumulative effect of other encroachments.
- Policy PS2F: Continue to utilize the Storm Drain Utility or similar measures, as funding mechanisms for necessary drainage improvements throughout the City.
- Policy PS2G: Continue to require that individual development projects mitigate their stormwater impacts in accordance with City Council Policy 1806 (Floodplain Development and Stormwater Detention) and/or other policy or regulations that the City may establish for this purpose.
- Policy PS2H: Continue to require new development and redevelopment projects to minimize hazards of flooding and demonstrate that existing and/or planned (on- or offsite) drainage facilities are sized to accommodate project storm runoff and to prevent off-site increase in peak runoff rates and flood elevations.
- Policy PS2I: Require critical public facilities, such as hospitals, emergency shelters, emergency command centers, fire and police stations, and similar facilities be designed to mitigate potential flood risk to ensure operation during a flood event, to the extent feasible.
- Policy PS2J: Adhere to the requirements of the City's National Pollutant Discharge Elimination System (NPDES) MS4 Permit, including, but not limited to the periodic inspection of stormwater channels for vegetation build-up or encroachment, trash and debris, silt and gravel build-up, erosion or any other obstruction to reduce the risk of localized flooding. Alleviate pre-existing flooding conditions that are a result of past practices and regulations.

Natural Resources Element

- Policy NR1B: Continue to improve compliance with the California Regional Water Quality Control Board's regulations and standards and work with local, state, and federal agencies and private watershed organizations to maintain, protect, and improve water quality and quantity.

- **Policy NR1C:** Utilize the stormwater protection measures of the City's National Pollution Discharge Elimination Systems (NPDES) permit and the provisions of the City's grading ordinance to control sources of pollutants and improve and maintain urban runoff water quality.
- **Policy NR1I:** Work with Shasta County and other regional, state, and federal agencies to reduce the amount of toxic chemicals and other agents or pollutants entering the surface water system from agriculture, entertainment facilities such as golf course, and urban runoff.
- **Policy NR3A:** Preserve and strive to avoid impacts to groundwater recharge areas through open space preservation, runoff management, stream setbacks, clustering of development, and Low Impact Development (LID) treatment where appropriate.
- **Policy NR3B:** Work with local, state, regional, and tribal agencies to:
    - identify and map groundwater recharge areas within the Sphere of Influence and protect, improve, and enhance groundwater quality of the region, and
    - encourage and support those responsible for soil, surface-water, and/or groundwater contamination, initiate, monitor, and complete full remediation activities.
- **Policy NR3C:** Continue to support efforts to periodically review and maintain Redding Basin Water Resources Management Plan that addresses long term sustainability of this resource.

5.10.4 IMPACT DISCUSSION

HYD-1	The proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. [HYD-1]

The intensification of land uses in the city could degrade water quality through increases in non-point-source pollution from new impervious surfaces, construction activity that increases erosion and sediment loads in downstream receiving waters, increased pollutants from additional traffic, and increased use of chemicals and other pollutants from various land uses allowed by the General Plan Update. However, new development under the General Plan Update would be subject to several state and local regulations that would ensure that water quality standards are not violated. For example, as described in Section 5.10.1.1, *Regulatory Framework*, the State General Construction Activity Storm Water Permit (CGP), which applies to construction activity that disturbs one acre or more, requires the preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP) that identifies Best Management Practices (BMPs) to minimize pollutants from discharging from the construction site to the maximum extent practicable. The CGP also prohibits the discharge of materials other than storm water and authorized non-storm water discharges (such as irrigation and pipe flushing and testing).

Additionally, the SWRCB has adopted a statewide general permit (Water Quality Order No. 2013-0001-DWQ) for small MS4s covered under the CWA to efficiently regulate numerous storm water discharges under a single permit. Permitees must meet the requirements in Provision D of the General Permit which require the development and implementation of a Storm Water Management Plan (SWMP) with the goal of reducing the discharge of pollutants to the maximum extent practicable.

Furthermore, all storm drain facilities for future development projects would be designed and constructed consistent with the intent of applicable City of Redding Construction Standards outlined in Chapter 16.12 of the Redding Municipal Code, the City of Redding Stormwater Management Program and the City of Redding MS4 General Permit from the RWQCB. These plans and standards incorporate strategies to minimize the storm water pollution. Potential water quality (non-point source pollutants) impacts would be reduced by the implementation of the following 2023-2045 General Plan policies:

- Policy PF8F*:* Encourage the use of green infrastructure design and Low Impact Development techniques for stormwater facilities.

- Policy NR1I: Work with Shasta County and other regional, state, and federal agencies to reduce the amount of toxic chemicals and other agents or pollutants entering the surface water system from agriculture, entertainment facilities such as golf course, and urban runoff.

- Policy NR1B: Continue to improve compliance with the California Regional Water Quality Control Board's regulations and standards and work with local, state, and federal agencies and private watershed organizations to maintain, protect, and improve water quality and quantity.

- Policy NR1C: Utilize the stormwater protection measures of the City's National Pollution Discharge Elimination Systems (NPDES) permit and the provisions of the City's grading ordinance to control sources of pollutants and improve and maintain urban runoff water quality.

- Policy NR3A: Prioritize and strive to avoid impacts to groundwater recharge areas through open space preservation, runoff management, stream setbacks, clustering of development, and Low Impact Development (LID) treatment where appropriate.

- Policy NR3B: Consider working with local, state and regional agencies to:

    - identify and map groundwater recharge areas within the Sphere of Influence and protect, improve, and enhance groundwater quality of the region, and

    - encourage and support those responsible for soil, surface-water, and/or groundwater contamination, initiate, monitor, and complete full remediation activities.

- Policy NR3C: Continue to support efforts to periodically review and maintain Redding Basin Water Resources Management Plan that addresses long term sustainability of this resource.

The goals and policies in the Natural Resources Element and Public Facilities and Services Element in combination with other State and federal regulations, would reduce water quality impacts to a less than significant level.

Level of Significance Before Mitigation: Impact HYD-1 would be less than significant.

Mitigation Measures

No mitigation measures are required.

HYD-2	The proposed project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin. [HYD-2]

The City produces groundwater from 16 wells in the Redding Groundwater Basin, which underlies about 544 square miles in the north end of the Sacramento Valley. Groundwater made up 23 percent of City of Redding water supplies in 2020 and is forecast to be about 30 percent of supplies in 2045 (Redding 2021). During preparation of the Groundwater Management Plan for the Redding Groundwater Basin, updated in 2007, the Shasta County Water Agency determined that the Redding Groundwater Basin is very resilient and able to meet all reasonably expected demand; the analysis was based on the 1930s California drought and projected 2025 demands (SCWA 2007). The Redding Groundwater Basin is managed under a Groundwater Management Plan by the Redding Area Water Council, a consortium of water purveyors in Shasta County. Furthermore, according to the 2022 draft Enterprise and Anderson GSPs, both subbasins have the groundwater resources available to meet current and projected water supply commitments.

Some urban development allowed by the General Plan Update would use groundwater. In addition, new construction could include impervious surfaces, which would decrease the area available for rainfall to infiltrate the ground and recharge the underlying water table. Additionally, the General Plan Update contains the following policies designed to maintain groundwater supplies and sustain groundwater resources:

- Policy NR1B: Continue to improve compliance with the California Regional Water Quality Control Board's regulations and standards and work with local, state, and federal agencies and private watershed organizations to maintain, protect, and improve water quality and quantity.
- Policy NR3A: Prioritize and strive to avoid impacts to groundwater recharge areas through open space preservation, runoff management, stream setbacks, clustering of development, and Low Impact Development (LID) treatment where appropriate.

- Policy NR3B: Consider working with local, state and regional agencies to:
  - identify and map groundwater recharge areas within the Sphere of Influence and protect, improve, and enhance groundwater quality of the region, and
  - encourage and support those responsible for soil, surface-water, and/or groundwater contamination, initiate, monitor, and complete full remediation activities as appropriate.
- Policy NR3C: Continue to support efforts to periodically review and maintain Redding Basin Water Resources Management Plan that addresses long-term sustainability of the resource.

The goals and policies in the Natural Resources Element in combination with State and federal regulations, like the SGMA, would ensure that groundwater resources are sustainably managed and would reduce groundwater impacts to a less than significant level.

Level of Significance Before Mitigation: Impact HYD-2 would be less than significant.

Mitigation Measures

No mitigation measures are required.

HYD-3	The proposed project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: i) result in substantial erosion or siltation on- or off-site; ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or iv) impede or redirect flood flows. [HYD-3]

Erosion, Siltation, and On- and Off-Site Flooding

Alterations to drainage patterns during and following construction allowed by the General Plan Update have the potential to result in construction-related increased runoff and erosion problems. In addition, increased stormwater runoff resulting from increased impervious surfaces can create erosive velocities and higher bank shear stress, which can ultimately cause bank and bed erosion and/or sedimentation in drainages and streams, as well as create nuisance flooding in areas without adequate drainage facilities. Minor increases in tributary flows can also exacerbate creek bank erosion and/or cause destabilizing channel incision by altering the so-called “channel-forming” flow. Bank instability and bank failure often occur in urban drainage systems where the channel-forming flow has been substantially altered.

However, new development under the General Plan Update would be subject to several state and local regulations that would ensure future development would not substantially alter the existing drainage pattern of a site resulting increased runoff and erosion. For example, future would be required to request coverage under the NPDES General Permit, Order No. Water Quality Order No. 2009-0000-DWQ (as amended by Order No. 2010-0014-DWQ and Order No. 2012-0006-DWQ), if the proposed project would result in one or more acres of land disturbance. To conform to the requirements of the MS4 General Permit, a SWPPP would need to be prepared. The SWPPP would specify BMPs to prevent construction pollutants, including eroded soils (such as topsoil), from moving offsite. Additionally, pursuant to Redding Municipal Code Chapter 16.12, Clearing, Grading, Fills and Excavation, applicable projects would be required to submit grading plans, which would be accompanied by a soils engineering report, engineering geotechnical report, and drainage calculations, to obtain the required grading permits.

Furthermore, the General Plan Update includes the following policies from the Community Development and Design Element, Public Facilities Element, and Public Safety Element that would reduce impacts to erosion and flooding:

- Policy CDD5A: Consider the development of a stormwater detention master plan and development standards that would:
    - Identify adequate locations for feasible regional and neighborhood detention and related facilities, which also may consider the use of parks and public right-of-way for stormwater detention
    - Ensure that public facilities and infrastructure are designed pursuant to approved State regulatory requirements.
    - Establish design and construction standards, landscape, and maintenance guidelines.
    - Identify opportunities for recreation as a combined use with detention facilities.
    - Facilitate ground water recharge.
- Policy PF8A: Adhere to the following thresholds for stormwater drainage facilities to the extent feasible:
    - Design drainage facilities to convey a 100-year storm.
    - Until adequate stormwater facilities are in place, utilize a policy of "no net increase in runoff" for development projects in all drainage basins.
- Policy PF8B*:* Work toward constructing stormwater detention/retention basins at strategic locations to minimize current flooding risk. Select and pursue the acquisition of sites considered appropriate for such facilities as funding permits.

- Policy PF8C: Encourage Shasta County and the City of Shasta Lake to participate in the City's stormwater systems that may be available and/or participate in the development of a system of regional detention facilities that will complement the City's system.

- Policy PF8D: Encourage project designs that minimize drainage concentrations and coverage by impermeable surfaces.

- Policy PF8E*:* As resources allow, maintain all drainage facilities, including detention basins and both natural and manmade channels, to ensure that their full carrying capacity is not impaired.

- Policy PF8F*:* Encourage the use of green infrastructure design and Low Impact Development techniques for stormwater facilities.

- Policy PS2A: Continue to participate in the National Flood Insurance Program to ensure the availability of federally sponsored floodplain insurance for City residents.

- Policy PS2B: Continue efforts to reduce flood insurance premiums for City residents by restricting floodplain development and participating in the federal Community Rating Service Program.

- Policy PS2C: Consider the update of the Community Development and Design Element and the General Plan Diagram to reflect the current floodplain mapping data provided by FEMA and local studies such as the City's Montgomery Watson study. As funding is available, update these local studies to ensure that they reflect the best available information. Make maps available and accessible showing updated flood projections from a 100-year storm event; update the maps as new information is available.

- Policy PS2D: Work with local, regional, State and Federal agencies to maintain an adequate information base, prepare risk assessments, identify strategies, and seek appropriate funding for mitigation and flood protection.

- Policy PS2E: Strive to preserve the river and creek corridors, and strictly limit development in areas subject to flooding from a 100-year storm event. Allow minor encroachments into floodplains only if it can be demonstrated that such encroachments will not impact other properties or significantly contribute to a cumulative effect of other encroachments.

- Policy PS2H: Continue to require that new development and redevelopment projects minimize hazards of flooding and demonstrate that existing and/or planned (on- or offsite) drainage facilities are sized to accommodate project storm runoff and to prevent off-site increase in peak runoff rates and flood elevations.

- Policy PS2I: Require that critical public facilities, such as hospitals, emergency shelters, emergency command centers, fire and police stations, and similar facilities be designed to mitigate potential flood risk to ensure operation during a flood event, to the extent feasible.

- Policy HS2J: Adhere to the requirements of the City's National Pollutant Discharge Elimination System (NPDES) MS4 Permit, including, but not limited to the periodic inspection of stormwater channels for vegetation build-up or encroachment, trash and debris, silt and gravel build-up, erosion or any other obstruction to reduce the risk of localized flooding. Work to alleviate pre-existing flooding conditions that are a result of past practices and regulations.

The General Plan policies discussed above, and State and federal regulations, would reduce drainage impacts to a less than significant level.

Stormwater Drainage and Runoff

Development allowed by the General Plan Update would result in more impervious surfaces, thereby increasing stormwater runoff to levels that could exceed the capacity of existing or planned stormwater drainage systems. However, new development under the General Plan Update would be subject to several state and local regulations that would ensure future development would not result in significant impacts to stormwater drainage systems. For example, the City's Stormwater Management Program and Chapter 14.19, Stormwater Quality Management and Discharge Control, ensures that development comply with compliance with the State CGP and the MS4 Phase II General Permit by requiring approval of grading plans by the City engineering department.

Furthermore, the General Plan Update includes the following policies from the Community Development and Design Element, Public Facilities Element, and Public Safety Element that would reduce impacts to stormwater drainage:

- Policy CDD5A: Consider the development of a stormwater detention master plan and development standards that would:
    - Identify adequate locations for feasible regional and neighborhood detention and related facilities, which also may consider the use of parks and public right-of-way for stormwater detention
    - Ensure that public facilities and infrastructure are designed pursuant to approved State regulatory requirements.
    - Establish design and construction standards, landscape, and maintenance guidelines.
    - Identify opportunities for recreation as a combined use with detention facilities.
    - Facilitate ground water recharge.

- Policy PF8A: Adhere to the following thresholds for stormwater drainage facilities to the extent feasible:
    - Design drainage facilities to convey a 100-year storm.
    - Until adequate stormwater facilities are in place, utilize a policy of "no net increase in runoff" for development projects in all drainage basins.
- Policy PF8F*:* Encourage the use of green infrastructure design and Low Impact Development techniques for stormwater facilities.
- Policy PS2F: Continue to utilize the Storm Drain Utility or similar measures, as funding mechanisms for necessary drainage improvements throughout the City.
- Policy PS2G: Continue to require that individual development projects mitigate their stormwater impacts in accordance with City Council Policy 1806 (Floodplain Development and Stormwater Detention) and/or other policy or regulations that the City may establish for this purpose.
- Policy PS2J: Adhere to the requirements of the City's National Pollutant Discharge Elimination System (NPDES) MS4 Permit, including, but not limited to the periodic inspection of stormwater channels for vegetation build-up or encroachment, trash and debris, silt and gravel build-up, erosion or any other obstruction to reduce the risk of localized flooding. Work to alleviate pre-existing flooding conditions that are a result of past practices and regulations.
- Policy NR1B: Continue to improve compliance with the California Regional Water Quality Control Board's regulations and standards and work with local, state, and federal agencies and private watershed organizations to maintain, protect, and improve water quality and quantity.
- Policy NR1C: Utilize the stormwater protection measures of the City's National Pollution Discharge Elimination Systems (NPDES) permit and the provisions of the City's grading ordinance to control sources of pollutants and improve and maintain urban runoff water quality.
- Policy NR1I: Work with Shasta County and other regional, state, and federal agencies to reduce the amount of toxic chemicals and other agents or pollutants entering the surface water system from agriculture, entertainment facilities such as golf courses, and urban runoff.

The General Plan policies discussed above, in conjunction with the City's Stormwater Management Program and Stormwater Quality Management and Discharge Control Ordinance would reduce stormwater capacity impacts to a less than significant level.

Impediment or Redirection of Flooding

Redding contains areas designated as 100-year and 500-year flood zones, as shown on Figure 5.10-3, and the General Plan Update land use map allows development within these flood hazard areas. However, such development would be subject to Chapter 18.51 of the Redding Municipal Code, the Floodplain Overlay District, which ensures that all development permits are reviewed for compliance with the flood control measures outlined in the chapter. Chapter 18.51 generally prohibits development within the floodway. Additionally, the following policies from the Public Facilities and Services Element and Public Safety Element would reduce impacts to flooding.

- Policy PF8A: Adhere to the following thresholds for stormwater drainage facilities to the extent feasible:
    - Design drainage facilities to convey a 100-year storm.
    - Until adequate stormwater facilities are in place, utilize a policy of "no net increase in runoff" for development projects in all drainage basins.
- Policy PF8B*:* Work toward constructing stormwater detention/retention basins at strategic locations to minimize current flooding risk. Select and pursue the acquisition of sites considered appropriate for such facilities.
- Policy PF8D: Encourage project designs that minimize drainage concentrations and coverage by impermeable surfaces.
- Policy PF8E*:* As resources allow, maintain all drainage facilities, including detention basins and both natural and manmade channels, to ensure that their full carrying capacity is not impaired.
- Policy PS2A: Continue to participate in the National Flood Insurance Program to ensure the availability of federally sponsored floodplain insurance for City residents.
- Policy PS2B: Continue efforts to reduce flood insurance premiums for City residents by restricting floodplain development and participating in the federal Community Rating Service Program.
- Policy PS2C: Consider the update of the Community Development and Design Element and the General Plan Diagram to reflect the current floodplain mapping data provided by FEMA and local studies such as the City's Montgomery Watson study. As funding is available, update these local studies to ensure that they reflect the best available information. Make maps available and accessible showing updated flood projections from a 100-year storm event; update the maps as new information is available.

- Policy PS2D: Work with local, regional, State and Federal agencies to maintain an adequate information base, prepare risk assessments, identify strategies, and seek appropriate funding for mitigation and flood protection.

- Policy PS2E: Strive to preserve the river and creek corridors, and strictly limit development in areas subject to flooding from a 100-year storm event. Allow minor encroachments into floodplains only if it can be demonstrated that such encroachments will not impact other properties or significantly contribute to a cumulative effect of other encroachments.

- Policy PS2H: Continue to require that new development and redevelopment projects minimize hazards of flooding and demonstrate that existing and/or planned (on- or offsite) drainage facilities are sized to accommodate project storm runoff and to prevent off-site increase in peak runoff rates and flood elevations.

- Policy PS2I: Require critical public facilities, such as hospitals, emergency shelters, emergency command centers, fire and police stations, and similar facilities be designed to mitigate potential flood risk to ensure operation during a flood event, to the extent feasible.

Therefore, although the General Plan Update could allow the placement of structures in the 100-year flood hazard zone, the General Plan Update policies discussed above, in combination with the City's Floodplain Overlay District Ordinance and Floodplain Management Program, and other State and federal regulations, would ensure that the impact of impedance and redirection of flood waters would be less than significant.

Level of Significance Before Mitigation: Impact HYD-3 would be less than significant.

Mitigation Measures

No mitigation measures are required.

HYD-4	The proposed project would not be in a flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation. [HYD-4]

Flood Hazards

As indicated above, Redding contains areas within the 100-year and 500-year flood zones (see Figure 5.10-3), and development would be allowed in those areas under the General Plan Update. The General Plan Update includes the following policies from the Public Facilities and Services Element and Public Safety Element that ensure development minimizes potential flood impacts:

- Policy PF8A: Adhere to the following thresholds for stormwater drainage facilities to the extent feasible:

  - Design drainage facilities to convey a 100-year storm.
  - Until adequate stormwater facilities are in place, utilize a policy of "no net increase in runoff" for development projects in all drainage basins.

- Policy PF8B*:* Work toward constructing stormwater detention/retention basins at strategic locations to minimize current flooding risk. Select and pursue the acquisition of sites considered appropriate for such facilities.

- Policy PF8D: Encourage project designs that minimize drainage concentrations and coverage by impermeable surfaces.

- Policy PF8E*:* As resources allow, maintain all drainage facilities, including detention basins and both natural and manmade channels, to ensure that their full carrying capacity is not impaired.

- Policy PS2A: Continue to participate in the National Flood Insurance Program to ensure the availability of federally sponsored floodplain insurance for City residents.

- Policy PS2B: Continue efforts to reduce flood insurance premiums for City residents by restricting floodplain development and participating in the federal Community Rating Service Program.

- Policy PS2C: Consider the update of the Community Development and Design Element and the General Plan Diagram to reflect the current floodplain mapping data provided by FEMA and local studies such as the City's Montgomery Watson study. As funding is available, update these local studies to ensure that they reflect the best available information. Make maps available and accessible showing updated flood projections from a 100-year storm event; update the maps as new information is available.

- Policy PS2D: Work with local, regional, State and Federal agencies to maintain an adequate information base, prepare risk assessments, identify strategies, and seek appropriate funding for mitigation and flood protection.

- Policy PS2E: Strive to preserve the river and creek corridors, and strictly limit development in areas subject to flooding from a 100-year storm event. Allow minor encroachments into floodplains only if it can be demonstrated that such encroachments will not impact other properties or significantly contribute to a cumulative effect of other encroachments.

- Policy PS2H: Continue to require that new development and redevelopment projects minimize hazards of flooding and demonstrate that existing and/or planned (on- or offsite) drainage facilities are sized to accommodate project storm runoff and to prevent off-site increase in peak runoff rates and flood elevations.

- Policy PS2I: Require critical public facilities, such as hospitals, emergency shelters, emergency command centers, fire and police stations, and similar facilities be designed to mitigate potential flood risk to ensure operation during a flood event, to the extent feasible.

With the implementation of the General Plan Update policies and federal, state, and local regulations, future development pursuant to the General Plan Update would not increase flood hazards associated with flood zones, and impacts would be less than significant.

Tsunami

Redding is over 90 miles northeast of the Pacific Ocean and is well outside of the tsunami inundation zone. No impacts would occur.

Seiches

Released water from a seiche would result in much smaller footprints than that of the dam inundation zones as it doesn't result in complete dam failure some of the water will remain in the reservoir. While seiches have not been observed in Shasta Dam or Whiskeytown Dam, it could potentially occur, most likely from a landslide or seismically induced landslide from the hills around Shasta Lake or Whiskeytown Lake, which could displace a mass of soil and bedrock that would fall or flow downslope into the lakes. This would cause a seiche wave. However, as discussed above, development in the City within floodplains would be subject to Chapter 18.51, Floodplain Overlay District, of the Redding Municipal Code. Therefore, impacts would be less than significant.

Level of Significance Before Mitigation: Impact HYD-4 would be less than significant.

Mitigation Measures

No mitigation measures are required.

HYD-5	The proposed project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. [HYD-5]

Impact HYD-1 details measures in place to ensure future development has a less than significant impact on surface and groundwater quality. These measures would also ensure that future development does not obstruct or conflict with the implementation of a water quality control plan or groundwater sustainable plan. As discussed in Impact HYD-2, the proposed project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge. As such, impacts would be less than significant.

Level of Significance Before Mitigation: Impact HYD-5 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.10.5 CUMULATIVE IMPACTS

HYD-6	The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in less-than-significant cumulative impacts with respect to hydrology and water quality. [Threshold HYD-6]

As development proceeds within Redding, impervious surfaces and the amount of pollutants would increase, impacting surface and groundwater quality. Additional population would also be at risk of flooding. However, cumulative water quality impacts in Redding and the surrounding region would be reduced by implementing best management practices in accordance with the NDPES program, and implementation of the water quality policies contained in the General Plan Update would further reduce Redding's contribution to cumulative water quality impacts. With the General Plan Update policies and actions in place and continued compliance with the NPDES and other RWQCB regulations, the General Plan Update would not have a significant cumulative water quality impact.

The General Plan Update would minimize potential drainage and flooding impacts. Although the proposed project would contribute to development in dam inundation areas, similar to existing development, limitations on development in flood zones and the efforts to safely operate and maintain flood control infrastructure in the region would ensure less than significant impacts. Therefore, cumulative impacts are considered less than significant.

Level of Significance Before Mitigation: HYD-6 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.10.6 REFERENCES

California Department of Fish and Wildlife (CDFW). 2022. Biogeographic Information and Observation System (BIOS). https://www.wildlife.ca.gov/Data/BIOS, accessed May 2, 2022.

California Office of Emergency Services (CalOES). 2023, March 6. DVD. Dam Inundation Maps.

California Stormwater Quality Association. 2003. Stormwater Best Management Practice Handbook: Construction.

Department of Water Resources (DWR). 2023 (accessed). GSP Status Summary. https://sgma.water.ca.gov/portal/gsp/status.

Enterprise Anderson Groundwater Sustainability Agency (EAGSA). 2022a, January. Enterprise Subbasin Groundwater Sustainability Plan (Draft). https://sgma.water.ca.gov/portal/gsp/preview/82

_____. 2022b, January. Anderson Subbasin Groundwater Sustainability Plan (Draft). https://sgma.water.ca.gov/portal/gsp/preview/83

Federal Emergency Management Agency (FEMA). 2023, March 6. Flood Map Service Center.

Northern Sacramento Valley Integrated Regional Water Management Group (NSVIRWMG). 2014a, April 14. Northern Sacramento Valley Integrated Regional Water Management Plan. Received by email from Eric Wedemeyer, Supervising Engineer, Shasta County Public Works.

_____. 2014, April 14. Northern Sacramento Valley Integrated Regional Water Management Plan. https://norcalwater.org/efficient-water-management/efficient-water-management-regional-sustainability/regional-planning/irwmp/

Redding, City of. March 2003. Draft Storm Drain Utility Maintenance and Operations Plan. https://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/reddingcity/swmpapxg.pdf, accessed March 3, 2023.

_____. 2016, May 5. Post-Construction Standards Plan. http://www.cityofredding.org/home/showdocument?id=8851, accessed May 2, 2022.

_____. 2019, December. Stormwater Resource Plan. https://www.cityofredding.org/home/showpublisheddocument/23300/637166782524930000, accessed March 3, 2023.

_____. 2021, November. 2020 Urban Water Management Plan. https://www.cityofredding.org/home/showpublisheddocument/26706/637752447877530000

Shasta County Water Agency (SCWA). 2007, January. Redding Basin Water Resources Management Plan Environmental Impact Report. https://www.shastacounty.gov/sites/default/files/fileattachments/public_works/page/2834/deir_report.pdf

State Water Resources Control Board (SWRCB). 2022. Impaired Water Bodies. https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2012.shtml, accessed March 3, 2023.

US Army Corps of Engineers (USACE). 2022. National Levee Database. https://levees.sec.usace.army.mil/#/levees/search/in=@county%20state:Shasta,%20California&viewType=map&resultsType=systems&advanced=true&hideList=false&eventSystem=false, accessed on May 5, 2022.

US Environmental Protection Agency (USEPA). 2012, September 26. Water Permitting 101. http://www.epa.gov/npdes/pubs/101pape.pdf.

US Geological Survey (USGS). 1983. Ground Water in the Redding Basin, Shasta and Tehama Counties, California. https://pubs.usgs.gov/wri/1983/4052/report.pdf

_____. 2022. The National Map Advanced Viewer. https://viewer.nationalmap.gov/advanced-viewer/, accessed May 2, 2022.

5.11 LAND USE AND PLANNING

This chapter describes the regulatory framework and existing conditions in the Planning Area related to land use, and the potential impacts of the proposed project on land use.

5.11.1 ENVIRONMENTAL SETTING

5.11.1.1 REGULATORY FRAMEWORK

Regional Regulations

Regional Transportation Plan & Sustainable Communities Strategy for the Shasta Region

The Shasta Regional Transportation Agency (SRTA) is the agency responsible for transportation planning for the Shasta County region, including the three cities and the unincorporated area. As part of its Regional Transportation Plan (RTP), SRTA must develop a Sustainable Communities Strategy (SCS), required under California Senate Bill 375, the Sustainable Communities and Climate Protection Act of 2008 (SB 375), that addresses how the RTP will meet the region's greenhouse gas (GHG) emissions reduction targets. The latest iteration of the SRTA RTP/SCS was adopted in 2018. The RTP/SCS addresses all modes of travel used by people and for goods and freight movement, including streets and roads, public transit, bicycle and pedestrian, aviation, and rail. It also identifies the existing and projected mobility needs in each category, as well as recent accomplishments and priority projects and programs during the 2018-2022 RTP planning cycle.

Shasta County Local Agency Formation Commission (LAFCO)

The Shasta County Local Agency Formation Commission (LAFCO) is an independent agency responsible for the implementation of the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 (Act). The Act, Government Code §56000 et seq., identifies the responsibilities of LAFCO, which include the review, approval, and/or denial of boundary changes, annexations, consolidations, special district formations, incorporations for cities and special districts, and the establishment of local “Spheres of Influence” (SOI) which are boundaries established for each governmental agency for future provision of services. The Shasta County LAFCO promotes policies discouraging urban sprawl, preserving open-space and prime agricultural land, efficiently extending services, and promoting orderly development through providing housing for persons and families of all incomes.

Section 56001 of the Act states that direction should be “effected by the logical formation and modification of the boundaries of local agencies, with a preference granted to accommodating additional growth within or through the expansion of, the boundaries of those local agencies which can best accommodate and provide necessary governmental services and housing.” While Section 56001 promotes that a single multipurpose governmental agency “may be the best mechanism for establishing community service

priorities especially in urban areas", limited purpose agencies also play a critical role in providing services, especially in rural areas and areas in transition from rural to urban.

2022 Redding Municipal Services Review and SOI Updates

In December of 2022, Shasta LAFCO approved the Municipal Services Review & Sphere of Influence Update for the City of Redding. The purpose of a MSR in general is to provide a comprehensive inventory and analysis of the services provided by local municipalities, service areas, and special districts. A MSR evaluates the structure and operation of the local municipalities, service areas, and special districts and discusses possible areas for improvement and coordination. Pursuant to Shasta LAFCo policy, a MSR is conducted prior to or in conjunction with its mandate to review and update each local agency's sphere of influence every five years or as necessary. The 2022 update provides determinations and recommendations for the provision of services and adjustments to Redding's SOI.

Local Regulations

2000-2023 Redding General Plan

The following policies are included in the existing General Plan regarding land use and planning. The numbering is from the existing General Plan and therefore may not be consecutive.

Air Quality Element

- Goal 1: Effective communication, cooperation, and coordination in developing and implementing community and regional air quality programs.
    - Policy 7 Comprehensive Land Use, Transportation, and Air Quality Planning: The City will continue to integrate land use, transportation, and air quality planning to make the most efficient use of public resources and to carry out the policies and goals of this element.
    - Policy 8 Regional and Local Plan Consistency: All City submittal of projects to be included in regional transportation plans (Regional Transportation Improvement Plan [RTIP], County's Congestion Management Plan [CMP], etc.) should be consistent with the goals and policies of this General Plan Element.
- Goal 2: Reduce motor vehicle trips and vehicle miles traveled and increase average vehicle ridership.
    - Policy 18 High Density and Transit: The City shall, as much as possible, continue to plan high-density development in areas that can be fitted with a transit system.
    - Policy 19 Mixed Use—Bicyclists and Pedestrians: The City shall continue to encourage mixed-use developments near employment centers that provide commercial services such as day-care centers, restaurants, banks, and stores.

- Policy 22 Leap-Frog Development: The City shall continue to encourage compact infill development.
- Policy 23 Higher Densities: The City shall consider redesignating vacant lands suitable for higher densities and transit/pedestrian-oriented developments during future General Plan updates and periodic reviews.
- Policy 24 Single-Family and Mixed-Use Conflicts: The City shall encourage projects within urban areas that will improve the effectiveness of the transit system and will not adversely affect existing single-family development.
- Policy 25 Sphere of Influence: The City will work with the Local Agency Formation Commission, Cities of Anderson, Shasta Lake, and the County in establishing a hard-edge urban limit line for the boundary of the metropolitan area of the County and commitment to providing public services only within the urban areas.

Community Development and Design Element

- Goal CDD1: Encourage urban growth to occur within the City and provide a development pattern that establishes an orderly urban service area.
  - Policy CDD1A: Use Figure 1-1 (of the 2000 General Plan) to determine appropriate locations for accommodating urban growth within the City and the Planning Area. The Primary and Secondary Growth Areas depicted on that figure strike a balance between:
    - The need for future urban expansion areas.
    - The costs associated with annexing areas which contain existing substandard development.
    - Rural/urban interface conflicts.
    - The ability of the City to provide urban services.
  - Policy CDD1B: Consider annexation of additional lands under any of the following circumstances:

    The annexation will result in:
    - A more logical service area boundary.
    - The elimination of an existing County "island."
    - More efficient provision of urban services.
    - A resolution of existing health and safety concerns.
    - A neutral or positive fiscal impact to the City.
    - Consider modifications of the Primary Growth Area boundary only when the land supply for single-family housing development declines to a ten-year

supply or less as determined by the City and/or when appropriate lands for industrial development are identified.

- Policy CDD1C: Promote orderly expansion of the City's boundaries through the approval of prezoning prior to annexation. Establish specific findings and criteria for consideration of prezoning requests within the Primary and Secondary Growth Areas.
- Policy CDD1D: Refer all development applications which have the potential to impact lands or facilities in the unincorporated area to Shasta County for review and comment.
- Policy CDD1E: Encourage adjacent jurisdictions to adopt development standards consistent with the City's.
- Policy CDD1F: Generally oppose development of community septic systems or temporary sewage disposal facilities within the Sphere of Influence.
- Policy CDD1G: Require annexation before services are provided by the City, except under extraordinary circumstances.
- Policy CDD1H: Support the creation of new, or the expansion of existing, special districts within the City's Sphere of Influence only where service agreements already exist.
- Policy CDD1J: Work with Shasta County to develop and implement a planning strategy that will permit the orderly urbanization of key areas within the Stillwater Basin and the Quartz Hill Specific Plan Area. The strategy should include emphasis on determining:
  - The distribution and design of future arterial and collector streets.
  - Logical extension of utilities such as water and sewer.
  - Drainage facilities.
  - Residential lot configurations that will accommodate future resubdivision.

- Goal CDD3: Ensure a proper balance between development areas and the natural environment.
  - Policy CDD3A: Prohibit development in natural floodplains or on hillsides with slope areas exceeding 20 percent. Minor encroachments into these areas for new developments may be authorized without a General Plan amendment if necessary to facilitate installation of infrastructure, provide emergency-access opportunities, or otherwise facilitate construction of the project as approved by the City. Where an entire site designated for residential use is subject to flooding or has slopes over 20 percent, a density of 1.0 dwelling unit per 20 acres may be permitted by use permit subject to appropriate standards.

- Policy CDD3B: Require buffer areas between development projects and significant watercourses, riparian vegetation, and wetlands in accordance with the Natural Resources Element.
- Policy CDD3C: Preserve natural corridors and linkages between habitat types through project design, key open-space acquisitions, floodplain and slope dedications and easements, conservation easements, and similar mechanisms.

- Goal CDD4: Protect and enhance the relationship between the City and the Sacramento River.
  - Policy CDD4A: Preserve significant trees and other vegetation along the banks of the Sacramento River, while emphasizing passive recreation and providing opportunities for active uses.
  - Policy CDD4B: Continue acquisition of key lands along the river and the other area waterways to provide passive, nonmotorized public access and to preserve important ecological values and sensitive habitats. This may be accomplished by a combination of public and private land purchases, donations, dedications, granting of public easements, the use of life estates, and similar mechanisms.
  - Policy CDD4C: Continue to develop active and passive public-use facilities and trails along portions of the riverfront as generally depicted on Figure 1-2 (of the 2000 General Plan). Expand public use areas and pedestrian and bicycle trails as additional lands are made available, while limiting impacts to existing wildlife habitat and developed properties.
  - Policy CDD4D: Establish public open-space and pedestrian/bicycle links between the river and parks, activity centers, schools, and other major open-space areas such as stream corridors.
  - Policy CDD4E: Give priority to the expansion of existing vehicle bridges over the construction of additional bridges. If new bridges are constructed, they should be designed to complement their surroundings and views of the structure from the river and trails.
  - Policy CDD4F: Design open-space accessways to complement existing development and, where applicable, protect the privacy and security of adjoining residences.

- Goal CDD7: Retain the natural appearance of steep hillside areas and designated ridge lines.
  - Policy CDD7A: Protect the visual integrity of prominent ridge lines that can be viewed from key public gathering areas, the river, visitor destinations, and community gateways. These ridge areas are depicted on Figure 1-4 (of the 2000 General Plan). Utilize one or more of the following measures to avoid or minimize development impacts:

        - Public or private purchase of lands, the use of conservation easements, or similar measures.
        - Performance standards, including limitations on building heights and/or increased ridge-line setbacks and standards for use of appropriate building forms, colors, and materials that blend into their surroundings.
    - Policy CDD7B: Establish hillside development standards to: (1) decrease allowable residential densities as the slope of a development site increases; (2) limit site grading on steep slopes; (3) appropriate, so buildings are set into and step down the hill; and (4) minimize disturbance of native trees and other vegetation outside the building, yard, and driveway areas, while providing appropriate levels of wildland fire protection. Require revegetation of disturbed areas.
- Goal CDD8: Promote the development of a cohesive, well-defined City.
    - Policy CDD8A: Maintain well-defined community edges using open-space buffers, greenbelts, agricultural lands, stream courses, clustered development, and other appropriate types of landscape and design features.
    - Policy CDD8B: Provide community "gateway" treatments, including signage and landscape, particularly in locations depicted on Figure 1-5 (of the 2000 General Plan). Provide Downtown "gateway" treatments at appropriate locations.
    - Policy CDD8C: Link special community facilities, parks, and other uses to and through the Downtown by establishing clear, convenient, and attractive pedestrian and vehicle connections.
- Goal CDD9: Preserve existing community character and fabric and promote the development of livable and cohesive neighborhoods and districts.
    - Policy CDD9B: Establish standards for infill projects in existing residential neighborhoods that respect existing neighborhood scale and character.
    - Policy CDD9C: Establish design standards for new development that will create more livable and aesthetically pleasing neighborhoods. Promote compatibility between land uses by minimizing impacts to privacy, views, and noise and from intrusion of non-neighborhood traffic.
    - Policy CDD9D: Design projects to provide gradual transitions between multiple-family and single-family districts and between commercial and residential districts by considering appropriate techniques such as:
        - Density/intensity transitions.
        - Landscape buffers/trails.
        - Building placement.
        - Height transitions

- Goal CDD9: Provide for a pattern of infill development that:
  - Links open space areas to each other and to developed areas such as parks, schools, residences, and commercial developments.
  - Promotes mixed-use developments.
  - Promotes adaptive reuse of vacant buildings.
  - Places employment, shopping, and other activity centers in or near residential neighborhoods
  - Encourages walking, bicycling, and other public transit use by promoting safe and convenient choices for all.
    - Policy CDD10C: Establish incentives for infill development and reuse of underutilized parcels in transit corridors.
    - Policy CDD10D: Incorporate public transit stops and bus shelters in the design of new development and redevelopment of older projects when consistent with approved transit plans and policies. Ensure safe and efficient access, particularly for handicapped individuals.
    - Policy CDD10E: Establish incentives for medium- to high density, mixed-use developments, where appropriate, with emphasis on Downtown and in the "Mixed Use Neighborhood Overlay" Districts.
    - Policy CDD10F: Provide comprehensive transportation facilities, including bicycle and pedestrian routes. Integrate pedestrian and bicycle routes into developments to provide alternative access to public and private parks and open space, transit stops, nearby commercial developments, and schools.
    - Policy CDD10G: By use permit, allow small neighborhood serving stores to be established in all districts where they will not unduly impact existing neighborhoods.
- Goal CDD11: Ensure that new residential development is well-located and well-designed and can accommodate a mixture of housing types and uses.
    - Policy DD11A: Maximum residential densities within a given range are appropriate only for those projects that demonstrate superior design features and amenities.
    - Policy CDD11B: Establish residential design standards that address natural features, visibility of structures, variations in building design, garage placement, usable open space, access, and the relationship to surrounding uses. Site constraints may dictate that the maximum number of lots allowed by the General Plan classification for a given parcel of land may not be realized.

- Policy CDD11C: When zoning single-family residential areas within designated density ranges, use density afforded by the previous General Plan. Exceptions will be made where site topography, access, availability of utilities, and/or existing neighborhood character indicate that development potential should be either increased or reduced by zoning action.
- Policy CDD11D: Allow residential developments to include a mix of residential densities and dwelling types, provided that the proposed development is in scale with the neighborhood and that the total dwelling unit count is consistent with the applicable General Plan density range depicted on the General Plan Diagram.
- Policy CDD11E: Allow day-care facilities, churches, residential care facilities for the elderly, public and private schools, small grocery stores and other neighborhood-serving uses, and other ancillary uses in residential neighborhoods, provided that they are located and designed to be compatible with the neighborhood.
- Policy CDD11F: Allow by use permit guest houses/second residential units in single-family residential districts where appropriate. The principal residence must be owner occupied.
- Policy CDD11G: Prohibit the creation of flag lots in developed areas where these lots are not in character with the neighborhood.
- Policy CDD11H: Locate multiple-family housing throughout the community, but especially near transportation corridors, Downtown, major commercial areas, and neighborhood commercial areas.

- Goal CDD12: Ensure that neighborhoods are attractive, healthy, safe, and well-maintained.
  - Policy CDD12A: Promote and assist in the establishment of neighborhood and homeowner associations that will provide a focal point and social structure in neighborhoods.
  - Policy CDD12B: Promote neighborhood involvement in the safety and maintenance of neighborhoods by encouraging the following types of activities:
    - Volunteer services.
    - Public parks and facilities renovations.
    - Neighborhood clean-up programs.
    - Neighborhood Watch programs.
  - Policy CDD12C: Continue selective neighborhood projects such as the Community Oriented Policing Program.
  - Policy CDD12D: Promote stronger neighborhood/school partnerships, including joint use of City and school facilities.

- Policy CDD12E: Adopt a Property Maintenance Ordinance or other appropriate mechanisms to address:
  - Building maintenance.
  - Yard maintenance.
  - Fencing.
  - Maintenance of vacant properties.
  - Assistance programs under appropriate circumstances.
  - Vegetation management fuel-reduction areas.
- Policy CDD12F: Establish priorities for infrastructure improvements based in part on neighborhood needs.
- Policy CDD12G: Enforce minimum housing standards for all rental properties.
- Policy CDD13A: Ensure that adequate commercial lands are identified on the General Plan Diagram to meet existing and projected market demand for local and regional retail commercial activity. Proposed amendments to the Diagram, not initiated by the Planning Commission or City Council, will be considered appropriate in instances where there is a demonstrated need for additional retail commercial land to serve the existing and projected retail market within a 5-year time horizon. Applicants for General Plan amendments, including applications initiated by the City on public lands, shall provide a market analysis, the scope of which must be approved by the City, sufficiently detailed to determine if the above market criteria are in evidence. Demonstrating only that a particular location would be economically viable for an intended use will not constitute, in and of itself, sufficient grounds for a General Plan amendment.

- Goal CDD13: Designate retail commercial lands in appropriate locations to meet the present and future diverse needs of Redding's residents and visitors and to maintain the City's economic vitality.
  - Policy CDD13B: Provide sufficient opportunity to satisfy the retail market demand by allowing a range of site sizes and locations, while ensuring that a reclassification of land for commercial uses will not:
    - Conflict with policies that encourage multiple-family uses in close proximity to retail and service uses and along transportation corridors.
    - Conflict with policies of the Parks, Trails, and Open Space Master Plan.
    - Reduce the supply of multiple-family lands as necessary to satisfy the long term housing needs for very low-, low-, and moderate-income households in the community.

- Policy CDD13C: Encourage redevelopment of existing commercial properties for regional-scale commercial uses by considering General Plan amendments on sites less than 15 acres, where redevelopment will result in the following, as appropriate:
    - Development that conforms to current development standards and criteria by eliminating most, if not all, nonconforming site conditions on an existing site or center.
    - The assembly of predominantly developed commercial properties, the redevelopment of which will result in a more efficient land use pattern and contemporary site design, such as the use of common driveways, parking fields, landscape, and public areas within the development.
    - Unique site designs, such as multiple stories, mix of uses, unique architecture, and/or similar elements, are encouraged to achieve the intent of this policy, which includes the potential for development of regional commercial uses that will result in significant site upgrades.
    - The use is compatible with surrounding land uses.
    - The use does not eliminate potential neighborhood shopping opportunities that reduce vehicle trips or provide neighborhood services and identity.
- Policy CDD13D: Consider the following site characteristics when designating lands for retail commercial uses:
    - Location on an arterial street, preferably at street intersections.
    - Provision of sufficient depth that will allow a cohesive/clustered development style instead of separate uses developed in a linear fashion along the street.
    - Location within or adjacent to existing or planned concentrations of population.
- Policy CDD13E: Require overall development plan approval for all shopping centers and regional centers before allowing the development of individual uses within the center.
- Policy CDD13F: Require regional centers (i.e., those regional commercial districts that include multiple main tenants) to include a mix of uses, such as recreation, specialty retail, restaurants, offices, and accommodations for transit services and public uses.

- Goal CDD14: Encourage project development which is compatible with surrounding properties, and which improves the image of the City.
    - Policy CDD14A: Establish design and performance standards for commercial development to ensure that building and site design are compatible with their surroundings in terms of scale, mass, building patterns, building details, location of

parking, signage, and landscape and enhance views from major streets and other public areas.

- Policy CDD14B: Create an incentive program to encourage proposed projects to provide site amenities, site design, and building design that clearly exceed expected standards by providing:
  - Unique project relationship to the surrounding community.
  - Strong, consistent design style throughout the project.
  - Imaginative solutions to providing development features such as:
    - Signs.
    - Parking lots.
    - Screening and enclosing elements.

- Goal CDD19: have building setbacks and heights reflect the role and character of the various districts of the City.
  - Policy CDD19A: Establish appropriate standards for buildings, massing, height, and setbacks for residential and commercial developments on arterial and collector streets that will define and reinforce the character of development districts in the city.
  - Policy CDD19B: Utilize Figure 1-5 (of the 2000 General Plan), in conjunction with the appropriate Focus Area maps and policies, to establish the appropriate locations for "mid-rise" and "high-rise" buildings in the community. High-rise buildings are only appropriate in the Downtown core area.
  - Policy CDD19C: Establish appropriate standards and design criteria for mid-rise and high-rise buildings. The standards and criteria should address, among other items, the following:
    - Definition and support of adjacent streets and open spaces.
    - Integration with other buildings and open space on the block or in the area.
    - Provision of high-quality pedestrian amenities.
    - Recognition of the importance and role of the three main parts of tall buildings: the base, middle (shaft), and top.

- Policy CDD19D: Establish procedures for instituting an Architectural Review Committee to review and make recommendations proposals for mid-rise and high-rise buildings. The Committee should include individuals with specific expertise and experience in the design and construction of these building types.

- Goal CDD21: Ensure proper and efficient administration of the General Plan Diagram.
  - Policy CDD21A: Permit the Director, Board of Administrative Review, or Planning Commission to reconcile land use classification boundaries to coincide with legal parcel boundaries and actual flood and slope areas provided that land use compatibility is maintained, that the integrity of each land use district is maintained, and that there will be no adverse impacts of such boundary adjustment. Such actions will not constitute a General Plan amendment.
  - Policy CDD21B: Allow the Planning Commission to determine the appropriate mix and density of development on parcels shown on the General Plan Diagram as divided into two or more land use classifications based on policies of the General Plan. Such actions will not constitute a General Plan amendment.
- Goal CDD22: Provide for the ongoing implementation of the General Plan.
  - Policy CDD22A: The Planning Commission shall review the General Plan annually, focusing principally on actions undertaken in the previous year to carry out the implementation programs of the Plan. The Planning Commission's report to the City Council shall include, as the Commission deems appropriate, recommendations for amendments to the General Plan. This review shall also be used to satisfy the requirements of Public Resources Code 21081.6 for a mitigating monitoring program.
  - Policy CDD22B: Conduct a major review of the General Plan every five years and revise it as deemed necessary. General Plan Diagram is limited in its ability to provide detailed guidance on development at a neighborhood level. Likewise, broad, citywide policies often cannot adequately convey how the General Plan envisions certain smaller areas of the City to develop. Whether these areas are entire neighborhoods or are limited to a few blocks or parcels, this section of the Land Use Element serves to fine-tune the General Plan Diagram and policies relating to various portions of the Planning Area. The areas described below have their own unique development constraints and opportunities. For purposes of this Plan, these areas are referred to as "focus areas."

Redding Municipal Code

The City of Redding Municipal Code is the set of laws and ordinances adopted by the City Council. Title 18 (Zoning) of the municipal code regulates physical development in the community and enacts the goals and policies of General Plan 2000-2020 by classifying and regulating land uses. The zoning ordinance identifies

different zoning designations, contains the development standards that apply to each, and discusses permitting requirements and development review.

Redding Specific Plans

In addition to the General Plan's land use provisions, certain areas of the City are also governed by Specific Plans which establish policies and development standards for specific areas of the City. The Redding Riverfront Specific Plan was adopted in 1990 and amended in 1992 and comprises approximately 500 acres along the Sacramento River in the of City (Redding 1992). The Downtown Redding Specific Plan Update was updated in April 2022 and includes the vision and goals for the land use and urban design, circulation and parking, economic development of the downtown area in addition to implementation strategies. The Oasis Road Specific Plan was adopted in 2006 and covers approximately 762 acres located both to the west and east of Interstate 5 (I-5) at the Oasis Road interchange (Redding 2022a). The Bechelli Bonnyview Specific Plan (aka River Crossing Marketplace Specific Plan) was adopted in 2021 and establishes land use, zoning, development standards, regulations, and guidelines for approximately 222,000 square feet of regional level retail development on approximately 25 acres located in the southcentral region of the City of Redding (Redding 2021a). The City also adopted a strategic revitalization plan for the Parkview neighborhood.

Airport Land Use Plans

The Redding Regional Airport, located in the southeast portion of the City, is designated as a certified airport for commercial airline operations. The Airport's Specific Plan was adopted in 1982 and governed the land use in a 8,500-acre plan area surrounding the airport (Redding 1982). This document was superseded by the 2000-2020 General Plan. The Westside Area Plan was adopted in 1992 and serves as the comprehensive land use plan for Benton Airpark (OPR 1992) which was also superseded the 2000-2020 General Plan. An Airport Master Plan was also adopted for the Redding Municipal Airport in 2015 and for Benton Airpark in 2005.

5.11.1.2 EXISTING CONDITIONS

Communities

Redding's Planning Area can be divided into five primary sectors, each of which is shaped by its unique characteristics, histories, and issues. These areas are (1) Central and West Redding, (2) East Redding (Enterprise), (3) Dana Drive and Northeast Redding, (4) North Redding, and (5) South Redding. Central Redding is the location of the City's original commercial and office core. It also contains local government facilities and older residential districts. East Redding, also known as the Enterprise Area, contains older subdivisions and strip-type commercial development. Dana Drive and Northeast Redding is characterized by regional commercial development including the Mount Shasta Mall with multiple-family and single-family development surrounding the areas immediately north and east of the commercial development. Northwest Redding contains a scattering of residential and commercial development and contains Redding's "Miracle Mile," North Market Street, which contains a variety of motel, restaurant, retail, and

auto sales establishments. South Redding was the original southern commercial gateway to the City and also contains several subdivisions that have led to a reduction in the pastoral setting of the area (Redding 2000).

General Plan Land Use Designations

The classifications fall within eight major land use categories: Residential, Commercial, Industrial, Public and Institutional, Airport Service, Parks, Greenway (Open Space), and Critical Mineral Resource Overlay. See Table 4-2, *Land Use Designations in the City under the Current General Plan*, in Chapter 4, *Environmental Setting*, of this Draft EIR for a description of each General Plan Land Use classification.

As shown in Table 4-1 in Chapter 4, the largest land use designation within the City is residential. This category includes a wide range of residential uses and densities as outlined in the City's General Plan. Other prominent land uses include industrial, commercial, and public facilities. Land Use designations for the City and adjacent areas are shown in Figure 3-4, *General Plan Land Use Diagram*, in Chapter 3, *Project Description*.

5.11.2 THRESHOLDS OF SIGNIFICANCE

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

LU-1 Physically divide an established community.

LU-2 Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

LU-3 In combination with past, present, and reasonably foreseeable projects, result in cumulative impacts with respect to land use and planning.

5.11.3 PROPOSED GENERAL PLAN POLICIES

The following policies of the 2023-2045 Redding General Plan Update are relevant to land use and planning impacts.

Community Design and Development Element

- Policy CDD1A: Use the General Plan Diagram and the Primary Growth Area and Secondary Growth Area boundaries (Figure CDD-1) to determine potential growth areas within the City's Sphere of Influence. The City shall encourage sustainable development through compact, infill, higher-density development. The need for annexation shall be approved based on the cost associated with annexing areas containing existing substandard development, rural-urban interface conflicts, social,

cultural, and economic impacts on existing neighborhoods and infrastructure within the City, and the ability of the City to provide urban services upon annexation.

- Policy CDD1B: Consider annexation of additional lands under any of the following circumstances. The annexation will result in:
    - A more logical service area boundary
    - The elimination of an existing County "island"
    - More efficient provision of urban services
    - Modifications to the Primary Growth Area boundary will be considered when the land supply for housing development declines to a ten-year supply or less and/or when appropriate land for any of the following uses is identified:
    - Industrial development
    - As appropriate, assist in the expansion of community-wide educational services, including, but not limited to Shasta Community College or other public institution(s)
    - Providing additional higher-density residential lands to support the workforce
    - Providing student housing
    - Meeting the goals of the Housing Element
- Policy CDD1C: Promote densification of the City's urban areas through infill development, where appropriate, and before the expansion of the City's boundaries through the approval of pre-zoning, prior to annexation. Establish specific findings and criteria for consideration of pre-zoning requests within the Primary and Secondary Growth Areas as depicted in Figure CDD-1.
- Policy CDD1D: Refer all development applications which have the potential to impact land or facilities in the unincorporated area to Shasta County for review and comment.
- Policy CDD1E: Encourage adjacent jurisdictions to adopt development standards consistent with the City's.
- Policy CDD1G: Pursue requiring unincorporated areas be annexed into the City before providing City services except under extraordinary circumstances and in accordance with City Council policy.
- Policy CDD2A: The construction of private development projects should be coordinated with the timing and location of public services. Establish through a combination of development fees and other appropriate funding mechanisms that development pays its fair share of the costs of upgrading existing facilities and/or constructing/providing new facilities and services as determined by the direct impacts that such development has on these essential services.
- Policy CDD2B: To the extent feasible, new developments shall maintain adequate service levels for existing development while providing for the upgrade/expansion of existing public services, as appropriate.

- Policy CDD2C: Evaluate public-service impacts as part of environmental review for proposed development projects and require applicants to obtain "will-serve" letters from service providers prior to the approval of a discretionary permit or a building permit.
- Policy CDD2D: Work with school districts and public and quasi-public agencies as appropriate in determining the location of needed sites in the planning area for new institutional development and facilities by reserving sites as a condition of development approval in accordance with the State law. Uses on such sites should be designed to complement the neighborhood's character.
- Policy CDD2E: Maintain adequate capacity for urban growth and coordinate with service providers to ensure to the extent feasible that all public utility facilities and services required by development are available. The City shall undertake assessments of its facilities and services as necessary and may help facilitate the creation of assessment districts, where appropriate. Where public facilities are to be provided to development by a separate water or community services district, the City shall work to coordinate planning activities with such agencies and obtain a “will-serve” letter, to ensure that the development in accordance with this General Plan can be accommodated.
- Policy CDD3A: Generally prohibit development in natural floodplains and hillsides, and those that exceed a slope of 20 percent. Minor encroachments into these areas for new developments may be authorized without a General Plan amendment, if necessary, to facilitate the installation of public utility infrastructure, provide public street emergency access, provide public trail connections, establish evacuation routes, or otherwise facilitate the construction of the project as approved by the City. In residential areas subject to flooding or slope exceeding 20 percent, the City shall allow a density of 1.0 dwelling unit per 20 acres through a Use Permit subject to appropriate standards.
- Policy CDD3B: Require buffer areas between development projects and significant watercourses, riparian vegetation, and wetlands in accordance with the Natural Resources Element and the Redding Municipal Code (RMC).
- Policy CDD3C: Work to preserve natural corridors and linkages between habitat types through project design, including, but not limited to key open-space acquisitions, floodplain and slope dedications, conservation easements, and similar mechanisms.
- Policy CDD4A: Preserve significant native trees and other vegetation along the river and creek corridors to the extent feasible, while allowing passive recreation and providing opportunities for active uses where appropriate.
- Policy CDD4B: Continue to acquire key lands along the Sacramento Riverfront and other waterways to provide for passive, non-motorized public access and to preserve ecological values and sensitive habitats through a combination of public and private purchase, donations, dedications, conservation elements, granting of public easements, life estates or similar strategies as funding and other opportunities become available.
- Policy CDD4C: Continue to develop along the riverfront:
    - Public access areas as additional lands are made available.

- Active and passive public recreational facilities as discussed in the Recreation Element
- Active engagement with natural areas through trails, wildlife observation, and educational displays while limiting impact to existing wildlife habitat and other developed properties.
- Pedestrian and bicycle trails and connections to schools, recreational facilities and other major public and nonprofit/institutional owned open-space areas
- A robust trail network system requiring developments located along planned trail routes to dedicate trails and trail easements through private donations or by public purchase, as appropriate.

- Policy CDD4F: Continue to conserve River, creek, and riparian corridors by maintaining development buffers generally in accordance with Figure CDD-3 (of the Community Design and Development Element). Work with local and regional agencies on mapping and maintaining an inventory on sensitive, rare, and endangered flora and fauna contained in these areas.
- Policy CDD4G: Consider a review of the River and Creek Corridor Development Ordinance to verify if the specific setback/buffer requirements are appropriate.
- Policy CDD4K: Continue to identify opportunity areas along the river and creek corridors and strive to incorporate specific uses to create a public realm by promoting safe pedestrian and bicycle access, establishing new trail connections, and providing parks and recreational opportunities, visitor-friendly amenities, visual resources, and ample public access to the river without compromising on the security and privacy of adjacent residences.
- Policy CDD7A: Strive to maintain well-defined community edges using open space buffers, greenbelts, agricultural lands, stream corridors, and other natural features. Where this is not feasible, utilize City-wide "gateway" treatments through signage and/or identifiable landscape features or other aesthetic elements.
- Policy CDD7B: Link special community facilities, parks, and other uses to and through Downtown by establishing clear, accessible, convenient, and attractive pedestrian, bike, and automobile connections where appropriate and feasible.
- Policy CDD7C: Strive to develop and adopt a citywide Directional Sign Program by identifying and establishing districts and neighborhoods; incorporating landscape, banners, flags, art, and displays to enhance visual attractiveness and historical and cultural significance that would help define destinations and meet current and future needs of the diverse population in the community.
- Policy CDD7D: Consider graphic standards and artistic directional signage for local streets, plazas, the river, trails, community centers, and other landmarks focused on local identity, aesthetics, and visibility to establish a high-quality, appropriate, and attractive brand identity and design as a key strategy to enhance the quality of life, the community and promote tourism and economic development.

- **Policy CDD7E:** Collaborate with public and private agencies and organizations, as appropriate, to create distinct, fundamental, and enhanced navigational elements that resonate with the community's identity and vision.
- **Policy CDD7F:** Work with property owners to establish Downtown "gateway" treatments at appropriate locations and enhance the livability and character of Downtown by establishing a distinct theme for community wayfinding through inclusive and identifiable navigational elements, map kiosks, and pedestrian and off-street signs.
- **Policy CDD8G**: Consider development and application of a Neighborhood Conservation Overlay District or similar mechanism to protect identified historic districts and ensure new developments share similar characteristics to minimize adverse effects that occur through unsuitable development.
- **Policy CDD10A**: Establish standards for infill projects in existing residential neighborhoods that respect existing neighborhood scale and character as funding allows.
- **Policy CDD10B**: Consider establishing zoning standards, design guidelines, incentives, and an expedited development and building permit application and review process to encourage infill development on vacant and underutilized parcels in the City.
- **Policy CDD10C:** Consider establishing incentives for medium- to high-density, mixed-use developments, where appropriate, with emphasis on Downtown and in the "Mixed Use Neighborhood Overlay" Districts. Review and amend as necessary the Mixed Use Neighborhood Overlay zoning district to ensure that it serves to facilitate and incentivize the development of new mixed use neighborhoods to the extent feasible.
- **Policy CDD10D:** Encourage development in the City to include inviting, attractive, accessible, and walkable urban mixed-use neighborhoods combining residential, commercial, recreational, open space, and employment to maximize the use of underused urban lots.
- **Policy CDD10E:** Consider a program to identify and define the vision of infill priority areas, urban nodes, the Opportunity Areas depicted in Figure CDD-5, and the Focus Areas identified in this General Plan, and establish specific development goals and guidelines. Strive to ensure that developers of new residential, commercial, and mixed-use developments in these infill priority areas have sufficient guidance to understand the goals of each area.
- **Policy CDD10F:** When determining the appropriate mix and form of residential, commercial, and recreational uses in infill priority areas consider the neighborhood's historical, cultural, and physical characteristics; the community's needs; parcel depth and size; market and policy demand; and the need to revitalize space, uses, and other physical characteristics.
- **Policy CDD10G:** Facilitate the development of residential uses in conjunction with a mixture of local-serving retail and service uses at appropriate locations by allowing small neighborhood-serving stores to be established in all residential districts where they will not unduly impact existing neighborhoods either by establishing appropriate standards or requiring a discretionary permit.

- Policy CDD10H: Endeavor to enhance the quality of life through the development of Third Places projects (social surrounding separate from home and work) and programs combining open space, recreation, entertainment, and shopping, that residents actively seek outside of home and work.
- Policy CDD10I: Provide safe and comprehensive transportation facilities with appropriate accessibility standards, consistent with approved transit plans and policies. Pursue incorporation of bicycle and pedestrian routes, public transit stops, and bus shelters into the design of new developments and redevelopment of older projects to help residents access services, commerce, employment, education, and recreation consistent with approved transit plans and policies.
- Policy CDD11A: Encourage developers to create new residential developments in infill priority areas that are available to a broad segment of the community. The developments should be pedestrian and bicycle friendly, to make efficient use of available infrastructure and at densities that will help facilitate the provision and use of public transit where it is available.
- Policy CDD11B: Maximum residential densities within a given range of the land use classifications of this General Plan are appropriate for projects that demonstrate superior design features and amenities and/or the development is an affordable housing project that is supported by financial aid or other assistance provided by the City of Redding.
- Policy CDD11C: Consider developing form-based codes specific to infill priority areas and develop small lot zoning standards for existing lots below the City's minimum lot size to facilitate residential development in infill priority areas.
- Policy CDD11D: Explore options for incentivizing parcel assemblage in infill priority areas to support residential and mixed-use developments.
- Policy CDD11E: Facilitate to the extent feasible, the construction of new affordable housing units that are within walking distance to transit, everyday services, schools, and employment centers.
- Policy CDD11F: Consider establishing residential design standards that address natural features, visibility of structures, variations in building design, garage placement, usable open space, access, and the relationship to surrounding uses. Site constraints may dictate that the maximum number of residential dwelling units allowed by the General Plan classification for a given parcel of land may not be realized.
- Policy CDD11G: Continue to allow residential developments to include a mix of residential densities and dwelling types, provided that the proposed development is in scale with the neighborhood and that the total dwelling unit count is consistent with the applicable General Plan density range depicted on the General Plan Diagram.
- Policy CDD11H: Strive to create diverse housing options for all income levels in infill priority areas, by encouraging commercial centers to combine residential uses and increase the site potential.

- Policy CDD11I: Consider amending the Zoning Ordinance as may be necessary to provide opportunities for such uses as daycare facilities, places of worship, residential care facilities for the elderly, public and private schools, small grocery stores, and other neighborhood-serving uses to be established in appropriate residential neighborhoods, provided that they are located and designed to be compatible with the neighborhood.
- Policy CDD11J: Encourage the construction of Accessory Dwelling Units and Junior Accessory Dwelling Units in single-family residential districts consistent with State law to increase the housing stock and provide more affordable housing options in support of the goals of the Housing Element.
- Policy CDD11K: Provide opportunities to develop multiple-family housing throughout the community, and especially near arterial streets, Downtown, major commercial areas, and neighborhood commercial areas.
- Policy CDD12E: Pursue the establishment of priorities for infrastructure improvements based in part on neighborhood needs for those areas that can most benefit from such improvements given documented infrastructure issues as funding becomes available.
- Policy CDD12G: New development projects should provide gradual transitions between multiple-family and single-family districts and between commercial and residential districts by considering appropriate techniques such as:
    - Density.
    - Intensity transitions.
    - Landscape buffers.
    - Trails.
    - Building placement.
    - Height transitions.
- Policy CDD13A: Strive to ensure commercial lands identified for future development meet the existing and projected market demand for local, community, and regional commercial activity. Consider requiring the following information be provided with proposals to amend the General Plan Diagram:

  Proposed amendments to establish additional retail commercial sites, not initiated by the Planning Commission or the City Council, will be considered appropriate when it is demonstrated that there is a need for such site(s) within a 5-year time horizon. All applicants seeking such amendment to the General Plan Diagram generally of two acres or larger in area should provide a detailed analysis that demonstrates that the approval of the amendment will help to implement goals and policies of the General Plan in two or more of the following areas:

    - Provides needed neighborhood services to an otherwise underserved geographic area in a manner that complements adjacent existing or planned development.

- Accommodates a mix of uses in addition to commercial use at an appropriate location as addressed by the policies of this General Plan.
- Provides opportunities for regional commercial development at an appropriate location and scale in accordance with the policies of this General Plan.
- The parameters of the analysis shall be determined by the Director of Development Services based on the characteristics of each site. Demonstrating only that a particular location would be economically viable for an intended use will not constitute, in and of itself, sufficient grounds for approval of a General Plan amendment.
- Applications to amend the classification of an existing site intended to provide neighborhood services to another use should demonstrate, through an appropriate analysis as determined by the Director of Development Services, that the proposed amendment will further the goals and policies of the General Plan related to future housing and neighborhood or community-level retail and related services.

- Policy CDD13B: Strive to provide sufficient opportunity to satisfy the retail market demand by allowing a range of site sizes and locations, to the extent feasible, while ensuring that a reclassification of land for commercial uses will not:
  - Conflict with policies that encourage multiple family uses in close proximity to retail and service uses and along transportation corridors.
  - Conflict with policies of the Parks, Trails, and Open Space Master Plan.
  - Reduce the supply of multiple-family lands as necessary to satisfy the long-term housing needs for very low-, low-, and moderate-income households in the community.
- Policy CDD13C: Encourage redevelopment of existing commercial properties for regional-scale commercial uses by considering General Plan amendments on sites less than 15 acres, where redevelopment will result in the following, as appropriate:
  - Development that conforms to current development standards and criteria by eliminating most, if not all, nonconforming site conditions on an existing site or center.
  - The assembly of predominantly developed commercial properties, the redevelopment of which will result in a more efficient land use pattern and contemporary site design, such as the use of common driveways, parking fields, landscape, and public areas within the development.
  - Unique site designs, such as multiple stories, mix of uses, unique architecture, and/or similar elements, are encouraged to achieve the intent of this policy, which includes the potential for development of regional commercial uses that will result in significant site upgrades.
  - The use is compatible with surrounding land uses.

- The use does not eliminate potential neighborhood shopping opportunities that reduce vehicle trips or provide neighborhood services and identity.

- Policy CDD13D: Consider, among other factors, the following site characteristics when designating lands for retail commercial uses:
  - Location on an arterial street, preferably at street intersections.
  - Provision of sufficient depth that will allow a cohesive/ clustered development style instead of separate uses developed in a linear fashion along the street.
  - Location within or adjacent to existing or planned concentrations of population.
- Policy CDD13E: Consider requiring overall development plans for all shopping centers and regional centers be approved before allowing the development of individual uses within a planned center. It is desirable that site and building design reflect excellence and quality and be compatible with surrounding development.
- Policy CDD13F: Require regional centers (i.e., those regional commercial districts that include multiple main tenants) to include a mix of uses such as recreation, specialty retail, restaurants, offices, and accommodations for transit services and public uses where appropriate.
- Policy CDD14A: Consider establishing design and performance standards for commercial development to ensure that building and site design are vibrant, convenient, attractive, and are compatible with the surroundings in terms of scale, mass, building patterns, building details, location and visibility of parking, signage, and landscape and enhance views from major streets and other public areas.
- Policy CDD14B: Consider requiring that the design of large commercial projects, shopping centers, and regional scale developments to incorporate plazas, courtyards, and other outdoor gathering places, pedestrian connections and appropriate amenities through parking lots, and pedestrian connections to adjacent residential neighborhoods.
- Policy CDD14C: Strive to facilitate and promote the development of commercial mixed-use centers at strategic locations that are walkable and/or bikeable and well connected by transit to enhance community access.
- Policy CDD14D: Consider designating commercial-zoned land as mixed-use, provided it would not change or impact the existing primary uses to facilitate the following:
  - Provide community facilities for residents with diverse needs.
  - Enhance the existing use.
  - Provide pedestrian and bicycle connections.
  - Provide housing opportunities.

- Policy CDD14E: Consider creating mixed-use codes for use in commercial-use dominated areas that allow for residential units, business support uses, public and private amenities, child-care, restaurants and retail goods, and services that serve the employees of these businesses and the others nearby.
- Policy CDD14F: Consider a neighborhood-informed approach in determining the appropriate mix and form of commercial uses in infill priority areas. Encourage existing commercial centers to add residential and other appropriate uses, taking advantage of available land, services, and parking to enhance community needs.
- Policy CDD21A: Permit the Director, Board of Administrative Review, or Planning Commission to reconcile land use classification boundaries to coincide with legal parcel boundaries and actual flood and slope areas provided that land use compatibility is maintained, that the integrity of each land use district is maintained, and that there will be no adverse impacts of such boundary adjustment. Such actions will not constitute a General Plan amendment.
- Policy CDD21B: Allow the Planning Commission to determine the appropriate mix and density of development on parcels shown on the General Plan Diagram as divided into two or more land use classifications based on policies of the General Plan. Such actions will not constitute a General Plan amendment.

  A routine review of the General Plan is critical if the City is to ensure that the Plan continues to be consistent with community values, social and economic trends, and changing technology. Further, a routine review of the Plan can identify how well the City implements the policies of the Plan. The following policy addresses a review of the General Plan.
- Policy CDD22A: Conduct periodic reviews of the General Plan's goals, policies, and Diagram, as appropriate, to meet the General Plan Annual Progress Requirements of the Government Code Section 65400 that requires staff to "investigate and make recommendations to the legislative body regarding reasonable and practical means for implementing the General Plan or an element of the General Plan, to serve as an effective guide for orderly growth and development, preservation and conservation of open-space land and natural resources, and the efficient expenditure of public funds relating to the subjects addressed in the General Plan." The Planning Commission and the City Council shall receive a staff update on the Implementation of the General Plan periodically, principally focusing on the following:
    - Actions undertaken in the previous year to carry out the implementation programs of the Plan.
    - Satisfy the requirements of Public Resources Code 21081.6 for a mitigating monitoring program in addition to the General Plan Annual Progress Report requirements of the Government Code Section 65400.
    - A briefing on new and continuing funding sources that are available to help implement the General Plan, and the steps the staff is taking to pursue them.

Community Health, Wellness, and Environmental Justice Element

- Policy EJ9B: Consider targeted approaches to the built environment focusing on Master Plans and Strategic Plans that prioritize street improvements, location of new parks, infrastructure and improvement projects, increased sense of safety and enhanced social interaction in areas of the city that historically have been underserved through activities, events, and opportunities that involve engagement and resident feedback to develop improvement strategies.
- Policy EJ9D: Recognize, understand and address the historic displacement of community groups within the City by considering and integrating the perspectives of such groups into land use planning and use planning efforts where appropriate.

Public Facilities and Services

- Policy PF11A: Update and implement as necessary the Airport Master Plan and Comprehensive Land Use Plans adopted for the Redding Regional Airport and Benton Airpark.
- Policy PF11B: Continue to expand aeronautical services and the upgrade of passenger aviation facilities in and around the airport, as funding becomes available.
- Policy PF11C: Identify and pursue the acquisition of additional land area as determined to be necessary for the protection of existing airport operations or anticipated future expansion of airport facilities and services as funding allows.

Transportation Element

- Policy T2A: Support the provision of a connected network of low-stress walk and bikeways to connect major activity centers, including the provision of appropriate low-stress walk and bikeway access to Downtown Redding and the Redding Transit Center by considering implementation of the measures identified below. Low-stress bikeways should generally consist of separated bikeways (Class IV bikeways), sometimes referred to as “protected bicycle lanes”, on arterial or collector streets; bicycle boulevard treatments on local streets; or multi-use paths.
    - Work to identify and prioritize routes for a connected network of low-stress walk and bikeways, identifying barriers to low-stress travel with plans to address them. and Incorporate maps and plans into future updates of the Redding Active Transportation Plan. Pursue funding to construct the network.
    - Work to identify networks for walking and biking to connect with key travel nodes, and activity centers, including transit nodes and strategic growth areas. Consider accessibility to all neighborhoods and housing, striving to ensure access to a connected network of low-stress walk and bikeways within one-half-mile radius to all residents. Key travel nodes and activity nodes include Downtown Redding, Redding Transit Center, transit nodes (where multiple transit lines intersect), schools, City Hall, County Government Center, Shasta

College, Simpson University, major parks and recreation centers, employment centers/business parks, neighborhood commercial nodes and regional commercial centers.

- As funding permits, develop design standards for the low-stress walk and bikeway network that establishes a "kit of parts" set of standards for the three low-stress facility types: 1) separated bike lanes on arterial and collector streets, 2) neighborhood greenways, and 3) off-street paths and trails. An implementation strategy to construct needed improvements to the network should be established.
- Work with the Cities of Anderson and Shasta Lake, and Shasta County to identify low-stress walk, bike routes that connect to the downtown core strategic-growth areas of the cities and towns of Shasta County.
- Support to the extent feasible and as funding allows operation of amenities and programming to enable daily transportation by people biking and walking, including bikeshare services, the Shasta Bike Depot at the Redding Transit Center, secure bike parking, short-term bike parking racks, and similar secure bike parking and e-bike charging stations to meet existing and future needs for the encouragement and education of those who travel via walking or biking.
- Work with the local school districts to develop specific transportation plans associated with schools and the surrounding neighborhoods to address conflicts with; traffic, pedestrian movements, safety during school hours, and bicycle facilities to and from schools. This may include a plan to implement slower speed school zones while children are present and flashing beacons to identify when these school zones are in effect.

- Policy T2B: Support provision of continuous greenbelt trails within and between parks, and along the Sacramento River connecting Redding to the City of Shasta Lake, the City of Anderson, and Cottonwood. Efforts may include:
  - Striving to provide trail access to all residents within a one-half mile radius to all residents and connect trails to all parks which should be equipped with safe and secure bike parking and electric charging stations for bikes and vehicles.
  - Striving to connect trails to all schools, parks, and other large recreation destinations such as the Sacramento River Parkway, Downtown, the Civic Auditorium, Waterworks Park, and the YMCA, as well as civic buildings such as the Courthouse, Library, Shasta County government building on Court Street, and City Hall.
- Policy T4B: Prioritize infill and mixed-use development, and encourage new development in close proximity to existing employment, housing, schools, commercial centers, and other services and amenities as addressed in the Community Development and Design Element.
- Policy T6A: Retain alleys in the Downtown area to create shared spaces for bicycling and walking, and convenient service access, to local businesses.

- Policy T6B: Work to identify and seek funding for motorized and low-stress non-motorized transportation linkages to connect Downtown Redding. Destinations outside of Downtown that would require additional connections include Park Marina, Turtle Bay, and Redding Civic Auditorium areas.

5.11.4 IMPACT DISCUSSION

LU-1:	Implementation of the proposed project would not divide an established community. [Threshold LU-1]

Division of an established community commonly occurs because of development and construction of physical features that constitute a barrier to easy and frequent travel between two or more constituent parts of a community. As part of the proposed project, Redding General Plan's "Planning Area" (PA) would be modified to generally match the boundaries of the City's current SOI. While this would eliminate large areas to the east of the City in the Stillwater Creek basin, the Montgomery Ranch area in the southwest section, the Walker Mine Road area in the northwest section from the PA, and the Churn Creek Bottom area would remain with the PA. Also proposed are several changes to the General Plan "growth areas" to focus on infill development as opposed to outward urban expansion. This action would not constitute a division of an existing community.

The design direction for the General Plan is to improve access and mobility for existing and future residents by providing vehicular connections and non-motorized transportation options. The proposed General Plan includes Policy T4B, in the Transportation Element, which promotes infill and mixed-use development to reduce Vehicle Miles Traveled (VMT), and the policies under Goal CDD14 of the Community Design and Development Element that encourage development that is compatible with surrounding properties and promote accessibility between uses. The policies under Goal CDD11 of the Community Design and Development Element also include provisions to ensure that development is well-located and well-designed to accommodate a mixture of housing types and the policies included under Goal CDD10 also encourage infill development with an emphasis on providing connectivity between new developments.

As noted above, several of the policies would improve not only connectivity but compatibility between existing and future development. The primary goals of the General Plan Update are to focus growth within the current City limits; provide incentives for higher-density development and mixed-use projects, both in Downtown and other key locations; encourage infill and controlling the development and expansion of strip commercial; concentrate the growth of regional shopping facilities (i.e., large discount and "big box" retailers) in relatively few locations; and provide neighborhood shopping near residences to make the neighborhoods more walkable and bikeable.

No aspect of the proposed General Plan Update would divide the existing city. In addition, the updated General Plan includes provisions that directly address land use connectivity, compatibility, and encroachment of new development on existing neighborhoods and land uses. Thus, the General Plan

update would result in no impact regarding division of an established community or land use compatibility issues.

Level of Significance Before Mitigation: Impact LU-1 would be less than significant.

Mitigation Measures

No mitigation measures are required.

LU-2:	Implementation of the proposed project would not conflict with land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. [Threshold LU-2]

Land-Use Plans, Policies, and Regulations

While the proposed 2023-2045 General Plan is the primary planning document for the City of Redding and the proposed update is intended to ensure consistency with federal and state laws, implementation of the 2023-2045 General Plan has the potential to conflict with "land use" plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. For the purposes of this EIR, a "land use" plan is a policy, or regulation that addresses how land is used. The following discusses the proposed 2023-2045 General Plan and its relationship to the land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect as listed in Section 5.11.1.1, Regulatory Framework.

California Housing Element Law

The City of Redding 2020-2028 Housing Element was adopted in 2020. The 2023-2045 General Plan Community Development and Design Element includes policies that require decision makers to support adequate housing in Redding.

- Policy CDD1B: Consider annexation of additional lands under any of the following circumstances. The annexation will result in:
    - A more logical service area boundary.
    - The elimination of an existing County "island."
    - More efficient provision of urban services.

  Modifications to the Primary Growth Area boundary will be considered when the land supply for housing development declines to a ten-year supply or less and/or when appropriate land for any of the following uses is identified:
    - Industrial development.

  - As appropriate, assist in the expansion of community-wide educational services, including, but not limited to Shasta Community College or other public institution(s).
  - Providing additional higher density-residential lands to support the workforce.
  - Providing student housing.
  - Meeting the goals of the Housing Element.

- Policy CDD11E: Facilitate to the extent feasible, the construction of new affordable housing units that are within walking distance to transit, everyday services, schools, and employment centers.
- Policy CDD11H: Strive to create diverse housing options for all income levels in infill priority areas, by encouraging commercial centers to combine residential uses and increase the site potential.
- Policy CDD11J: Encourage the construction of Accessory Dwelling Units and Junior Accessory Dwelling Units in single-family residential districts consistent with State law to increase the housing stock and provide more affordable housing options in support of the goals of the Housing Element.
- Policy CDD11K: Provide opportunities to develop multiple-family housing throughout the community, and especially near arterial streets, Downtown, major commercial areas, and neighborhood commercial areas.

Accordingly, the 2023-2045 General Plan would not conflict with or be inconsistent with State Housing Law resulting in a significant environmental impact.

Shasta County Local Agency Formation Commission

The City of Redding's SOI is regulated by the Shasta County LAFCO, and any proposed jurisdictional boundary changes, including annexations and detachments of territory to and/or from the City, is subject to the Shasta County LAFCO review and approval. The Shasta County LAFCO also must review any contractual service agreements and determine the SOI. Although the City does not propose to annex or de-annex any areas of the SOI as part of the 2023-2045 General Plan, annexation proposals could occur during the buildout horizon of the proposed General Plan. Any annexations must be consistent with the policies of the City's General Plan and all appropriate City development standards and must be processed under an application funded fully by the applicant that includes "pre-zoning" for the subject area and that may also include a development agreement.

The 2023-2045 General Plan Community Development and Design Element includes goals and policies that require local planning and development decisions to consider infrastructure, public safety and other impacts that may result from annexations to the City. The Community Development and Design Element also identifies Primary and Secondary Growth Areas that serve to guide future annexations to areas where services can be more efficiently provided. The following goals and policies would serve to minimize impacts from annexations and support the Shasta County LAFCO mission to encourage and provide for planned, well-ordered, efficient urban development pattern which discourages urban sprawl, preserves open space and prime agricultural lands, and addresses the efficient extension of governmental services:

- Policy CDD1A: Use the General Plan Diagram and the Primary Growth Area and Secondary Growth Area boundaries (Figure CDD-1) to determine potential growth areas within the City's Sphere of Influence. The City shall encourage sustainable development through compact, infill, higher-density development. The need for annexation shall be approved based on the cost associated in annexing areas containing existing substandard development, rural- urban interface conflicts, social, cultural, and economic impacts to existing neighborhoods and infrastructure within the City, and the ability of the City to provide urban services upon annexation.
- Policy CDD1B: Consider annexation of additional lands under any of the following circumstances. The annexation will result in:
    - A more logical service area boundary.
    - The elimination of an existing County "island."
    - More efficient provision of urban services.

  Modifications to the Primary Growth Area boundary will be considered when the land supply for housing development declines to a ten-year supply or less and/or when appropriate land for any the following uses is identified:
    - Industrial development.
    - As appropriate, assist in the expansion of community-wide educational services, including, but not limited to Shasta Community College or other public institution(s).
    - Providing additional higher-density residential lands to support the workforce.
    - Providing student housing.
    - Meeting the goals of the Housing Element.
- Policy CDD1C: Promote densification of the City's urban areas through infill development, where appropriate and before expansion of the City's boundaries through the approval of pre-zoning, prior to annexation. Establish specific findings and criteria for consideration of pre-zoning requests within the Primary and Secondary Growth Areas as depicted in Figure CDD-1.
- Policy CDD1D: Refer all development applications which have the potential to impact land or facilities in the unincorporated area to Shasta County for review and comment.
- Policy CDD1E: Encourage adjacent jurisdictions to adopt development standards consistent with the City's.
- Policy CDD1G: Pursue requiring unincorporated areas be annexed into the City before providing City services except under extraordinary circumstances and in accordance with City Council policy.
- Policy CDD2A: The construction of private development projects should be coordinated with the timing and location of public services. Establish through a combination of development fees and other appropriate funding mechanisms that development pays its fair share of the costs of

upgrading existing facilities and/or constructing/providing new facilities and services as determined by the direct impacts that such development has on these essential services.

- Policy CDD2B: To the extent feasible, new developments shall maintain adequate service levels for existing development while providing for the upgrade/expansion of existing public services, as appropriate.
- Policy CDD2C: Evaluate public-service impacts as part of environmental review for proposed development projects and require applicants to obtain "will-serve" letters or similar commitments from service providers prior to the approval of a discretionary permit or a building permit.
- Policy CDD2D: Work with school districts and public and quasi-public agencies as appropriate in determining the location of needed sites in the planning area for new institutional development and facilities by reserving sites as a condition of development approval in accordance with the State law. Uses on such sites should be designed to complement the neighborhood's character.
- Policy CDD2E: Maintain adequate capacity for urban growth and coordinate with service providers to ensure to the extent feasible that all public utility facilities and services required by a development are available. The City shall undertake assessments of its facilities and services as necessary and may help facilitate creation of assessment districts, where appropriate. Where public facilities are to be provided to a development by a separate water or community services district, the City shall work to coordinate planning activities with such agencies and obtain a “will-serve” letter, to ensure that the development in accordance with this General Plan can be accommodated.

The proposed project acknowledges that the City will follow adopted Shasta County LAFCO policies to review proposed SOI changes and annexation requests. Accordingly, the proposed 2023-2045 General Plan would neither conflict with nor be inconsistent with the Shasta County LAFCO policies, and the impact would be less than significant.

Regional Transportation Plan & Sustainable Communities Strategy for the Shasta Region

While the 2018 RTP/SCS is not intended to override local land use control, it provides guidance to the local agencies such as Redding that focuses on achieving the State’s GHG and VMT reduction goals by prioritizing growth in strategic growth areas. As discussed above under the subheading “California Housing Element Law,” the 2023-2045 General Plan includes goals and policies that promote the provision of housing in the City, particularly in infill areas. Refer to Table 5.8-6, RTP/SCS Consistency Analysis in Section 5.8, Greenhouse Gases, of the EIR for a consistency analysis of the proposed project and the goals in the RTP/SCS. Accordingly, the 2023-2045 General Plan would not conflict with or be inconsistent with the SRTA’s 2018 RTP/SCS.

Redding Airport Plans

Redding contains two public-use airports—the Redding Regional Airport and the Benton Airpark. Land use compatibility with these airports are regulated by the Shasta County ALUC. The Shasta County ALUC adopted a Specific Plan in 1982 for the 8,500-acre planning area surrounding the Redding Regional Airport. The Westside Area Plan/Comprehensive Land Use Plan for Benton Airpark was adopted in 1992 and addresses the airport operations and impacts on adjoining land uses. Development of land and changes in land use around the airport must be consistent with these plans. The 2023-2045 General Plan Public Facilities and Services Element includes several policies that require local planning and development decisions to consider impacts from development near the airport:

- Policy PF11A: Update and implement as necessary and appropriate the Airport Master Plan and Comprehensive Land Use Plans adopted for the Redding Regional Airport and Benton Airpark.
- Policy PF11B: Continue to expand aeronautical services and the upgrade of passenger aviation facilities in and around the airport, as funding becomes available.
- Policy PF11C: Identify and pursue the acquisition of additional land area as determined to be necessary for the protection of existing airport operations or anticipated future expansion of airport facilities and service as funding allows.

The 2023-2045 General Plan does not propose any changes to the current land uses in the Planning Area and land uses within the influence areas of the airports would continue to comply with the adopted comprehensive land use plans and other applicable airport plans. Therefore, adoption and implementation of the proposed General Plan Update would not conflict with the Redding airport plans.

Summary

In summary, the proposed project is the primary planning document for the City of Redding. The proposed General Plan Update is intended to ensure consistency between the General Plan and federal, state, and local laws. As described above, the proposed project would not conflict with any relevant planning documents and contains policies that would support the efforts of these documents. As such, impacts are less than significant.

Level of Significance Before Mitigation: Impact LU-2 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.11.5 CUMULATIVE IMPACTS

LU-3	The proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in less-than-significant cumulative impacts with respect to land use and planning. [Threshold LU-3]

The geographic context for the cumulative land use and planning effects occurs from potential future development under the proposed project combined with impacts from the projected growth in the rest of Shasta County and the surrounding region, as forecast by SRTA.

The proposed project would not result in any changes to the City's current land use designations and therefore would not divide an established community or conflict with established plans, policies, and regulations, in or outside the City of Redding, adopted for the purpose of avoiding or mitigating an environmental effect. Potential future development that may occur from implementation of the proposed General Plan would not create substantial land use impacts. Development in surrounding communities would also be subject to federal, state, and local policies and plans governing land use. Therefore, the cumulative impacts to land use and planning would be less than significant.

Level of Significance Before Mitigation: Impact LU-3 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.11.6 REFERENCES

Office of Planning and Research (OPR). 1992. Westside Area Plan Environmental Impact Area Environmental Impact Report (SCH: 1992023021). https://ceqanet.opr.ca.gov/1992023021/2

Redding, City of. 2022, April. Downtown Redding Specific Plan. https://www.cityofredding.org/home/showpublisheddocument/5529/637932394784630000

_____. 2021a, March 23. Bechelli Bonnyview Specific Plan. https://www.cityofredding.org/home/showpublisheddocument/26289/637673027601100000

_____. 2021b. Capital Improvement Plan 2021-2026. https://www.cityofredding.org/home/showpublisheddocument/26734/637763011006830000

_____. 2006, September 19. Oasis Specific Plan. https://www.cityofredding.org/home/showpublisheddocument/5527/635791272229630000

_____. 2000, October 3. General Plan 2000-2020, Community Development and Design Element. https://www.cityofredding.org/home/showpublisheddocument/5498/635791167118600000

_____. 1992, December 15 (Amended). Redding Riverfront Specific Plan. https://www.cityofredding.org/home/showpublisheddocument/9850/636149105579170000

_____. 1982, October 5. Specific Plan for the Redding Municipal Airport. https://www.shastacounty.gov/sites/default/files/fileattachments/planning/page/3045/sp2-82_airport_specific_plan.pdf

_____. 2001. Parkview Neighborhood Strategic Revitalization Plan. https://www.cityofredding.org/home/showpublisheddocument/9072/636027230637370000

Shasta Local Agency Formation Commission. 2022, December 2. City of Redding Municipal Services Review & Sphere of Influence Update. https://www.shastalafco.org/images/Local.Agencies/City_of_Redding_MSR_SOI_Update_Commission_Approved_December-2022.pdf

Shasta Regional Transportation Agency. 2018, October 9. Regional Transportation Plan & Sustainable Communities Strategy for the Shasta Region. https://www.srta.ca.gov/DocumentCenter/View/4285/2018-Regional-Transportation-Plan--Sustainable-Communities-Strategy-adopted-Oct-9-2018?bidId=

This page intentionally left blank.

5.12 MINERAL RESOURCES

This chapter describes the regulatory framework and existing conditions in the Planning Area related to mineral resources, and the potential impacts of the proposed project on mineral resources.

5.12.1 ENVIRONMENTAL SETTING

5.12.1.1 REGULATORY FRAMEWORK

State Regulations

Surface Mining and Reclamation Act (SMARA)

California's Surface Mining and Reclamation Act of 1975, referred to as SMARA, was enacted to address the need for a continuing supply of mineral resources, and to prevent or minimize the negative impacts of surface mining to public health, property, and the environment. Requirements for SMARA are codified under PRC §§ 2710 et. seq. Under state law, all mining operations are required to obtain permits prior to commencing operations and abide by local and state operating requirements. Mining operations are also required to have appropriate reclamation plans in place, provide financial assurances, and abide by state and local environmental laws.

Classification

The California Geological Survey Mineral Resources Project provides information about California's non-fuel mineral resources. The Mineral Resources Project classifies lands throughout the State that contain regionally significant mineral resources per SMARA. Non-fuel mineral resources include metals such as gold, silver, iron, and copper; industrial metals such as boron compounds, rare-earth elements, clays, limestone, gypsum, salt and dimension stone; and construction aggregate including sand, gravel, and crushed stone. Development generally results in a demand for minerals, especially construction aggregate. Urban preemption of prime deposits and conflicts between mining and other uses throughout California led to passage of the SMARA which requires all cities and counties to incorporate in their General Plans the mapped designations approved by the State Mining and Geology Board.

The classification process involves the determination of Production-Consumption (P-C) Region boundaries, based on identification of active aggregate operations (Production) and the market area served (Consumption). The P-C regional boundaries are modified to include only those portions of the region that are urbanized or urbanizing and are classified for their aggregate content. An aggregate appraisal further evaluates the presence or absence of significant sand, gravel, or stone deposits that are suitable sources of aggregate. The classification of these mineral resources is a joint effort of the state and the local governments. It is based on geologic factors and requires that the State Geologist classify the mineral resources area as one of the four Mineral Resource Zones (MRZs), described below.

- MRZ-1: A Mineral Resource Zone where adequate information indicates that no significant mineral deposits are present or likely to be present.
- MRZ-2: A Mineral Resource Zone where adequate information indicates that significant mineral deposits are present, or a likelihood of their presence and development should be controlled.
- MRZ-3: A Mineral Resource Zone where the significance of mineral deposits cannot be determined from the available data.
- MRZ-4: A Mineral Resource Zone where there is insufficient data to assign any other MRZ designation.

As part of the classification process, an analysis of site-specific conditions is utilized to calculate the total volume of aggregates within individually identified Resource Sectors. Resource Sectors are those MRZ-2 areas identified as having regional or statewide significance. Anticipated aggregate demand in the P-C Regions for the next 50 years is then estimated and compared to the total volume of aggregate reserves identified within the P-C Region.

Designation

Once a classification report has been completed, the State Mining and Geology Board may choose, based on recommendations from the State Geologist, to proceed with the second step in SMARA's mineral land identification process, designation of those mineral deposits that are of regional or statewide significance. In contrast to classifications, which inventories mineral deposits without regard to land use or land ownership, the purpose of a designation is to identify those deposits that are potentially available from a land-use perspective and are of prime importance in meeting future needs of the region or State.

Local Regulations

2000-2020 Redding General Plan

The following policies are included in the existing General Plan regarding mineral resources. The numbering is from the existing General Plan and therefore may not be consecutive.

Natural Resources Element

- Goal NR13: Ensure an adequate supply of mineral resources to meet long-term regional needs. Protect critical mineral-resource areas from encroachment by incompatible land uses.
    - Policy NR13A: Focus mineral resource-protection efforts in areas identified with a "Critical Mineral Resource Overlay" on the General Plan Diagram. Remove the "Critical Mineral Resource Overlay" when the mineral resource is exhausted and reclamation completed.
    - Policy NR13B: Maintain current information regarding the status and location of mineral deposits within the Planning Area.

- Policy NR13C: Prohibit incompatible development in or near areas designated "Critical Mineral Resource Overlay." Residential uses within overlay areas should be limited to 1.0 dwelling unit per 40 acres.
- Policy NR13D: Require a use permit to establish new mining operations. The use permit shall contain conditions necessary to protect the public health, safety, and welfare; to minimize impacts on adjacent land uses; and to mitigate other potential adverse environmental impacts.
- Policy HS1A: Continue to require that new structures and alterations to existing structures comply with the seismic safety requirements of the Uniform Building Code (UBC); adopt updated provisions of the UBC related to seismic safety as they become available.
- Policy NR13E: Outside Critical Mineral Resource Overlay areas (but within areas classified as Mineral Resource Zones MRZ2a and/or MRZ2b by the State Division of Mines and Geology), mining may be permitted in the in-stream, floodplain, or gravel-bar areas of a river or creek provided removal of sand and gravel is:

    1. Conducted during a declared civil or hazardous material emergency or natural disaster to relieve or correct potential hazards to the public health, safety, or welfare caused by such emergency or disaster.
    2. For removal of dredger tailings for reclamation purposes only.
    3. To protect a public structure, such as a bridge, when it is determined to be necessary by the public entity responsible for said structure.
    4. To remove a buildup of sand and gravel to maintain the channel capacity to prevent flooding.

    For Items 2, 3, and 4 above, the use permit and reclamation plan for mining of said areas shall be based on a stream-management program, prepared by qualified professionals in appropriate disciplines, which includes data and analysis to show that:

    - There will be no significant adverse impact on in-stream habitat; riparian habitat; wetlands; or rare, threatened, or endangered species of fish, wildlife, or plants.
    - There will be no significant adverse impact on existing structures, including bridges or levees.
    - There will be no significant increase in bank erosion, deposition, or flooding.
    - There will be no significant adverse impacts to surrounding properties, including, but not limited to, noise, visual impacts, dust, and similar impacts.

5.12.1.2 EXISTING CONDITIONS

Mineral Resource Zones

The City of Redding is mapped within MRZ-2a, areas underlain by mineral deposits where geologic data indicates that significant measured or indicated resources are present, MRZ-2b, areas underlain by mineral deposits where geologic information indicates that significant inferred resources are present, and MRZ-3, where the significance of mineral deposits cannot be determined from available data (CGS 1997).

Also included within the city are previously mined-out areas that were excluded from mineral land classification. Redding is in the Shasta County P-C Region, which spans Shasta County and encompasses an estimated 49 million tons of permitted aggregate reserves (CGS 2018). The projected 50-year aggregate demand is 82 million tons; thus, permitted resources are roughly 60 percent of the projected 50-year demand (CGS 2018). Aggregate resource areas within the city are centered along the Sacramento River and Clear Creek. Ten alluvial aggregate mines were identified within the city (CGS 1997).

Areas classified as MRZ-2a and 2b, where mineral-extraction activities are considered feasible, have been designated with a "Critical Mineral Resources Overlay". As shown in Figure 5.12-1, *Locally Designated Mineral Resources in Redding.,* critical mineral resources areas in the City of Redding are located in the southern portion of the Planning Area in the Clear Creek community.

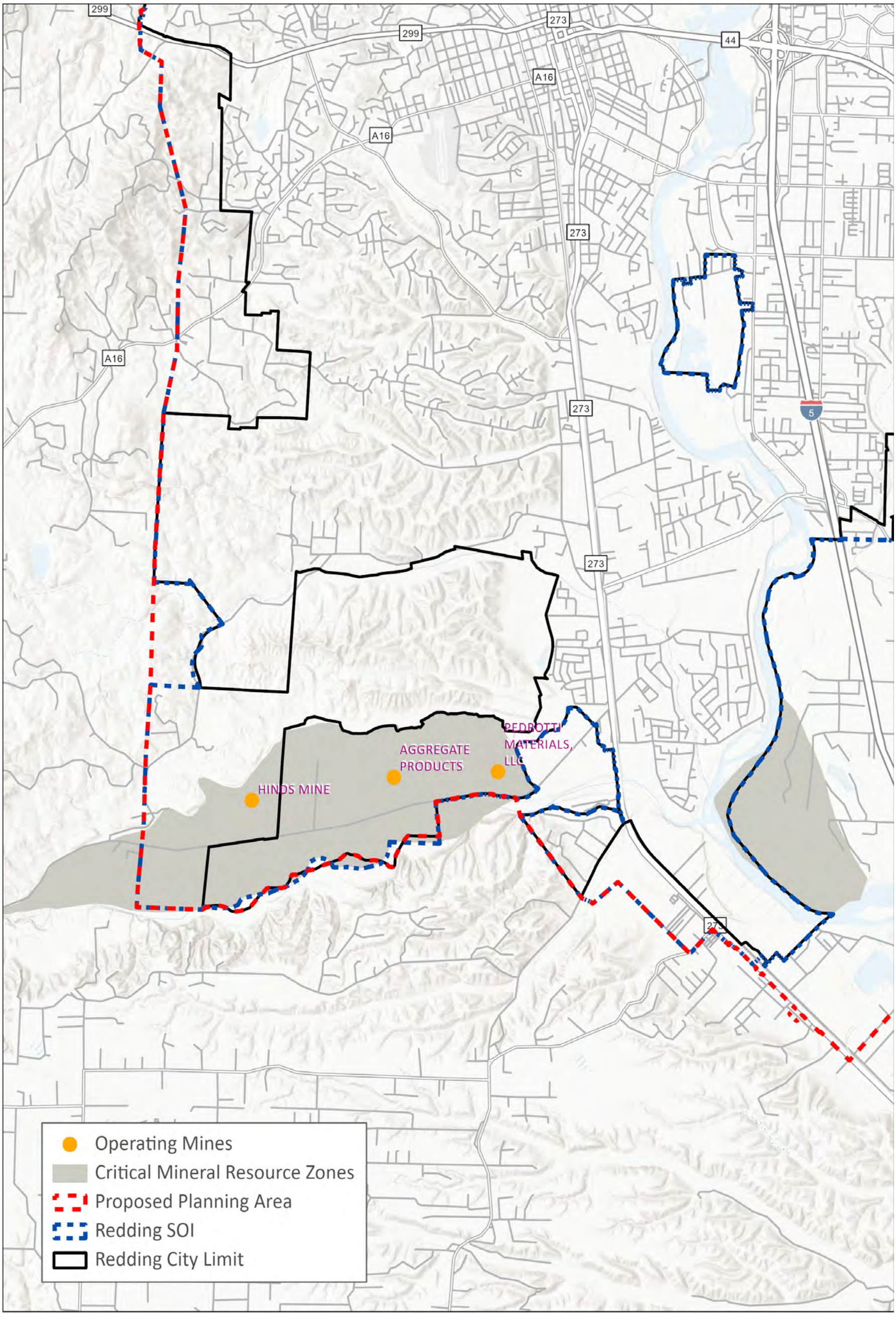
Active and Inactive Mines

Two active mines are mapped in the Planning Area according to the California Office of Mine Reclamation's "Mines Online" website. Aggregate Products, a tailings processing facility, is mined for sand and gravel (DOC 2022). Pedrotti Materials, LLC, an open pit quarry, is mined for sand and gravel (DOC 2022). Both facilities are located along Clear Creek.

Oil and Gas Fields and Drilling Operations

Oil fields and drilling operations occur in the Sacramento Valley, but Redding is not known to lie above an oil or gas field. The closest gas field to Redding is the abandoned Red Bank Creek Gas Field located about 24 miles south of the city.

5.12 MINERAL RESOURCES



Source: Generated using ArcMap, 2023; City of Redding GIS, 2023; California Department of Conservation's Division of Mine Reclamation, 2023

0 2
Scale (Miles)

Figure 5.12-1
Locally Designated Mineral Resource Areas in Redding

This page intentionally left blank.

5.12.2 THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the State CEQA Guidelines, the proposed Project would result in a significant mineral resources impact if it would:

MIN-1 Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.

MIN-2 Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

MIN-3 In combination with past, present, and reasonably foreseeable projects, result in cumulative impacts with respect to mineral resources.

5.12.3 PROPOSED GENERAL PLAN POLICIES

The following are relevant policies of the Redding General Plan Update, which may contribute to the protection of mineral resources as a result of implementation of the proposed project.

Natural Resources Element

- **Policy NR10A:** Focus mineral resource-protection efforts in areas identified with a "Critical Mineral Resource Overlay" on the General Plan Diagram. Remove the "Critical Mineral Resource Overlay" within a reasonable time after the mineral resource is exhausted and reclamation is complete.
- **Policy NR10B:** Maintain current information regarding the status and location of mineral deposits within the Planning Area as information becomes available.
- **Policy NR10C:** Strictly limit incompatible development in or near areas designated "Critical Mineral Resource Overlay." Residential uses within overlay areas should be limited to one (1) dwelling unit per 40 acres.
- **Policy NR10D:** Require a use permit or other appropriate review to establish new mining operations. The use permit shall contain conditions necessary to protect the public health, safety, and welfare; to minimize impacts on adjacent land uses; and to mitigate other potential adverse environmental impacts.
- **Policy NR10E:** Outside Critical Mineral Resource Overlay areas (but within areas classified as Mineral Resource Zones MRZ2a and/or MRZ2b by the State Division of Mines and Geology), mining may be permitted in the in-stream, floodplain, or gravel-bar areas of a river or creek provided removal of sand and gravel is:

- Conducted during a declared civil or hazardous material emergency or natural disaster to relieve or correct potential hazards to the public health, safety, or welfare caused by such emergency or disaster.
- For removal of dredger tailings for reclamation purposes only.
- To protect a public structure, such as a bridge, when it is determined to be necessary by the public entity responsible for said structure.
- To remove a buildup of sand and gravel to maintain the channel capacity to prevent flooding.
- For Items 2, 3, and 4 above, the use permit and reclamation plan for mining of said areas shall be based on a stream-management program, prepared by qualified professionals in appropriate disciplines, which includes data and analysis to show that:
  - There will be no significant adverse impact on in-stream habitat; riparian habitat; wetlands; or rare, threatened, or endangered species of fish, wildlife, or plants, or cultural resources.
  - There will be no significant adverse impact on existing structures, including bridges or levees.
  - There will be no significant increase in bank erosion, deposition, or flooding.
  - There will be no significant adverse impacts to surrounding properties, including, but not limited to, noise, visual impacts, dust, and similar impacts.

5.12.4 IMPACT DISCUSSION

MIN-1:	The proposed project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state or result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan. [MIN-1 and MIN-2]

Future development allowed under the General Plan Update would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state. Areas of identified mineral resource significance are classified as MRZ-2a or MRZ-2b, as shown on Figure 5.12-1. Although most areas along the Sacramento River are classified as MRZ-2a or MRZ-2b, the presence of existing incompatible development will preclude mineral extraction activities in most locations. Furthermore, the City prioritizes mineral resource protection efforts in areas along Clear Creek and the Sacramento River in the vicinity of Churn Creek. Areas classified as MRZ-2a or MRZ-2b are included as part of the City's Mineral Resources Overlay District, as shown in Figure 5.12-1, and are areas where mineral extraction activities are considered feasible. The purpose of this overlay district is to provide sites for mineral

resource extraction activities in the overlay area, ensure that appropriate and compatible uses are allowed, ensure that there is an ultimate reuse plan, prevent adjacent uses from being impacted, and consider protection of mineral resources in the development process.

The Natural Resources Element of the General Plan includes the following policies that address mineral resources impacts:

- Policy NR10A: Focus mineral resource-protection efforts in areas identified with a "Critical Mineral Resource Overlay" on the General Plan Diagram. Remove the "Critical Mineral Resource Overlay" within a reasonable time after the mineral resource is exhausted and reclamation is complete.
- Policy NR10B: Maintain current information regarding the status and location of mineral deposits within the Planning Area as information becomes available.
- Policy NR10C: Strictly limit incompatible development in or near areas designated "Critical Mineral Resource Overlay." Residential uses within overlay areas should be limited to one (1) dwelling unit per 40 acres.
- Policy NR10D: Require a use permit or other appropriate review to establish new mining operations. The use permit should contains necessary to protect the public health, safety, and welfare; to minimize impacts on adjacent land uses; and to mitigate other potential adverse environmental impacts.
- Policy NR10E: Outside Critical Mineral Resource Overlay areas (but within areas classified as Mineral Resource Zones MRZ2a and/or MRZ2b by the State Division of Mines and Geology), mining may be permitted in the in-stream, floodplain, or gravel-bar areas of a river or creek provided removal of sand and gravel is:
    - Conducted during a declared civil or hazardous material emergency or natural disaster to relieve or correct potential hazards to the public health, safety, or welfare caused by such emergency or disaster.
    - For removal of dredger tailings for reclamation purposes only.
    - To protect a public structure, such as a bridge, when it is determined to be necessary by the public entity responsible for said structure.
    - To remove a buildup of sand and gravel to maintain the channel capacity to prevent flooding.
    - For Items 2, 3, and 4 above, the use permit and reclamation plan for mining of said areas shall be based on a stream-management program, prepared by qualified professionals in appropriate disciplines, which includes data and analysis to show that:
        - There will be no significant adverse impact on in-stream habitat; riparian habitat; wetlands; or rare, threatened, or endangered species of fish, wildlife, or plants.

- There will be no significant adverse impact on existing structures, including bridges or levees.
- There will be no significant increase in bank erosion, deposition, or flooding.
- There will be no significant adverse impacts to surrounding properties, including, but not limited to, noise, visual impacts, dust, and similar impacts.

The City's Mineral Resources Overlay District in combination with the proposed General Plan policies discussed above would ensure that potential mineral resource impacts would be less than significant.

Level of Significance Before Mitigation: MIN-1 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.12.1 CUMULATIVE IMPACTS

MIN-2	The proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in less-than-significant cumulative impacts with respect to mineral resources. [MIN-3]

Development outside of Redding could occur in areas with significant mineral resources, and preclude potential future mining by rendering the resource inaccessible or by establishing urban uses that would be incompatible with mining operation. However, compliance with state law would ensure that the vast majority of the region's potential mineral deposits are expected to remain available for potential mining into the foreseeable future, should site-specific evaluations determine them to be significant and economic.

Overall, development in the region would not contribute to an overall loss in the availability of a known mineral resource that would be of value to the region or State. Similarly, the proposed project, in combination with cumulative projects, would not result in the loss in availability of a known mineral resources. Therefore, the cumulative mineral resource impact would be less than significant.

Level of Significance Before Mitigation: MIN-2 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.12.2 REFERENCES

California Department of Conservation Division of Mine Reclamation (DOC). 2022. Mines Online (website). https://maps.conservation.ca.gov/mol/index.html, accessed January 4, 2023.

California Geological Survey (CGS). 1997. Mineral Land Classification of Alluvial Sand and Gravel, Crushed Stone, Volcanic Cinders, Limestone, and Diatomite within Shasta County, California, Open-File Report 97-03.

_____. 2018. Aggregate Sustainability in California, Fifty Year Aggregate Demand Compared to Fifty Year Aggregate Reserves. https://www.conservation.ca.gov/cgs/PublishingImages/Publications/MS_52_California_Aggregates_Map_201807_preview.jpg, accessed January 4, 2023.

This page intentionally left blank.

5.13 NOISE

This section describes the potential noise and vibration impacts due to implementation of the 2023-2045 General Plan Update. This section describes the regulatory framework and existing conditions, identifies criteria used to determine impact significance, provides an analysis of the potential noise and vibration impacts, and identifies General Plan policies and feasible mitigation measures that could minimize any potentially significant impacts. Noise monitoring and modeling data are included as Appendix 5.13-1, *Noise Data*, of this Draft EIR.

5.13.1 ENVIRONMENTAL SETTING

5.13.1.10 REGULATORY FRAMEWORK

To limit population exposure to physically and/or psychologically damaging as well as intrusive noise levels, the federal government, the State of California, various county governments, and most municipalities in the State have established standards and ordinances to control noise.

Federal Regulations

United States Department of Housing and Urban Development

The United States Department of Housing and Urban Development (HUD) has set a goal of 65 dBA L_{dn} as a desirable maximum exterior standard for residential units developed under HUD funding. (This level is also generally accepted by the State of California.) While HUD does not specify acceptable interior noise levels, standard construction of residential dwellings typically provides more than 20 dBA of attenuation with the windows closed. Based on this premise, the interior L_{dn} should not exceed 45 dBA.

Highway Administration

Proposed federal or federal-aid highway construction projects at a new location, or the physical alteration of an existing highway that significantly changes either the horizontal or vertical alignment or increases the number of through-traffic lanes, requires an assessment of noise and consideration of noise abatement pursuant to Code of Federal Regulations Title 23, Part 772, "Procedures for Abatement of Highway Traffic Noise and Construction Noise." The Federal Highway Administration (FHWA) has adopted noise abatement criteria (NAC) for sensitive receivers such as picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals—when "worst-hour" noise levels approach or exceed 67 dBA L_{eq}. The California Department of Transportation (Caltrans) has further defined "approaching" the NAC to be 1 dBA below the NAC for noise sensitive receivers (e.g., 66 dBA L_{eq} is considered approaching the NAC) (Caltrans 2020).

Federal Transit Administration

The City of Redding does not have quantified construction noise or vibration limits. To determine significant for construction related vibration and noise impacts, this analysis references the Federal Transit Administration's (FTA) Transit Noise and Vibration Impact Assessment Manual. It is important to note that this manual is not a federal regulation or requirement but a guidance manual developed by a federal agency.

A "perceptible vibration", as stated in the Municipal Code, refers to human perception and is also referred to as vibration annoyance. The human reaction to various levels of vibration is highly subjective and varies from person to person. Table 5.13-1, *FTA Groundborne Vibration Criteria Human Annoyance*, shows the FTA's vibration criteria to evaluate vibration-related annoyance due to resonances of the structural components of a building. These criteria are based on extensive research that suggests humans are sensitive to vibration velocities in the range of 8 to 80 Hz. For construction activities, presumed to occur only during daytime hours, the criteria would be 78 VdB at residential land uses.

TABLE 5.13-1 FTA GROUNDBORNE VIBRATION CRITERIA: HUMAN ANNOYANCE

Land Use Category	Vibration Velocity Level (VdB)		
	Frequent Events[1]	Occasional Events[2]	Infrequent Events[3]
Category 1: Buildings where vibration would interfere with interior operations.	65[4]	65[4]	65[4]
Category 2: Residences and buildings where people normally sleep.	72	75	80
Category 3: Institutional land uses with primarily daytime use.	75	78	83

Notes:
[1] More than 70 events per day.
[2] 30 to 70 events per day.
[3] Fewer than 30 events per day.
[4] This criterion limit is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. For equipment that is more sensitive, a Detailed Vibration Analysis must be performed.
Source: Federal Transit Administration (FTA) 2018. *Transit Noise and Vibration Impact Assessment Manual*.

Vibration-Related Architectural Damage

Various types of buildings are sensitive to vibration, and these guidelines are often used to evaluate vibration impacts during construction. The construction-focused guidelines identify that an impact would occur if construction activities generate vibration that is strong enough to (a) physically damage buildings or (b) cause undue annoyance at sensitive receptors.

The level at which groundborne vibration is strong enough to cause architectural damage has not been determined conclusively. However, structures amplify groundborne vibration, and wood-frame buildings such as typical residential structures are more affected by ground vibration than heavier buildings. The most conservative estimates are reflected in the FTA standards, shown in Table 5.13-2, *FTA Groundborne*

Vibration Criteria: Architectural Damage. The threshold of 0.2 inches/second PPV will be applied to typical residential structures surrounding the project site.

TABLE 5.13-2 FTA GROUNDBORNE VIBRATION CRITERIA: ARCHITECTURAL DAMAGE

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

Note: PPV = peak particle velocity
Source: Federal Transit Administration (FTA) 2018. *Transit Noise and Vibration Impact Assessment Manual*.

State Regulations

California Building Code

The California Building Code (CBC), Title 24, Part 2, Volume 1, Chapter 12, Section 1207.11.2, Allowable Interior Noise Levels, requires that interior noise levels attributable to exterior sources shall not exceed 45 dB in any habitable room. The noise metric is evaluated as either the day-night average sound level (L_{dn}) or the community noise equivalent level (CNEL), consistent with the noise element of the local general plan.

Residential structures within the noise contours identified above require an acoustical analysis showing that the structure has been designed to limit intruding noise in the prescribed allowable levels. To comply with these regulations, applicants of new the residential projects are required to submit an acoustical report in areas where noise and land use compatibility is a concern. The report is required to analyze exterior noise sources affecting the proposed dwelling site, predicted noise spectra at the exterior of the proposed dwelling structure considering present and future land usage, basis for the prediction (measure or obtained from published data), noise attenuation measures to be applied, and an analysis of the noise insulation effectiveness of the proposed construction showing that the prescribed interior noise level requirements are met. If interior allowable noise levels are met by requiring that windows be inoperable or closed, the design for the structure must also specify the means that will be employed to provide ventilation and cooling, if necessary, to provide a habitable interior environment.

The State of California's noise insulation standards for non-residential uses are codified in the California Code of Regulations, Title 24, Building Standards Administrative Code, Part 11, California Green Building Standards Code (CALGreen). CALGreen noise standards are applied to new or renovation construction projects in California to control interior noise levels resulting from exterior noise sources. Proposed projects may use either the perspective method (Section 5.507.4.1) or the performance method (Section 5.507.4.2) to show compliance. Under the prescriptive method, a project must demonstrate transmission loss ratings for the wall and roof-ceiling assemblies and exterior windows when located within a noise environment of

65 dBA CNEL or higher. Under the performance method, a project must demonstrate that interior noise levels do not exceed 50 dBA $L_{eq(1\ hr)}$.

General Plan Guidelines

The State of California, through its General Plan Guidelines, discusses how ambient noise should influence land use and development decisions and includes a table of normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable uses at difference noise levels expressed in CNEL or L_{dn}. A conditionally acceptable analysis designation implies new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements for each land use is made and needed noise insulation features are incorporated in the design. By comparison, a normally acceptable designation indicates that standard construction can occur with no special noise reduction requirements. Local municipalities adopt these compatibility standards as part of their General Plan and modify them as appropriate for their local environmental setting.

Local Regulations

2000-2020 Redding General Plan

- Goal N1: Protect residents from the harmful and annoying effects of exposure to excessive noise.
    - Policy N1A: Monitor and update periodically the community's ambient and fixed noise levels.
    - Policy N1B: Adopt a noise ordinance to address the following:
        - Permitted days and hours for nonemergency construction activities (AM starting time to PM cease of operations).
        - Permitted days and hours of operation for noise-generating commercial and industrial outdoor equipment (leaf blowers, parking lot sweepers, etc.) on sites located adjacentto residential areas.
        - Regulations pertaining to the use of "jake" brakes within the City limits and excessivenoise created by vehicular stereo systems.
        - Standards that establish limits for peak noise emissions measured from the property line of the noise-creating use. These standards should be geared primarily toward commercial and industrial uses.
        - Regulations that are tied to criteria such as those outlined in Table 5-1 of the Noise Element.
        - Guidelines for noise measurement andmonitoring activities.
        - Enforcement procedures.

- **Policy N1C:** Require acoustical analysis for new development in locations where exterior and/or interior noise levels will likely exceed the City's noise standards to determine appropriate mitigation measures. (This analysis must comply with the guideline identified in Table 5.13-3, *Requirements for an Acoustical Analysis*)
- **Policy N1D**: Encourage the use of site planning and building materials/design as primary methods of noise-attenuation.
- **Policy N1E**: Prepare a Noise Attenuation Manual, which illustrates preferred noise mitigation techniques.
- **Policy N1F**: Discourage use of noise barriers and walls constructed exclusively for noise-attenuationpurposes, where possible. In instances wherenoise barriers cannot be avoided, require the use of site planning and building material/design features in conjunction with barriers to mitigate visual impacts and reducethe size of barriers.

TABLE 5.13-3 REQUIREMENTS FOR AN ACOUSTICAL ANALYSIS

	An acoustical analysis prepared pursuant to the Noise Element shall:
A	Be the financial responsibility of the applicant.
B	Be prepared by a qualified person experienced in the fields of noise assessment and architectural acoustics.
C	Estimate the noise levels at affected receivers and the location of existing and projected (20-year) noise contours. Compare those values to the adopted policies of the Noise Element for both interior and exterior exposure levels.
D	Recommend appropriate mitigation to achieve compliance with the adopted policies and standards of the Noise Element, giving preference to site planning and building design over mitigation noise source in question consists of intermittent single events, the report must address the effects of maximum noise levels in sleeping rooms in terms of possible sleep disturbance.
E	Estimate noise exposure after the prescribed mitigation measures have been implemented.

Note:

Source: Redding Municipal Code Section 18.40.100, Noise Standards.

City of Redding Municipal Code

Exterior Noise

The City's noise regulations are implemented and enforced through the Redding Municipal Code, Section 18.40.100, Noise Standards. For noise generated on one property affecting an adjacent use, the City of Redding limits the amount of noise crossing the boundary between the two uses. For regulated on-site sources of noise generation, the Redding noise ordinance prescribes limits that are considered an acceptable exposure for residential or commercial uses in proximity to regulated noise sources. The L_{eq} metric used in the Redding noise ordinance is the level exceeded in an hour. Nighttime noise level limits are reduced by 10 dB to reflect the increased sensitivity to noise occurring during that time period. The City's noise standards for noise levels from a regulated source crossing into an adjacent property are shown in Table 5.13-4, *Redding Exterior Noise Standards*.

TABLE 5.13-4 REDDING EXTERIOR NOISE STANDARDS

Noise Zone	Noise Level, L_{eq}-1hr dBA	Time Period
Residential- daytime	55	7:00 AM – 10:00 PM
Residential- nighttime	45	10:00 PM – 7:00 AM
Office/Commercial- daytime	65	7:00 AM – 10:00 PM
Office/Commercial- nighttime	55	10:00 PM – 7:00 AM

Source: Redding Municipal Code Section 18.40.100, Noise Standards

Construction Noise

Section 18.40.100(F), Prohibited Acts, of the Municipal Code provides prohibited times to loading/unloading and construction noise within the city. Loading, unloading, opening, closing or other handling of boxes, crates, containers, building materials or similar objects are prohibited between the hours of 10:00 PM and 7:00 AM in such a manner as to cause a noise disturbance across a residential real property line. Operation of any tools or equipment used in construction or demolition work in or within 500 feet of a residential district are prohibited during the following times:

- May 15 through September 15: Between the weekday hours of 7:00 PM and 6:00 AM and weekends and holidays between 8:00 PM. and 9:00 AM.
- September 16 through May 14: Between the weekday hours of 7:00 PM and 7:00 AM and weekends and holidays between 8:00 PM and 9:00 AM.

Section 18.40.100(F)(3), Domestic Power Tools and Equipment, states that the operation or permitting the operation of any mechanically powered saw, lawn or garden tool or similar outdoor tool between 10:00 PM and 7:00 AM. on weekdays (or 9:00 PM. and 8:00 AM. on weekends and legal holidays) so as to create a noise disturbance across a residential or commercial real property line, is prohibited.

Exemptions

Section 18.40.100(G), Emergency Exemptions, exempts to following from the noise ordinance:

- The emission of sound for the purpose of alerting persons to the existence of an emergency;
- The emission of sound in the performance of emergency work.

Section 18.40.100(H), Miscellaneous Exemptions, exempts to following from the noise ordinance:

- Warning Devices. Warning devices necessary for the protection of the public safety, such as police, fire and ambulance sirens, shall be exempted from the provisions of this chapter.

- Outdoor Activities. The provisions of this chapter shall not apply to occasional outdoor gatherings, public dances, shows, and sporting and entertainment events provided that such events are conducted pursuant to a permit or license issued by the city relative to the staging of such events.

- Churches and Other Similar Organizations. Any churches or other similar organization which use unamplified bells, chimes or other similar devices are exempt from the provisions of this chapter so long as the church or other similar organizations play such between the time period of 7:00 AM and 10:00 PM and the playing period does not exceed thirty minutes in any one hour.

- Municipal Solid Waste Collection. Collection of solid waste, vegetative waste and recyclable materials by the city of Redding shall be exempt from the provisions of this chapter.

- Public Works Construction Projects. Street, utility and similar construction projects undertaken by or under contract to the city of Redding, county of Shasta or state of California or a public utility regulated by the California Public Utilities Commission.

- Public Utility Facilities. Facilities including, but not limited to, sixty-cycle electric power transformers and related equipment, sewer lift stations, municipal wells and pumping stations.

- Federal and State Preempted Activities. Any other activity shall be exempt from the provisions of this chapter to the extent regulation thereof has been preempted by state or federal laws.

Citywide Performance Standards

Section 18.40.110, Performance Standards-Citywide, provides the following additional noise and vibration standards.

- Noise. No use shall create noise levels which exceed the standards of Section 18.40.100 of this chapter.
    - Director May Require Acoustic Study. For new uses that, in the opinion of the director, may not meet the standards of the noise element, the director may require that an acoustical analysis be prepared. The analysis shall, at a minimum, conform to the following standards:
        - Analysis shall be prepared by a qualified person experienced in the fields of environmental noise assessment and architectural acoustics.
        - Noise levels shall be documented with sufficient sampling periods and locations to adequately describe local noise conditions and noise sources.
        - Existing and projected noise levels shall be estimated in terms of L_{eq} and L_{dn} or CNEL. Levels shall be compared to the existing ambient noise levels.
        - Mitigation shall be recommended, giving preference to site planning and design rather than noise barriers, where feasible.

- Noise exposure after the prescribed mitigation measures have been implemented shall be estimated.

- Noise Attenuation Measures. The approving authority may require the incorporation into a project of any noise-attenuation measures deemed necessary to ensure that noise standards are not exceeded, including, but not limited to, noise walls exceeding maximum height limits and minimum setbacks of the zoning district.
- Vibration. No use, activity, or process shall produce vibrations that are perceptible without instruments at one or more property lines of an "R" district.

5.13.1.11 EXISTING CONDITIONS

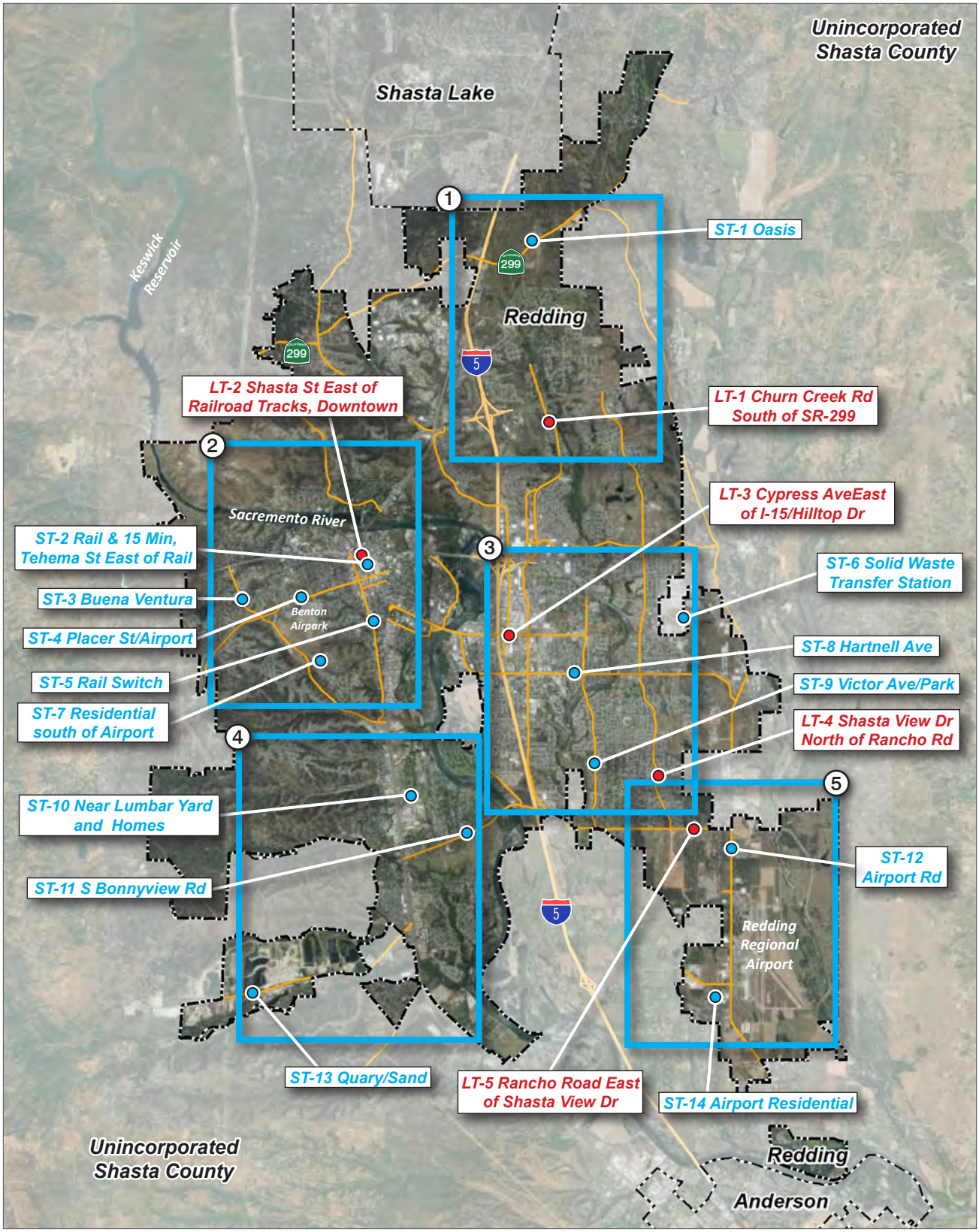
Ambient Noise Measurements

Ambient noise monitoring was conducted within the Planning Area by PlaceWorks in October 2022 to determine a baseline noise level at different environments. Measurements were made during weekday periods when the Planning Area is expected to be most active. Long-term (24-hour) measurements were conducted at 5 locations within the Planning Area, and short-term (15 minute) measurements were conducted at 13 locations in the Planning Area. One supplemental short-term measurement was conducted at a rail switch location to capture the event which was less than 1 minute. All measurements were conducted from Tuesday, October 25, through Wednesday, October 26, 2022. Short-term measurements were generally made during morning (7:00 am to 10:00 am) and evening (3:00 pm to 7:00 pm) peak commute hours. Figure 5.13-1*, Approximate Noise Monitoring Locations,* shows the noise monitoring locations.

Meteorological conditions during the measurement periods were favorable for outdoor sound measurements and were noted to be representative of the typical conditions for the season. All sound level meters were equipped with a windscreen during measurements.

All sound level meters used for noise monitoring satisfy the American National Standards Institute standard for Type 1 and Type 2 instrumentation.[1] The sound level meters were set to “slow” response and “A” weighting (dBA). The meters were calibrated prior to and after the monitoring period. All measurements were at least 5 feet above the ground and away from reflective surfaces. Noise measurement locations are described below and shown in Figure 5.13-1. Long-term and short-term measurement data is also summarized in Table 5.13-5, *Long-Term Noise Measurement Summary (dBA)*, and Table 5.15-6, *Short-Term Noise Measurement Summary (dBA)*.

[1] Monitoring of ambient noise was performed using Larson-Davis Model LxT, Larson Davis 820, and Soft dB Piccolo 2 sound level meters.



Source: Generated using ArcMap, 2022.

0 1.5
Scale (Miles)

City of Redding

Index Map Areas (5)

Figure 5.13-1
Approxiamte Noise Monitoring Locations

This page intentionally left blank.

Long-Term Noise Monitoring Locations

- **Long-Term Location 1 (LT-1)** was on Churn Creek Road south of State Route 299 (SR-299) in front of the Willow Springs Alzheimer Special Care Center located on 191 Churn Creek Road. The measurement location was approximately 25 feet east of the Churn Creek Road northbound centerline. A 24-hour noise measurement was conducted, beginning at the 3:00 pm hour on Tuesday, October 25, 2022. The noise environment of this site is characterized primarily by local traffic.
- **Long-Term Location 2 (LT-2)** was on Tehama Street approximately 50 feet east of the railroad tracks, and approximately 400 feet north of the Greyhound bus stop on 1530 Yuba Street. A 24-hour noise measurement was conducted, beginning at the 1:00 pm hour on Tuesday, October 25, 2022. The noise environment of this site is characterized primarily by local traffic and heavy rail passbys.
- **Long-Term Location 3 (LT-3)** was on Cypress Avenue east of Hilltop Drive and Interstate 5 (I-5). The measurement location was approximately 30 feet north of the Cypress Avenue westbound centerline. A 24-hour noise measurement was conducted, beginning at the 12:00 pm hour on Tuesday, October 25, 2022. The noise environment of this site is characterized primarily by local traffic.
- **Long-Term Location 4 (LT-4)** was on Rancho Road west of Alta Rico Drive and east of Alta Camino Drive, next to 4976 Alta Rico Drive. The measurement location was approximately 25 feet north of the Rancho Road westbound centerline. A 24-hour noise measurement was conducted, beginning at the 11:00 am hour on Tuesday, October 25, 2022. The noise environment of this site is characterized primarily by local traffic.
- **Long-Term Location 5 (LT-5)** was on Shasta View Drive behind the residence located on 2605 Eel Drive. The measurement location was approximately 35 feet east of the Shasta View Road northbound centerline. A 24-hour noise measurement was conducted, beginning at the 10:00 am hour on Tuesday, October 25, 2022. The noise environment of this site is characterized primarily by local traffic.

TABLE 5.13-5 LONG-TERM NOISE MEASUREMENT SUMMARY (DBA)

Monitoring Location	Description	CNEL	Lowest L_{eq}(1hr)	Highest L_{eq}(1hr)
LT-1	Churn Creek Road, next 191 Churn Creek Road (Willow Springs Alzheimer Special Care Center) 10/25/2022, 3:00 PM	70	55	71
LT-2	Tehama Street, east of the train tracks. 10/25/2022, 1:00 PM	85	54	83
LT-3	Cypress Avenue, next to 800 E Cypress Avenue (restaurant) 10/25/2022, 12:00 PM	75	59	75
LT-4	Shasta View Drive, behind 2605 Eel Drive (residence) 10/25/2022, 10:00 AM	65	48	65
LT-5	Rancho Road, next to 4976 Alta Rico Drive (residence) 10/25/2022, 11:00 AM	74	56	74

Source: PlaceWorks 2022

Short-Term Noise Monitoring Results

The short-term noise measurement results are summarized in Table 5.13-6, *Short-Term Noise Measurement Summary (dBA)*.

- Short-Term Location 1 (ST-1) was in front of the Risen King Community Church on Oasis Road. The measurement location was approximately 200 feet south of the church's western-most vehicle entrance and approximately 40 feet northwest of the Oasis Road south-eastbound centerline. A 15-minute noise measurement was conducted, beginning at 2:50 pm on Tuesday, October 25, 2022. The noise environment of this site is characterized primarily by light local traffic and vehicles slowing down and accelerating upon exit and entrance of the church parking lot. Traffic noise levels on Oasis Road generally ranged from 60 dBA to 74 dBA.
- Short-Term Location 2 (ST-2) was approximately 20 feet north of LT-2 on Tehama Street approximately 50 feet east of the railroad tracks. A 15-minute noise measurement was conducted, beginning at 3:56 pm on Tuesday, October 25, 2022. The noise environment of this site is characterized primarily by local traffic passing at speeds between 25 and 35 miles per hour and buses exiting and entering the terminal from an entrance/exit approximately 80 feet east of ST-2. No trains passed the measurement location during the 15-minute duration. An emergency vehicle passed through the downtown area in proximity of the measurement location and the siren could be heard in the distance. It did not result in an increase to the ambient low noise level. Traffic noise levels passing the tracks on Tehama Street generally ranged from 62 dBA to 70 dBA.
- Short-Term Location 3 (ST-3) was on the intersection of Buenaventura Boulevard and Cal Ore Drive, next to the residence on 3869 Cal Ore Drive. The measurement location was approximately 20 feet east of the Buenaventura Boulevard northbound centerline. A 15-minute noise measurement was conducted, beginning at 4:32 pm on Tuesday, October 25, 2022. The noise environment of this site is characterized primarily by fast-flowing traffic, large portion of which was composed of pickup trucks and other larger vehicles. Traffic noise levels on Buenaventura Boulevard ranged from 73 dBA to 80 dBA. Louder vehicles including several sports cars and trailer trucks reached a maximum of 86 dBA.
- Short-Term Location 4 (ST-4) was next to 2830 Placer Street near the westbound lanes of Placer Street and north of the Benton Airpark. A 15-minute noise measurement was conducted, beginning at 3:57 pm on Tuesday, October 25, 2022. The noise environment of this site is characterized primarily by local traffic. No airplanes were observed during the measurement period. Traffic noise levels on Placer Street ranged from 71 dBA to 78 dBA.
- Short-Term Location 5 (ST-5) was on Railroad Avenue near the intersection of Railroad Avenue and Schley Avenue. This measurement captured the duration of the rail switch that occurred on the railroad tracks. This event occurred for approximately 55 seconds, at 1:34 pm on Wednesday, October 26, 2022. The maximum noise level of the rail switch was 94.8 dBA.

- Short-Term Location 6 (ST-6) was on the northbound side of Abernathy Lane, approximately 120 feet north of the centerline of entrance to the City of Redding Solid Waste Transfer Facility on Abernathy Lane. A 15-minute noise measurement was conducted, beginning at 12:04 pm on Wednesday, October 26, 2022. The noise environment of this site is characterized primarily by local traffic and vehicles entering and exiting the facility, including elevated noise levels from vehicles accelerating. Noise levels from vehicles exiting the facility measured up to 84 dBA. The noise levels of passing traffic ranged from 50 dBA to 76 dBA.
- Short-Term Location 7 (ST-7) was in front of the residence on 2956 Pawnee Court. The measurement location was at the end of cul-de-sac on Pawnee Court. A 15-minute noise measurement was conducted, beginning at 5:15 pm on Tuesday, October 25, 2022. The noise environment of this site is characterized primarily by temporary and infrequent events like dogs barking, the clanging of metal gates, movement of trash cans, the resident's vehicles approaching their residences. The measurement location is 2,000 feet south the runways of Benton Airpark. A propeller plane passing by overhead could be heard from the measurement location, reaching a maximum of 76 dBA.
- Short-Term Location 8 (ST-8) was in front of 2985 Fairway Avenue, approximately 25 feet north of the Hartnell Avenue westbound centerline. A 15-minute noise measurement was conducted, beginning at 5:51 pm on Tuesday, October 25, 2022. The noise environment of this site is characterized primarily by high volume traffic, including the frequent passing of larger vehicles that were measured to peak at 85 dBA. Traffic noise levels ranged from 66 dBA to 75 dBA.
- Short-Term Location 9 (ST-9) was in front of the soccer fields and basketball courts at Enterprise Park. The measurement location was approximately 40 feet west of the Victor Avenue southbound centerline. A 15-minute noise measurement was conducted, beginning at 6:19 pm on Tuesday, October 25, 2022. The noise environment of this site is characterized primarily by local traffic on Victor Avenue. Secondary noise sources include strollers passing by on the sidewalk adjacent to the measurement location, basketball dribbling, and shouting associated with the sports practices occurring on the soccer field. The traffic noise levels ranged from 60 dBA to 64 dBA.
- Short-Term Location 10 (ST-10) was on 2460 North Bonnyview Drive approximately 160 feet north of the Meeks Production Facility property line. The measurement location was approximately 15 feet north of the North Bonnyview Drive westbound centerline. A 15-minute noise measurement was conducted, beginning at 8:59 am on Wednesday, October 26, 2022. The noise environment of this site is characterized primarily by low-volume traffic. Secondary noise sources included distant alarms and hammering from the facility locate south of the measurement location in addition to bird chirping. The traffic noise levels ranged from 60 dBA to 73 dBA and included several pickup trucks.
- Short-Term Location 11 (ST-11) was on South Bonnyview Road near 5887 Fagan Road. The measurement location was approximately 25 feet north of the South Bonnyview Road westbound centerline. A 15-minute noise measurement was conducted, beginning at 8:33 am on Wednesday, October 26, 2022. The noise environment of this site is characterized primarily by high-volume local

traffic, including the frequent passing of large and loud vehicles. These vehicles reached a maximum level of 85 dBA. Traffic noise levels generally ranged from 74 dBA to 79 dBA.

- Short-Term Location 12 (ST-12) was at the intersection of Electro Way and Airport Road in front of HiLine Home of Redding on 3652 Electro Way. The measurement location was approximately 25 feet east of the Airport Road northbound centerline. A 15-minute noise measurement was conducted, beginning at 7:56 am on Wednesday, October 26, 2022. The noise environment of this site is characterized primarily by high-volume local traffic, including frequent heavy-duty vehicles.
- Short-Term Location 13 (ST-13) was in front of the JF Shea Construction Incorporated property line on 17400 Clear Creek Road. The measurement location was approximately 50 feet north of the Clear Creek Road westbound centerline. A 15-minute noise measurement was conducted, beginning at 10:12 am on Wednesday, October 26, 2022. The noise environment of this site is characterized primarily by heavy duty vehicles and loading-haul trucks passing on Clear Creek Road. Secondary noise sources include the sounds of rocks/gravel falling onto into large piles of rocks of an estimated 100-foot height. The rocks are hauled to this height via a conveyor belt system, possibly after being crushed in another area of the facility. The noise levels observed from this process range from 59 dBA to 61 dbA. Noise levels from loading haul trucks reached a maximum level of 88 dBA.
- Short-Term Location 14 (ST-14) was in front of 2723 Amigo Road. The measurement location was in a residential neighborhood. A 15-minute noise measurement was conducted, beginning at 7:28 am on Wednesday, October 26, 2022. The noise environment of this site is characterized primarily by distant traffic noise. Secondary noise sources included dogs barking, bird noises, infrequent vehicles, and a plane passing overhead.

TABLE 5.13-6 SHORT-TERM NOISE MEASUREMENT SUMMARY (DBA)

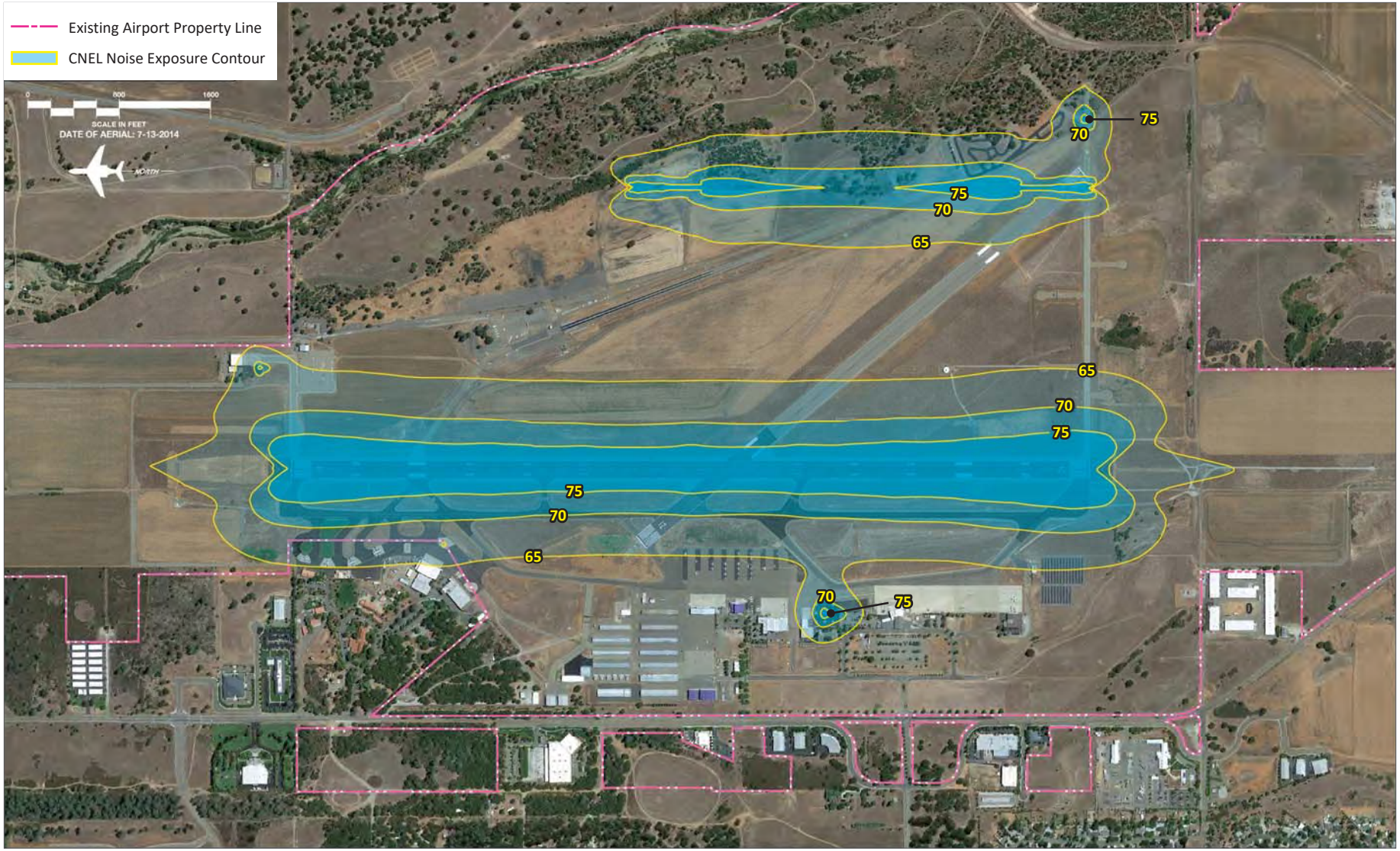
Monitoring Location	Description	15-Minute Noise Level, dBA						
		L_{eq}	L_{max}	L_{min}	L_{50}	L_{25}	L_{8}	L_{2}
ST-1	In front of 6100 Oasis Road (church) 10/20/2022, 2:50 PM	65.5	79.1	38.8	58.6	66.1	71.1	73.5
ST-2	Tehama Street, 50 feet east of railroad tracks 10/25/2022, 3:56 PM	65.0	76.9	50.4	62.2	66.1	69.0	71.9
ST-3	In front of 3869 Cal Ore Drive (residence) 10/25/2022, 4:32 PM	72.5	86.4	46.8	69.3	73.9	76.8	79.5
ST-4	Next to 2830 Placer Street (residence) 10//25/2022, 3:57 PM	67.4	68.5	61.7	65.2	66.7	67.9	68.3
ST-5	Railroad Avenue, near intersection with Schley Avenue 10/26/2022, 1:34 PM	82.2	94.8	59.6	--	--	--	--
ST-6	In front of 2255 Abernathy Lane (Solid Waste Transfer Facility) 10/26/2022, 12:04 PM	65.4	83.5	40.5	52.6	60.3	68.8	76.1
ST-7	In front of 2956 Pawnee Court (residence) 10/25/2022, 5:15 PM	56.2	77.9	34.6	39.1	43.2	51.8	58.1
ST-8	In front of 2985 Fairway Avenue (residence) 10/25/2022, 5:51 PM	70.6	85.5	52.4	68.2	71.4	74.6	77.4
ST-9	In front of Enterprise Park on Victor Avenue 10/25/2022, 6:19 PM	59.6	71.2	44.8	56.5	61.0	64	66.6
ST-10	In front of 2460 North Bonnyview Drive (residence) 10/26/2022, 8:59 AM	59.9	78.2	44.6	50.3	53.5	61.5	71.0
ST-11	South Bonnyview Road, near 5887 Fagan Road (residence) 10/26/2022, 7:56 AM	75.4	85.2	60.3	72.3	76.9	80.0	81.7
ST-12	In front of 3652 Electro Way (commercial business) 10/26/2022, 7:56 AM	72.5.	85.4	50.6	70.1	73.7	76.8	79.5
ST-13	Near 17400 Clear Creek Road (industrial facility) 10/26/2022, 10:12 AM	73.7	88.3	54.3	61.5	70.6	79.1	83.8
ST-14	In front of 2723 Amigo Road (residence) 10/26/2022, 7:28 AM	51.8	66.1	44.1	49.2	50.8	55.3	60.0

Source: PlaceWorks 2022

Existing Aircraft Noise

The Redding Municipal Airport Master Plan, prepared in November 2015, includes an assessment of aircraft noise impacts due to forecast operations at the airport in the year 2034. Figure 5.13-2 *Redding Municipal Airport Noise Contours*, shows the CNEL contours prepared for this condition. The future 65 dB CNEL contour is largely confined to airport property. Note that the Redding Municipal Airport has been renamed to the "Redding Regional Airport."

The Benton Airpark Master Plan, published in 2005, includes noise contours for the forecast year of 2022, as shown in Figure 5.13-3, *Benton Airpark Noise Contours*. As shown in Figure 5.13-3, no residential properties are overlap with the 65 dBA contour for the airpark.

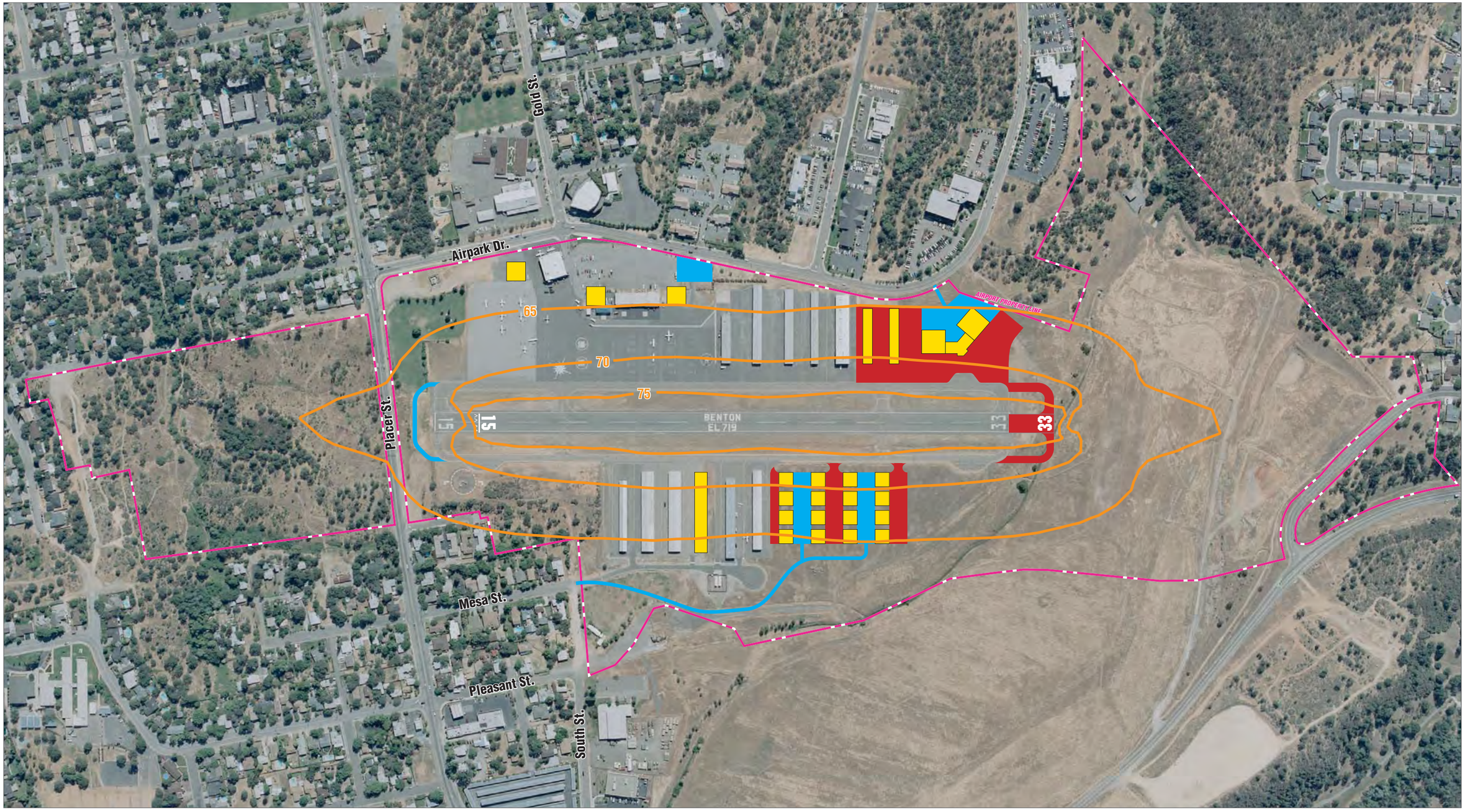


Source: Redding City Council Meeting, December 2015.

0 750
Scale (Feet)

Figure 5.13-2
Redding Regional Airport Noise Contours

This page intentionally left blank.



Source: Coffman Associates, Inc., 2005.

Figure 5.13-3
Benton Airpark Noise Contours

This page intentionally left blank.

Existing Railroad Noise

Railroad operations are also a substantial source of noise in some parts of the Planning Area. Day-night average noise levels vary throughout the city depending on the number of trains per day along the rail line, the timing and duration of train pass-by events, and whether or not trains must sound their warning whistles near "at-grade" crossings. Noise levels commonly range from 65 to 75 dBA CNEL at land uses adjoining a railroad right-of-way. When trains approach a passenger station or at-grade crossing, they are required to sound their warning whistle within a quarter mile. Train warning whistles typically generate maximum noise levels of 105 to 110 dBA at 100 feet. The day-night average noise level at locations immediately adjacent to at-grade crossings and exposed to multiple train pass-by events per day can exceed 85 dBA L_{dn}/CNEL. Table 5.13-7, *Existing Railroad Noise Levels*, contains the calculated distances to the 65 dBA CNEL contours from existing railroad noise, both from the main line and within a quarter mile of grade crossings where horn warnings are required. All rail noise modeling inputs are found in Appendix 5.13-1.

TABLE 5.13-7 EXISTING RAILROAD NOISE LEVELS

Operator	Subdivision	Distance to the 65 dBA CNEL Contour (Mainline)	Distance to 65 dBA CNEL Contour within ¼ Mile of Grade Crossing
Union Pacific	Valley Subdivision	175 feet	387 feet

Source: Federal Rail Administration (FRA). Calculated using the FTA CREATE Model and FRA Grade Crossing Horn Model. See Appendix Appendix 5.13-1

Existing Stationary Noise

Stationary sources of noise occur on all types of land uses. Residential uses generate noise from landscaping, maintenance activities, and air conditioning systems. Commercial uses generate noise from heating, ventilation, and air conditioning (HVAC) systems; loading docks; and other sources. Industrial uses may generate noise from HVAC systems, loading docks, and possibly machinery. Noise generated by residential or commercial uses is generally short and intermittent. Industrial uses may generate noise on a more continual basis. Nightclubs, outdoor dining areas, gas stations, car washes, fire stations, drive-throughs, swimming pool pumps, school playgrounds, athletic and music events (such as at the Redding Rodeo Grounds), and public parks are other common noise sources. Noise measurements were conducted at three sites that contained fixed noise sources. These include sand and gravel operations along Clear Creek Road, lumber- related industries in the Moore Road industrial area and the City of Redding Solid Waste Transfer Station. The L_{eq} values obtained at all three sites are shown in Table 5.13-6 as ST-6, ST-10, and ST-13.

Existing Vibration

Commercial and industrial operations in the Planning Area can generate varying degrees of ground vibration, depending on the operational procedures and equipment. Such equipment-generated vibrations spread through the ground and diminish with distance from the source. The effect on buildings in the

vicinity of the vibration source varies depending on soil type, ground strata, and receptor-building construction. The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to slight structural damage at the highest levels. In addition, future sensitive receptors could be placed within close proximity to existing railroad lines through buildout in the Planning Area.

5.13.2 THRESHOLDS OF SIGNIFICANCE

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

NOI-1 Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

NOI-2 Generation of excessive groundborne vibration or groundborne noise levels.

NOI-3 For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, if the project would expose people residing or working in the project area to excessive noise levels.

5.13.3 PROPOSED GENERAL PLAN POLICIES

The Noise Element aims to establish measures that address current and future noise problems. The proposed General Plan includes goals and policies intended to avoid or reduce noise-related impacts. In most cases, no one goal or policy itself is expected to completely avoid or reduce an identified potential environmental impact. However, the collective, cumulative mitigating benefits of the policies listed below are intended to reduce noise-related impacts. Specific goals and policies are discussed in Section 5.13.4, *Environmental Impacts*, to demonstrate how the policy would avoid or reduce the impact.

Noise Element

- Policy N-1A: Encourage the use of site planning and building materials/design as primary methods of noise-attenuation.
- Policy N-1B: Discourage use of noise barriers and walls constructed exclusively for noise-attenuation purposes, where possible. In instances where noise barriers cannot be avoided, consider the use of site planning and building material/design features in conjunction with barriers to mitigate visual impacts and reduce the size of barriers.
- Policy N-1C: Allow development located in infill areas, near transit hubs, or along major roadways an exemption from exterior noise standards for outdoor activity areas where appropriate.

- Policy N-1D: Consider establishing different standards for exterior noise consistent with place type to support businesses and concert venues.
- Policy N-1E: Require new development to generate operational and/or construction vibration levels no greater than 75 VdB at the property line of a sensitive receptor where feasible.
- Policy N-2A: Generally, prevent development of new projects which contain noise-sensitive land uses in areas exposed to existing or projected levels of noise from transportation sources which exceed the levels specified in Table N-1, unless the project design includes effective mitigation measures to reduce exterior noise and noise levels in interior spaces to the levels specified in that table.
- Policy N-2B: New development should be required to mitigate noise created by transportation noise sources consistent with the levels specified in Table N-1 in outdoor-activity areas.
- Policy N-2C: Consider the significance of noise-level increases associated with roadway-improvement projects needed to accommodate buildout of the General Plan. Since it may be impractical to reduce increased traffic noise to levels in Table N-1, the following criteria may be used as a test of significance for roadway-improvement projects:
    - Where existing daytime transportation noise levels are less than 60 dB Ldn in the outdoor-activity areas of noise-sensitive uses, roadway improvement projects which do not increase the overall Ldn value to greater than 60 or result in an incremental increase of 5 dBA will not be considered significant.
    - Where existing traffic noise levels range between 60 and <65 dB Ldn in the outdoor-activity areas of noise-sensitive uses, a +3 dB Ldn increase in noise levels due to a roadway-improvement project will be considered significant.
    - Where existing traffic noise levels are 65 dB Ldn or greater in the outdoor- activity areas of noise-sensitive uses, a +1.5 dB Ldn increase in noise levels due to a roadway- improvement project will be considered significant.
- Policy N-2D: Require acoustical analysis for noise-sensitive land uses proposed in areas exposed to existing or projected exterior noise levels exceeding the levels specified in Table N-1 or the performance standards of Table N-2 to determine mitigation for inclusion in the project design. Single-family dwellings on existing lots are excluded from this review.
- Policy N-2E: Strive to minimize motor vehicle noise impacts from streets and highways through proper route location and sensitive roadway design by employing the following strategies:
    - Consider the impacts of truck routes, the effects of a variety of truck traffic, and future motor vehicle volumes on noise levels adjacent to master planned roadways when improvements to the circulation system are planned.

  - Mitigate traffic volumes and reduce vehicle speed through residential neighborhoods where appropriate.
  - Strive to engage and work with Caltrans in the early stages of highway improvements and design modifications to ensure that proper consideration is given to potential noise impacts on the City.

- Policy N-2F: New development in the vicinity of Redding Regional Airport and Benton Airpark should comply with the noise standards of the Comprehensive Land Use Plan for each facility as appropriate.
- Policy N-2G: Consider working with railroad officials to install mitigation features or quiet zones and ask railroad engineers to limit their use of air horns to reduce rail-related noise impacts on the community as resources allow.
- Policy N-2H: Establish standards for vibration during construction and operation that require vibration levels to be reduced below 85 VdB within 200 feet of an existing structure.
- Policy N-2I: Revise the Noise Ordinance to establish noise standards for construction noise that establish a maximum level of acceptable exterior noise for receptors within 500 feet of the construction activity.
- Policy N-3A: Development of noise-sensitive uses where the noise level due to non-transportation sources will exceed the noise-level standards of Table N-2 as measured immediately at the property line of the new development should be prohibited unless adequate mitigation measures are utilized, noise easements are established, or other appropriate measures are taken.
- Policy N-3B: Strive to mitigate noise created by new proposed non-transportation sources consistent with the noise-level standards of Table N-2 as measured immediately at the property line of lands designated for noise-sensitive land uses.
- Policy N-3C: Require acoustical analysis of new non-residential land uses and the expansion of existing non-residential land uses if likely to produce noise levels exceeding the performance standards of Table N-2 (of the Noise Element).
- Policy N-3D: Require that parking and loading areas for commercial and industrial land uses adjacent to noise sensitive uses be buffered and shielded by walls, fences, and berms, unless an acoustical study demonstrates that operation of the parking and loading area(s) will comply with the City's noise standards.
- Policy N-3E: Parking structures serving commercial or industrial land uses should be designed to minimize the potential noise impacts both on site and on adjacent properties. Design measures may include the use of materials that mitigate sound transmission and the configuration of interior spaces to minimize sound amplification and transmission.

- Policy N-3F: Encourage existing major fixed noise sources throughout the City of Redding to voluntarily install additional noise-buffering or reduction mechanisms within their facilities to reduce noise impacts to the lowest level practicable.
- Policy N-3G: As appropriate, new noise- sensitive projects should be responsible for noise mitigations to lessen the impacts from adjacent and nearby industrial uses and urban activities when the following conditions exist:
    - If, at the time of request for new residential or noise-sensitive land use development, the industrial uses complied with all the noise thresholds and/or noise mitigation measures based on anticipated noise sources and noise levels.
    - If, at the time of request for a General Plan Amendment to establish new residential or noise-sensitive land use development, adjacent vacant land is designated for commercial or industrial development.
    - The noise level measured at the noise-sensitive use property line exceeds the residential noise standards due to the cumulative effect of nearby non-residential noise sources and increased noise levels of urban activities (i.e., traffic, trains, etc.)
    - The industrial use emitting the noise conforms with the land use classification of the General Plan, zoning district, and all conditions of City permits.
    - The industrial use has not added additional noise-producing equipment or substantially changed its hours of operation from what has been approved by the City.
- Policy N-3H: Revise the Noise Ordinance to allow for increased noise levels in specific areas of the City that are hubs for outdoor activity including the Downtown Core and Civic Auditorium/Rodeo Grounds/Turtle Bay Exploration Park area by implementing different acceptable exterior noise standards for these areas. Consider modifying the nighttime noise standard period to start at 11 PM instead of 10 PM for activities in these areas.

Community Health Wellness and Environmental Justice Element

- Policy EJ3D: Utilize measures contained in the Noise Element to mitigate potential construction and operational noise, vibration, and dust impacts to the community.
- Policy EJ3G: Monitor changes in technology that will prevent and mitigate transportation-related noise and air quality impacts on residential and sensitive uses in the community. Support traffic and highway improvements that will reduce noise and air quality impacts of vehicles. Alternatives to sound walls should be considered where possible.

5.13.4 IMPACT DISCUSSION

NOI-1: Construction activities associated with buildout of the Planning Area would result in temporary noise increases at sensitive receptors. [N-1]

As part of implementation of the proposed project, various individual land use development projects would be constructed over the duration of the General Plan buildout. Construction is performed in distinct steps, each of which has its own mix of equipment, and, consequently, its own noise characteristics. Table 5.13-8, *Construction Equipment Noise Emission Levels*, lists typical construction equipment noise levels recommended for noise-impact assessments, based on a distance of 50 feet between the equipment and noise receptor.

TABLE 5.13-8 CONSTRUCTION EQUIPMENT NOISE EMISSION LEVELS

Construction Equipment	Typical Max Noise Level (dBA Lmax) [a]	Construction Equipment	Typical Max Noise Level (dBA Lmax) [a]
Air Compressor	81	Pile-Driver (Impact)	101
Backhoe	80	Pile-Driver (Sonic)	96
Ballast Equalizer	82	Pneumatic Tool	85
Ballast Tamper	83	Pump	76
Compactor	82	Rail Saw	90
Concrete Mixer	85	Rock Drill	98
Concrete Pump	71	Roller	74
Concrete Vibrator	76	Saw	76
Crane, Derrick	88	Scarifier	83
Crane, Mobile	83	Scraper	89
Dozer	85	Shovel	82
Generator	81	Spike Driver	77
Grader	85	Tie Cutter	84
Impact Wrench	85	Tie Handler	80
Jack Hammer	88	Tie Inserter	85
Loader	85	Truck	88
Paver	89		

Notes:
[a] Measured 50 feet from the source.
Source: Federal Transit Administration (FTA) 2018. *Transit Noise and Vibration Impact Assessment Manual*.

As shown in Table 5.13-8, construction equipment generates high levels of noise, with maximums ranging from 71 to 101 dBA. Construction of individual developments associated with implementation of the proposed project would temporarily increase the ambient noise environment and would have the potential to affect noise-sensitive land uses in the vicinity of an individual project. According to Redding's Municipal

Code Section 18.40.100, construction or demolition work in or within 500 feet of a residential district is prohibited:

- May 15 through September 15: Between the weekday hours of 7:00 PM and 6:00 AM and weekends and holidays between 8:00 PM and 9:00 AM
- September 16 through May 14: Between the weekday hours of 7:00 PM and 7:00 AM and weekends and holidays between 8:00 PM and 9:00 AM

Implementation of the project would result in an increase in development intensity to accommodate growth. Construction noise levels are highly variable and dependent upon the specific locations, site plans, and construction details of individual projects. Significant noise impacts may occur from operation of heavy earth-moving equipment and truck-haul operations that would occur with construction of individual development projects, which have not yet been developed, particularly if construction techniques, such as impact or vibratory pile driving, are proposed. The time of day that construction activity is conducted would also determine the significance of each project, particularly during the more sensitive nighttime hours. However, construction would be localized and would occur intermittently for varying periods of time.

The 2023-2045 General Plan includes Policy N-2I which directs the City to establish noise standards for construction noise that establish a maximum level of acceptable exterior noise for receptors within 500 feet of the construction activity. However, even with implementation of this proposed policy, and municipal code compliance, it is not possible nor appropriate to quantify the construction noise impacts at sensitive receptors that may be in close proximity to future development sites, because specific, project-level information is not available at this time. In most cases, construction of individual developments associated with implementation of the proposed General Plan Update would temporarily increase the ambient noise environment in the vicinity of each individual project, potentially affecting existing and future nearby sensitive uses. Because construction activities associated with any individual development may occur near noise-sensitive receptors and because, depending on the project type, equipment list, time of day, phasing, and overall construction durations, noise disturbances may occur for prolonged periods of time or during the more sensitive nighttime hours, construction noise impacts associated with implementation of the proposed General Plan Update are considered potentially significant.

Level of Significance Before Mitigation: NOI -1 potentially significant.

Mitigation Measures

NOI-1 Update the noise ordinance to include construction noise attenuation and plan requirements such as

- Limiting construction times and days.
- Use of best-available noise control techniques (e.g., improved mufflers, equipment re-design, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds), wherever feasible.

- Limitations on the use of impact tools (e.g., jack hammers and hoe rams) shall be hydraulically or electrically powered wherever possible. Where the use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used along with external noise jackets on the tools.

Level of Significance After Mitigation: Implementation of Mitigation Measure NOI-1 would reduce potential noise impacts during construction to the extent feasible. However, due to the potential for proximity of construction activities to sensitive uses, the number of construction projects occurring simultaneously, and the potential duration of construction activities, Impact NOI-1 (construction noise) could result in a temporary substantial increase in noise levels above ambient conditions. Therefore, impacts would remain significant and unavoidable. It should be noted that the identification of this program-level impact does not preclude the finding of less-than-significant impacts for subsequent projects analyzed at the project level.

NOI-2: Buildout of the Planning Area would cause a substantial traffic noise increase on local roadways and could locate sensitive receptors in areas that exceed established noise standards [N-1]

Buildout of the General Plan Update would result in an increase in traffic along local roadways proximate to existing sensitive receptors. The complete distances to the 70, 65, and 60 dBA CNEL noise contours for roadway segments in the City are included in Appendix 5.13-1.

A project will normally have a significant effect on the environment related to noise if it will substantially increase the ambient noise levels at adjoining areas. Most people can detect changes in sound levels of approximately 3 dBA under normal, quiet conditions, and changes of 1 to 3 dBA are detectable under quiet, controlled conditions. Changes of less than 1 dBA are usually indiscernible. A change of 5 dBA is readily discernible to most people in an exterior environment. Based on this, the following thresholds of significance, similar to those recommended by the Federal Aviation Administration (FAA), were used to assess traffic noise impacts within 50 feet of traffic segments in the Planning Area. A significant impact would occur if traffic noise increase would exceed:

- 1.5 dBA in ambient noise environments of 65 dBA CNEL and higher.
- 3 dBA in ambient noise environments of 60 to 64 dBA CNEL.
- 5 dBA in ambient noise environments of less than 60 dBA CNEL.

Table 5.13-9, *Traffic Noise Increases in the Planning Area*, shows the estimated traffic noise increase along study roadway segments. The traffic noise increase is the difference between the projected future noise level and the existing noise level. As shown in Table 5.13-9, traffic noise increases are estimated along several of the study roadway segments from implementation of the General Plan. However, two of these roadway segments, Rancho Road, west of Airport Road and Twin View Road Boulevard, south of Oasis

Boulevard would experience a potentially significant traffic noise increase. Noise Element policies N-2B, N-2C, N-2D N-2E, and N-2F would help minimize and mitigate traffic noise impacts. For example, Policy N-2B would require new development to mitigate transportation noise created by the project to the levels specified in the Table N-1 of the proposed Noise Element while Policy N-2D would require an acoustical analysis for projects with noise-sensitive land uses that would be exposed to exterior noise above the noise standards in Table N-1. Policy N-2E outlines strategies for future development and action from the City to reduce traffic noise impacts on sensitive land uses. However, traffic noise increases on the roadway segments shown in bold in Table 5.13-9 are conservatively considered to remain significant.

TABLE 5.13-9 TRAFFIC NOISE INCREASES IN THE PLANNING AREA

Roadway	Segment	dBA CNEL/ L_{dn}				Significant?
		Existing at 50 Feet	2045 General Plan at 50 Feet	Noise Increase	Applicable Threshold	
Interstate 5 (I-5)	N of Twin View Blvd	80.8	81.9	1.1	1.5	No
I-5	N of SR-299 / S of Twin View Blvd	81.2	82.2	1.0	1.5	No
I-5	N of SR-44 / S of SR-299	82.1	83.1	1.0	1.5	No
I-5	S of SR-44 / N of Cypress Ave	82.9	84.0	1.1	1.5	No
I-5	S of Cypress Ave / N of Churn Creek Rd	82.4	83.6	1.2	1.5	No
I-5	S of Churn Creek Rd	82.2	83.5	1.3	1.5	No
SR-44	E of Butte St / W of I-5	77.5	78.2	0.7	1.5	No
SR-44	E of I-5 / W of Hilltop Dr	76.8	77.4	0.6	1.5	No
SR-44	E of Hilltop Dr / W of Victor Ave	75.7	76.6	0.9	1.5	No
SR-44	E of Victor Ave	77.3	77.8	0.5	1.5	No
SR-44	E of Shasta View Dr	75.6	76.6	1.0	1.5	No
SR-44	E of Airport Rd	74.1	75.0	0.9	1.5	No
SR-273	N of Lake Blvd	70.0	70.4	0.4	1.5	No
SR-273	N of Benton Dr/S of Lake Blvd	70.9	71.5	0.5	1.5	No
SR-273	S of Market/Pine	68.8	69.4	0.6	1.5	No
SR-273	S of Buenaventura Ave	72.8	73.5	0.7	1.5	No
SR-273	S of S. Bonnyview Rd	73.4	74.0	0.6	1.5	No
SR-299	W of I-5 / E of SR-273	72.9	73.9	1.0	1.5	No
SR-299	E of I-5 / W of Hawley Rd	74.0	74.9	0.8	1.5	No
SR-299	E of Hawley Rd/W of Old Oregon Tr.	71.4	72.3	0.8	1.5	No
SR-299	E of Old Oregon Tr.	70.5	71.1	0.5	1.5	No
Airport Rd	N of Rancho Rd	72.3	73.6	1.3	1.5	No
Airport Rd	S of Rancho Rd	71.7	73.2	1.4	1.5	No

TABLE 5.13-9 TRAFFIC NOISE INCREASES IN THE PLANNING AREA

Roadway	Segment	dBA CNEL/ L_{dn}				Significant?
		Existing at 50 Feet	2045 General Plan at 50 Feet	Noise Increase	Applicable Threshold	
S. Bonnyview Rd	west of I-5 Southbound ramps	72.3	73.1	0.8	1.5	No
S. Bonnyview Rd	east of I-5 Southbound ramps	70.2	71.2	0.9	1.5	No
S. Bonnyview Rd	west of Churn Creek Rd	69.7	70.6	0.9	1.5	No
Buenaventura Blvd	N of Placer St	67.4	67.8	0.5	1.5	No
Buenaventura Blvd	S of Placer St	67.4	68.2	0.9	1.5	No
California St	btw Shasta & Tehama St	61.1	61.5	0.4	3.0	No
Churn Creek Rd	S of SR-299 ramps	68.8	69.6	0.8	1.5	No
Churn Creek Rd	N of S Bonnyview	68.9	69.4	0.5	1.5	No
Churn Creek Rd	E of S Bonnyview	67.7	68.9	1.2	1.5	No
Cypress Ave	W of Hartnell Ave	71.2	72.3	1.1	1.5	No
Cypress Ave	E of Hartnell Ave	66.6	67.3	0.7	1.5	No
Cypress Ave	E of I-5 / W of Hilltop Dr	68.7	69.5	0.7	1.5	No
Cypress Ave	E of Hilltop Dr / W of Larkspur Ln	66.9	67.7	0.8	1.5	No
Hartnell Ave	W of Bechelli Ln	62.6	62.8	0.1	1.5	No
Hartnell Ave	E of Bechelli Ln	66.4	66.4	-0.1	1.5	No
Hartnell Ave	E of Churn Creek Rd	67.7	67.9	0.1	1.5	No
Hartnell Ave	W of Shasta View Dr	66.4	66.9	0.6	1.5	No
Hartnell Ave	E of Shasta View Dr	64.1	64.9	0.8	3.0	No
Hawley Rd.	N of SR-299 ramps	65.8	66.5	0.7	1.5	No
Hilltop Ave	N of Cypress Ave	65.9	66.2	0.3	1.5	No
Old Oregon Trail	S of SR-299 ramps	68.5	69.9	1.4	1.5	No
Placer St	E of Buenaventura Blvd	68.6	69.5	0.8	1.5	No
Placer St	W of Buenaventura Blvd	69.1	69.1	0.0	1.5	No

TABLE 5.13-9 TRAFFIC NOISE INCREASES IN THE PLANNING AREA

Roadway	Segment	dBA CNEL/ L_{dn}				Significant?
		Existing at 50 Feet	2045 General Plan at 50 Feet	Noise Increase	Applicable Threshold	
Rancho Rd	**W of Airport Rd**	**65.5**	**67.2**	**1.7**	**1.5**	**Yes**
Rancho Rd	E of Airport Rd	55.4	59.1	3.7	5.0	No
Shasta View Dr	N of Rancho Rd	61.1	62.2	1.1	3.0	No
Tehama St	btw Oregon St & California St	58.7	59.3	0.6	5.0	No
Victor Ave	N of Rancho Rd	62.4	63.9	1.5	3.0	No
Placer St	W of Thompson Ln to City limit	67.5	67.7	0.2	1.5	No
SR-299 (Eureka Way)	W of Buenaventura Bl to City limit	70.6	70.8	0.3	1.5	No
SR-299 (Eureka Way)	E of Buenaventura Blvd	69.7	70.5	0.8	1.5	No
SR-299 (Eureka Way)	W of Court St	71.0	71.7	0.7	1.5	No
SR-299 (Eureka Way)	E of Court St/W of SR-273	68.3	68.9	0.6	1.5	No
SR-273 (Market St)	N of Cypress St/S of Gold St	62.3	63.1	0.8	3	No
SR-273 (California St)	N of Gold St/S of Sacramento St	62.2	63.0	0.8	3	No
SR-273 (California St)	S of Placer St/N of Sacramento St	61.7	62.6	0.9	3	No
SR-273 (California St)	N of Placer St/S of Tehama St	61.2	62.2	1.0	3	No
SR-273 (Market St)	N of SR-299/S of Quartz Hill Rd	70.1	70.7	0.6	1.5	No
SR-273 (Market St)	N of Quartz Hill Rd/S of Benton Dr	71.0	71.6	0.5	1.5	No
Bechelli Ln	S of Hartnell Ave	62.9	63.2	0.3	3	No
Bechelli Ln	S of Cypress	64.8	65.5	0.6	3	No
Churn Creek Rd	S of Hartnell Ave	68.3	69.0	0.6	1.5	No
Churn Creek Rd	N of Hartnell Ave/S of Cypress Ave	69.0	69.6	0.5	1.5	No
Churn Creek Rd	N of Cypress Ave/S of Industrial St	70.6	71.0	0.4	1.5	No
Churn Creek Rd	N of Industrial St/S of Mistletoe	69.6	70.1	0.5	1.5	No
Churn Creek Rd	N of Mistletoe/S of SR-44	69.5	70.0	0.5	1.5	No

TABLE 5.13-9 TRAFFIC NOISE INCREASES IN THE PLANNING AREA

Roadway	Segment	dBA CNEL/ L_{dn}				Significant?
		Existing at 50 Feet	2045 General Plan at 50 Feet	Noise Increase	Applicable Threshold	
Churn Creek Rd	N of SR-44/S of College View Dr	68.8	69.3	0.5	1.5	No
Old Oregon Trail	N of SR-299	67.4	68.1	0.7	1.5	No
Twin View Blvd	**S of Oasis Rd**	**58.4**	**63.8**	**5.3**	**5**	**Yes**
Collyer Dr	W of Churn Creek Rd	55.3	55.9	0.5	5	No
Collyer Dr	E of Churn Creek Rd	64.7	65.4	0.7	3	No
Hilltop Dr	S of Lake Blvd/N of Browning St	66.4	66.7	0.2	1.5	No
Hilltop Dr	S of Browning St/N of SR-44	68.2	68.2	0.0	1.5	No
Cypress Ave	E of Larkspur Ln/W of Victor Ave	64.3	65.1	0.8	3	No
Old Alturas Rd	W of Shasta View Dr	66.2	67.2	1.0	1.5	No
Old Alturas Rd	E of Shasta View Dr	64.9	65.9	1.0	3	No
Park Marina Dr	btwen Sundial Bridge Dr and Cypress Ave	67.3	67.6	0.3	1.5	No
Railroad Ave	N of Buenaventura Blvd	65.4	66.0	0.6	1.5	No
Court St	N of Sonoma St	64.0	64.3	0.4	3	No
Benton Dr	river crossing	65.1	65.8	0.7	1.5	No
Benton Dr	W of Market St	63.4	63.7	0.2	3	No
Lake Blvd	btwn Market St & Masonic Ave	71.6	72.0	0.4	1.5	No
Lake Blvd	btwn Masonic Ave & St. Nichols Ave	69.2	69.9	0.7	1.5	No
Lake Blvd	btwn St. Nichols Ave & Keswick Dam Rd	67.3	68.3	1.0	1.5	No
Lake Blvd	btwn Keswick Dam Rd & Oasis Blvd	67.8	68.5	0.7	1.5	No
Lake Blvd	N of Oasis Blvd to City lmitis	66.7	66.9	0.2	1.5	No
Quartz Hill Rd	Kennewick Dam Rd to Harlan Dr	61.4	62.4	1.0	3	No
Quartz Hill Rd	Harlan Dr to Benton Dr	63.5	64.1	0.6	3	No
Quartz Hill Rd	Benton Dr to SR-273 (Market St)	61.3	62.8	1.4	3	No

TABLE 5.13-9 TRAFFIC NOISE INCREASES IN THE PLANNING AREA

Roadway	Segment	dBA CNEL/ L_{dn}				Significant?
		Existing at 50 Feet	2045 General Plan at 50 Feet	Noise Increase	Applicable Threshold	
Keswick Dam Rd	W of Lake Blvd	62.9	63.3	0.5	3	No
Oasis Rd	E of Lake Blvd	65.7	67.2	1.5	1.5	No
Oasis Rd	W of Cascade Blvd	69.3	70.2	1.0	1.5	No
Oasis Rd	E of Twin View Blvd	66.1	67.2	1.1	1.5	No
Shasta View Dr	S of SR-299, N of Simpson Blvd	63.2	66.0	2.8	3	No
Shasta View Dr	S of Simpson Blvd, N of Palacion Dr	62.8	64.4	1.6	3	No
Shasta View Dr	S of Palacio Dr, N of Hemingway	61.9	63.2	1.2	3	No
Shasta View Dr	S of Hemingway, N of Inspiration	63.6	65.4	1.8	3	No
Shasta View Dr	S of Hemingway, N of Inspiration	64.8	66.3	1.5	3	No
Shasta View Dr	S of Old Alturas, N of Atrium Way	65.7	66.2	0.5	1.5	No
Shasta View Dr	S of Atrium Way	66.7	67.1	0.4	1.5	No
Shasta View Dr	N of Tarmac	66.4	66.8	0.4	1.5	No
Shasta View Dr	S of Hawn, N of Hartnell	67.7	68.0	0.3	1.5	No
Shasta View Dr	S of Hartnell, N of Alden	65.8	66.0	0.2	1.5	No
Shasta View Dr	S of Venus Way, N of Galaxy Way	65.1	65.3	0.3	1.5	No

Source: Based on FHWA's traffic noise prediction model methodology using roadway volumes, vehicle mix, time of day splits, and number of lanes provided by GHD, 2023 (see Appendix 5.13-1, Noise Data, of this Draft EIR).

Bold = Potentially Significant.

Level of Significance Before Mitigation: NOI-2 would be potentially significant.

Without other mitigation measures, existing and future noise-sensitive uses would be exposed to elevated traffic noise levels that would result in substantial impacts at some time in the General Plan buildout. The following potential mitigation measures were considered.

Mitigation Measures Considered

In compliance with CEQA, "each public agency shall mitigate or avoid the significant effects on the environment of project it carries out or approves whenever it is feasible to do so" (Public Resources Code Section 21002.1(b)). The term "feasible" is defined in CEQA to mean "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors" (Public Resources Code Section 21061.1). A number of measures were considered for mitigating or avoiding traffic noise impacts (Impact NOI-2).

Special Roadway Paving

Notable reductions in tire noise have been achieved via the implementation of special paving materials, such as rubberized asphalt or open-grade asphalt concrete overlays. For example, the California Department of Transportation conducted a study of pavement noise along Interstate 80 in Davis and found an average improvement of 6 to 7 dBA compared to conventional asphalt overlay (Caltrans 2011).

Although this amount of noise reduction from rubberized/special asphalt materials would be sufficient to avoid the predicted noise increase due to traffic in some cases, the potential up-front and ongoing maintenance costs are such that the cost versus benefits ratio[2] may not be feasible and reasonable and would not mitigate noise to a level of less than significant in all cases. In addition, the study found that noise levels increased over time due to pavement raveling, with the chance of noise-level increases higher after a 10-year period.

Sound Barrier Walls

With a review of aerial depictions of the impacted segments, the majority of existing residences around the plan area have direct access (via driveways) to the associated roadway. Therefore, constructing barrier walls for existing residences would prevent access to individual properties and would be infeasible. Further, these impacted homes are on private property outside of the control of future project developers, so there may be limited admittance onto these properties to construct such walls. Lastly, the costs versus benefits ratio in relation to the number of benefitted households may not be feasible and reasonable in all cases. New

[2] Cost versus benefit considerations are in terms of the number of households benefited, per the general methodology employed by Caltrans in the evaluation of highway sound walls.

development adjacent to arterials and collectors usually gain access from an interior roadway making a noise barrier easier to incorporate into the design.

Sound Insulation of Existing Residences and Sensitive Receptors

Exterior-to-interior noise reductions depend on the materials used, the design of the homes, and their conditions. To determine what upgrades would be needed, a noise study would be required for each house to measure exterior-to-interior noise reduction. Sound insulation may require upgraded windows, upgraded doors, and a means of mechanical ventilation to allow for a "windows closed" condition. There are no funding mechanisms and procedures that would guarantee that the implementation of sound insulation features at each affected home would offset the increase in traffic noise to interior areas and ensure that the state's 45 dBA CNEL standard for multifamily residences would be achieved.

Level of Significance After Mitigation: As demonstrated under the heading "Mitigation Measures Considered" for Impact NOI-2, there are no feasible or practical mitigation measures available to reduce project-generated traffic noise to less-than-significant levels for existing residences along the affected roadway. No individual measure and no set of feasible or practical mitigation measures are available to reduce project-generated traffic noise to less-than-significant levels in all cases. Thus, traffic noise would remain a significant and unavoidable impact in the plan area. It should be noted that the identification of this program-level impact does not preclude the finding of less-than-significant impacts for subsequent projects analyzed at the project level.

NOI-3:	Buildout of the individual land uses and projects for implementation of the General Plan may expose sensitive uses to excessive levels of groundborne vibration. [N-2]

Construction Vibration

Construction activities at projects within the plan area would generate varying degrees of ground vibration, depending on the construction procedures and equipment. Operation of construction equipment generates vibrations that spread through the ground and diminish with distance from the source. The effect on buildings in the vicinity of the construction site varies depending on soil type, ground strata, and receptor-building construction. The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to slight structural damage at the highest levels. Vibration from construction activities rarely reaches the levels that can damage structures but can achieve the audible and perceptible ranges in buildings close to the construction site. Table 5.13-10, *Vibration Levels for Construction Equipment*, lists reference vibration levels for construction equipment.

TABLE 5.13-10 VIBRATION LEVELS FOR CONSTRUCTION EQUIPMENT

Equipment	Approximate PPV Vibration Level at 25 Feet (inches per second)
Pile Driver, Impact (Upper Range)	1.518
Pile Driver, Impact (Typical)	0.644
Pile Driver, Sonic (Upper Range)	0.734
Pile Driver, Sonic (Typical)	0.170
Vibratory Roller	0.210
Large Bulldozer	0.089
Caisson Drilling	0.089
Loaded Trucks	0.076
Jackhammer	0.035
Small Bulldozer	0.003

Notes: Peak Particle Velocity (PPV) is the peak rate of speed at which soil particles move (e.g., inches per second or in/sec) due to ground vibration.
Source: Federal Transit Administration, 2018.

As shown in Table 5.13-10, vibration generated by construction equipment has the potential to be substantial, since it has the potential to exceed the FTA criteria for architectural damage (e.g., 0.12 inches per second [in/sec] PPV for fragile or historical resources, 0.2 in/sec PPV for non-engineered timber and masonry buildings, and 0.3 in/sec PPV for engineered concrete and masonry). Construction details and equipment for future project-level developments under the General Plan are not known at this time but may cause vibration impacts. As such, this would be a potentially significant impact.

Operational Vibration

Commercial and industrial operations within the plan area would generate varying degrees of ground vibration, depending on the operational procedures and equipment. Such equipment-generated vibrations would spread through the ground and diminish with distance from the source. The effect on buildings in the vicinity of the vibration source varies depending on soil type, ground strata, and receptor-building construction. The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to slight structural damage at the highest levels. In addition, future sensitive receptors could be placed within close proximity to existing railroad lines through buildout in the plan area.

General Plan Policy N-1E, would require new development to generate operation and/or construction vibration levels no greater than 75 Vdb at the property line of a sensitive receptor. However, because specific project-level information is not available at this time, it is not possible to quantify future vibration levels at vibration-sensitive receptors that may be near existing and future vibration sources. Therefore, with the potential for sensitive uses within the plan area to be exposed to annoying and/or interfering levels of vibration from commercial or industrial operations and existing railroad lines, operations-related vibration impacts associated with implementation of the General Plan are considered potentially significant.

Level of Significance Before Mitigation: Impact NOI-3 would result in potentially significant impacts related to groundborne vibration.

Mitigation Measures

NOI-2 Prior to issuance of a building permit for a project requiring pile driving during construction within 135 feet of fragile structures, such as historical resources, 100 feet of non-engineered timber and masonry buildings (e.g., most residential buildings), or within 75 feet of engineered concrete and masonry (no plaster); or a vibratory roller within 25 feet of any structure, the project applicant shall prepare a noise and vibration analysis to assess and mitigate potential noise and vibration impacts related to these activities. This noise and vibration analysis shall be conducted by a qualified and experienced acoustical consultant or engineer. The vibration levels shall not exceed Federal Transit Administration (FTA) architectural damage thresholds (e.g., 0.12 inches per second [in/sec] peak particle velocity [PPV] for fragile or historical resources, 0.2 in/sec PPV for non-engineered timber and masonry buildings, and 0.3 in/sec PPV for engineered concrete and masonry). If vibration levels would exceed this threshold, alternative uses such as drilling piles as opposed to pile driving and static rollers as opposed to vibratory rollers shall be used. If necessary, construction vibration monitoring shall be conducted to ensure vibration thresholds are not exceeded.

NOI-3 New residential projects (or other noise-sensitive uses) located within 200 feet of existing railroad lines and Interstate 5, shall be required to conduct a groundborne vibration and noise evaluation consistent with Federal Transit Administration (FTA)-approved methodologies.

NOI-4 During the project-level California Environmental Quality Act (CEQA) process for industrial developments under the General Plan Update or other projects that could generate substantial vibration levels near sensitive uses, a noise and vibration analysis shall be conducted to assess and mitigate potential noise and vibration impacts related to the operations of that individual development. This noise and vibration analysis shall be conducted by a qualified and experienced acoustical consultant or engineer and shall follow the latest CEQA guidelines, practices, and precedents.

Level of Significance After Mitigation: With implementation of Mitigation Measures NOI-2 through NOI-4, Impact NOI-3 would be reduced to less-than-significant levels. Specifically, Mitigation Measure NOI-2 would reduce potential vibration impacts during construction below the pertinent thresholds, and Mitigation Measures NOI-3 and NOI-4 (operations-related vibration) would reduce potential vibration impacts from commercial/industrial uses and proposed uses near existing railroads and facilities to less-than-significant levels.

NOI-4:	The proximity of the future development in the Planning Area to an airport or airstrip would not result in exposure of future residents and/or workers to excessive airport-related noise. [N-3]

As discussed previously, there are two airports in City of Redding, Redding Municipal Airport (Redding Regional Airport) and Benton Airpark, whose noise contours are shown in Figure 5.13-3, *Redding Municipal Airport Noise Contours,* and Figure 5.13-4, *Benton Airpark Noise Contours,* respectively. Future development of noise-sensitive land uses could be located in areas that exceed the 60 dBA CNEL. Noise element policy N-2F would require new development in the vicinity of Redding Municipal Airport and Benton Airpark to comply with the noise standards of the Master Plan for each facility. Therefore, impacts would be less than significant.

Level of Significance Before Mitigation: NOI-4 would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation: NOI-4 would be less than significant.

5.13.5 CUMULATIVE IMPACTS

NOI-5: Buildout of the General Plan 2040, in combination with past, present, and reasonably foreseeable projects, would result in potentially significant cumulative impacts with respect to noise. The analysis of the proposed project, discussed above, addresses cumulative impacts with regard to noise, groundborne noise, and vibration. Similarly, the noise contours and traffic-related noise levels developed for the proposed project include and account for regional travel patterns as they affect traffic levels in the Redding Planning Area. Noise contours were based on both existing and projected future traffic volumes that incorporate cumulative regional effects and trends. Cumulative development conditions would result in increased cumulative roadways noise levels. Consequently, the proposed project's contribution would be cumulatively considerable.

5.13.6 REFERENCES

California Department of Transportation (Caltrans). 2011. I-80 Davis OGAC Pavement Noise Study.

_____. 2013a, September. Technical Noise Supplement ("TeNS").

_____. 2013b. Transportation and Construction Vibration Guidance Manual.

_____. 2020. Traffic Noise Analysis Protocol For New Highway Construction, Reconstruction, and Retrofit Barrier Projects.

FHWA (Federal Highway Administration). 1978, December. Federal Highway Traffic Noise Prediction Model. United States Department of Transportation Report No. FHWA-RD77-108.

FTA (Federal Transit Administration). 2018, September. Transit Noise and Vibration Impact Assessment Manual. US Department of Transportation.

Governor's Office of Planning and Research. 2017. State of California General Plan Guidelines.

Harris, Cyril M. 1998. Handbook of Acoustical Measurements and Noise Control. 3rd edition. Woodbury, NY: Acoustical Society of America.

Redding, City of. 2005, March. Benton Airpark Master Plan.

_____. 2015, November. Redding Municipal Airport Master Plan.

5.14 POPULATION AND HOUSING

This section of the Draft Environmental Impact Report (DEIR) examines the potential for socioeconomic impacts of the proposed Redding General Plan on the City of Redding and its Sphere of Influence (SOI), including changes in population, employment, and demand for housing, particularly housing cost/rent ranges defined as "affordable."

5.14.1 ENVIRONMENTAL SETTING

5.14.1.1 REGULATORY FRAMEWORK

State Regulations

California Housing Element Law

California planning and zoning law requires each city and county to adopt a general plan for future growth (California Government Code Section 65300). This Plan must include a housing element that identifies housing needs for all economic segments and provides opportunities for housing development to meet that need. At the state level, the Housing and Community Development Department (HCD) estimates the relative share of California's projected population growth that would occur in each county based on California Department of Finance population projections and historical growth trends. These figures are compiled by HCD in a Regional Housing Needs Assessment (RHNA) for each region of California. Where there is a regional council of governments (COG) , the HCD provides the RHNA to the council. The council then assigns a share of the regional housing need to each of its cities and counties. The process of assigning shares gives cities and counties the opportunity to comment on the proposed allocations. Shasta County does not have a COG and the Shasta County Regional Transportation Agency (SRTA) performs the function of a COG for the cities and the unincorporated area of Shasta County by acting as a clearinghouse and working with the local jurisdictions to determine the appropriate allocation of the RHNA among them.

State law recognizes the vital role local governments play in the supply and affordability of housing. To that end, California Government Code requires that the housing element achieve legislative goals to:

- Identify adequate sites to facilitate and encourage the development, maintenance, and improvement of housing for households of all economic levels, including persons with disabilities.
- Remove, as legally feasible and appropriate, governmental constraints to the production, maintenance, and improvement of housing for persons of all incomes, including those with disabilities.
- Assist in the development of adequate housing to meet the needs of low- and moderate-income households.

- Conserve and improve the condition of housing and neighborhoods, including existing affordable housing. Promote housing opportunities for all persons regardless of race, religion, sex, marital status, ancestry, national origin, color, familial status, or disability.
- Preserve for lower income households the publicly assisted multifamily housing developments in each community.
- California housing element laws (California Government Code §§ 65580–65589) require that each city and county identify and analyze existing and projected housing needs within its jurisdiction and prepare goals, policies, and programs to further the development, improvement, and preservation of housing for all economic segments of the community commensurate with local housing needs.

Housing Accountability Act

The Housing Accountability Act (HAA) requires that cities approve applications for residential development that are consistent with a city's general plan and zoning code development standards without reducing the proposed density. Examples of objective standards are those that are measurable and have clear criteria that are determined in advance, such as numerical setback, height limit, universal design, lot coverage requirement, or parking requirement. Under the HAA, an applicant is entitled to the full density allowed by the zoning and/or general plan provided the project complies with all objective general plan, zoning, and subdivision standards and provided that the full density proposed does not result in a specific, adverse impact on public health and safety and cannot be mitigated in any other way.

Assembly Bill (AB) 648 amends the HAA by increasing the documentation and standard of proof required for a local agency to legally defend its denial of low-to-moderate-income housing development projects. If the local agency considers the housing development project to be inconsistent, not in compliance, or not in conformity, this Bill requires the local agency to give the applicant, within specified time periods, written documentation identifying the provision or provisions and an explanation of the reason or reasons it considers the housing development to be inconsistent, not in compliance, or not in conformity. If the local agency fails to provide this documentation, the housing development project is deemed consistent, compliant, and in conformity with the applicable plan, program, policy, ordinance, standard, requirement, or other similar provision.

AB 1515: Reasonable Person Standard

AB 1515 specifies that a housing development project is deemed consistent, compliant, and in conformity with an applicable plan, program, policy, ordinance, standard, requirement, or other similar provision if there is substantial evidence that would allow a reasonable person to conclude that the housing development project or emergency shelter is consistent, compliant, or in conformity. This Bill added additional findings related to the Housing Accountability Act in this regard.

Senate Bill 330 (SB 330)

SB 330 Housing Crisis Act of 2019 states that until January 1, 2025, an application would be deemed complete if a preliminary application was submitted and it complied with the applicable objective general plan and zoning standards in effect at the time. The Planning and Zoning Law requires a public hearing be held on an application for a variance from the requirements of a zoning ordinance or an application for a conditional use permit. However, this Bill prohibits any City or County from conducting more than five hearings held pursuant to these provisions if a housing development project complies with the applicable objective general plan and zoning standards in effect at the time an application is deemed complete. Additionally, this Bill would reduce the time for which a lead agency can approve or disapprove a project from 120 days to 90 days. Furthermore, SB 330 prevents local governments from downzoning unless they upzone an equivalent amount elsewhere within their boundaries and suspends the enactment of local downzoning and housing construction moratoriums.

Regional Regulations

Shasta Regional Transportation Agency

The 2018 Shasta Regional Transportation Agency (SRTA) Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS) was adopted on October 9, 2018 (SRTA 2018a). The purpose of the RTP/SCS is to "encourage and promote the safe and efficient management, operations, and development of a regional intermodal transportation system that, when linked with appropriate land use planning, will serve the mobility needs of goods and people. The RTP/SCS planning is an iterative process, building upon previous efforts and taking into account recent accomplishments and an ever-evolving demographic, political, economic, and environmental setting. The 2022 RTP/SCS is currently underway.

Local Regulations

2000-2023 Redding General Plan

The following goals and policies included in the existing General Plan are applicable to population and housing. The numbering is from the existing General Plan and therefore may not be consecutive.

Air Quality Element

- Goal 1: Effective communication, cooperation, and coordination in developing and implementing community and regional air quality programs.
    - Policy 11 Transit and Affordable Housing: The City should work with the Housing Authority, transit providers, and developers to accommodate the construction of low-income housing developments that use transit-oriented and pedestrian-oriented design principles.
- Goal 2: Reduce motor vehicle trips and vehicle miles traveled and increase average vehicle ridership.

- Policy 18 High Density and Transit: The City shall, as much as possible, continue to plan high-density development in areas that can be fitted with a transit system.
- Policy 19 Mixed Use—Bicyclists and Pedestrians: The City shall continue to encourage mixed-use developments near employment centers that provide commercial services such as day-care centers, restaurants, banks, and stores.
- Policy 23 Higher Densities: The City shall consider redesignating vacant lands suitable for higher densities and transit/pedestrian-oriented developments during future General Plan updates and periodic reviews.

Economic Development Element

- Goal ED1: Attract new primary and other industries which are proven to provide higher-paying jobs and multipliers that will create more balanced and stable economy.
  - Policy ED1A: Maintain an inventory of developable industrial land free of significant development constraints in order to accommodate projected industrial growth over a 20-year time frame.
  - Policy ED1B: Establish an economic development fund using a portion of proceeds from the sale of surplus property or other appropriate revenue sources to acquire/improve industrial sites, provide financial incentives, or to undertake other initiatives to accomplish the goals of this element.
  - Policy ED1C: Facilitate the acquisition and development of one or more large industrial sites as a means of attracting appropriate industrial or distribution facilities.
  - Policy ED1D: Continue to utilize the Shasta Metro Enterprise Zone, the job credit incentive program, and other economic incentives to attract primary and other industries to Redding.
  - Policy ED1E: Work with the Economic Development Corporation, Shasta County, the Cities of Shasta Lake and Anderson, and other appropriate entities to market the area's opportunities to those industries with the highest potential of meeting economic and fiscal goals.
  - Policy ED1F: Facilitate appropriate training for both existing jobs and in preparation for the needs of new employers by:
    - Supporting practical job training and vocational programs geared to specific industries and occupational needs within the community.
    - Continuing to encourage the development of a four-year university within the region.
    - Attracting technical and business schools to the City.
  - Policy ED1G: Pursue environmental mitigation strategies designed to remove impediments to industrial growth, including mitigation banks, habitat conservation plans, regional storm-water detention, and air quality programs.

- Policy ED1H: Facilitate establishment of air cargo and similar transportation- and aviation-oriented businesses at the Redding Municipal Airport through appropriate facility planning and expansions.
- Policy ED1I: Encourage and facilitate the establishment of a rail-side facility for freight-container loading/unloading in cooperation of the Union Pacific Railroad to augment rail transportation opportunities.
- Policy ED1J: Streamline the development and economic development process through code revisions and internal policies and project review efficiencies.
- Policy ED1K: Support public and private efforts to create viable incubator projects and other appropriate programs.
- Policy ED1L: Explore opportunities to leverage existing utility infrastructure to provide high-bandwidth telecommunication connections to properties in industrial areas.

- Goal ED2: Facilitate the retention and expansion of existing businesses.
  - Policy ED2A: Identify and remedy any City impediments to the retention/expansion of existing businesses in Redding.
  - Policy ED2B: Foster a better business climate by enhancing communication among the business community and City administration.
  - Policy ED2C: Develop a Business Retention and Expansion Incentive Program for existing primary industries and other industries that provide higher-paying jobs and multipliers within the local economy.
- Goal ED3: Utilize economic incentives in a cost-effective manner; ensure that the use of inventive results in substantial benefits to the residents of the City.
  - Policy ED3A: Utilize City-sponsored incentives for those businesses that demonstrate a long-term commitment to the community.
  - Policy ED3B: Ensure that City-sponsored incentives provided will result in a net economic benefit for the City and its residents.
  - Policy ED3C: Utilize incentives in a manner that maintains community standards and a sound financial base for infrastructure.
  - Policy ED3D: Analyze proposed incentives from both fiscal and economic perspectives, including using a return-on-investment methodology.
  - Policy ED3E: Leverage funds for City-sponsored incentives from a combination of sources such as redevelopment, Community Development Block Grant, and other programs where feasible.
- Goal ED5: Maintain and expand Redding's influence as a regional retail trade center.

- Policy ED5A: Pursue development of a new convention center and conference facilities in order to remain competitive in the convention industry.
- Policy ED5B: Encourage proposals for major shopping, specialty retail, cultural, entertainment, tourism, and convention facilities that are regional in scope and which will strengthen Redding's position as the North State hub for these activities.
- Policy ED5C: Consider providing financial incentives for regional retail developments where retail sales leakage will be reduced. Establish return-on-investment criteria for public funds.
- Policy ED5D: Support efforts to increase the number of businesses operating in Redding to generate more sales tax, transient occupancy tax, and business and personal property taxes.
- Policy ED5E: Aggressively promote the City to the visitor and convention markets.
- Policy ED5F: Support efforts directed at capturing sales taxes from Internet and catalog sales.
- Policy ED5G: Support efforts to expand medical facilities and services in the community.

- Goal ED6: Establish the downtown area as a vibrant, healthy City core that serves as the City's social, cultural, and specialty retail center.
  - Policy ED6A: Facilitate the revitalization and redevelopment of the Downtown Redding core.
  - Policy ED6B: Preserve and enhance historic structures that contribute to the unique character of Downtown and add to the Downtown pedestrian retail attraction.
  - Policy ED6C: Explore the feasibility of assuming responsibility for portions of the state highway system in Downtown.
  - Policy ED6D: Facilitate additional attractions and amenities that bring people Downtown, including restaurants, local shopping, festivals/special events, and entertainment.
  - Policy ED6E: Encourage retail diversity, including the establishment of small specialty retail shops in the Downtown and Park Marina Drive areas.
  - Policy ED6F: Facilitate and promote the expansion of cultural and entertainment opportunities Downtown that will attract retail customers during nonpeak hours.

City of Redding 2020-2028 Housing Element

The City's Housing 2020-2028 Housing Element includes the following policies pertaining to housing stock:

- Policy H1A: Encourage the private rehabilitation of housing.
- Policy H1C: Support effective code-enforcement activities in existing residential neighborhoods.
- Policy H2C: In accordance with state law, provide density bonuses and other incentives as cost-saving development concessions to encourage the private development of affordable housing.
- Policy H2D: Develop working partnerships with other community providers of housing services in order to increase affordable housing opportunities.

- Policy H2G: Facilitate the construction of "Accessory Dwelling Units" (ADUs) as a viable means of providing affordable housing.
- Policy H2H: Promote infill development where adequate public service exist.
- Policy H5A: Develop and maintain programs that ensure a wide range of housing choices to all in the community.

City of Redding Municipal Code

The Zoning Ordinance is codified as Title 18 of the Redding Municipal Code. The purpose of this title is to promote the public health, safety, and welfare of the City and to provide the economic and social advantages, which result from an orderly, planned use of the environment. The Zoning Ordinance implements the City's General Plan, and establishes regulations governing the use, placement, spacing, and size of land and buildings. The Zoning Ordinance also describes various permits available through the Planning Division, when they are needed, and the process for obtaining permits.

5.14.1.2 EXISTING CONDITIONS

SRTA is the agency responsible for developing and maintaining travel demand forecasting methods and models for the region. SRTA's Shasta Activity Based travel demand model (known as ShastaSIM) was developed to comply with SB 375 and therefore incorporates land use considerations into its forecasts for Vehicle Miles Traveled (VMT). As discussed in Chapter 3, *Project Description*, ShastaSIM was used to develop the VMT projections of the proposed project by incorporating assumptions about future development within the City, including pending and approved projects and the annexation of land near Shasta College. These assumptions were also used to develop estimates and forecasts for the dwelling units, employment and school enrollment of the City and SOI for 2020 and 2045.

Population

According to the California Department of Finance (DOF), the 2022 population of the City of Redding is 92,963, and the total population of Shasta County is 180,531 (DOF 2022). Table 5.14-1, *Population Trends in the City of Redding and Shasta County,* shows the population trends in the City of Redding and Shasta County from 2012 to 2022.

TABLE 5.14-1 POPULATION TRENDS IN THE CITY OF REDDING AND SHASTA COUNTY 2012 - 2023

Year	City of Redding		Shasta County	
	Population	Percent Change	Population	Percent Change
2012	90,376	N/A	178,076	N/A
2013	90,678	0.33%	178,866	0.44%
2014	90,901	0.25%	179,136	0.15%
2015	91,052	0.17%	179,113	-0.01%
2016	90,630	-0.46%	177,785	-0.74%
2017	90,765	0.15%	177,770	-0.01%
2018	90,995	0.25%	178,302	0.30%
2019	91,621	0.69%	177,633	-0.38%
2020	93,836	2.42%	182,155	2.55%
2021	93,879	0.05%	182,020	-0.07%
2022	92,963	-0.98%	180,531	-0.82%
2023	92,465	-0.54%	179,436	-0.61%

Source: DOF 2023.

Housing

Housing Growth Trends

Table 5.14-2, *Housing Unit Growth Trends in the City of Redding and Shasta County,* shows the rate of housing growth has varied over the years.

TABLE 5.14-2 HOUSING UNIT GROWTH TRENDS IN THE CITY OF REDDING AND SHASTA COUNTY

Year	City of Redding		Shasta County	
	Housing Units	Percent Change	Housing Units	Percent Change
2012	38,880	N/A	77,689	N/A
2013	39,001	0.31%	77,853	0.21%
2014	39,099	0.25%	77,980	0.16%
2015	39,204	0.27%	78,115	0.17%
2016	39,423	0.56%	78,379	0.34%
2017	39,557	0.34%	78,537	0.20%
2018	39,679	0.31%	78,745	0.26%
2019	39,751	0.18%	78,027	-0.91%
2020	40,083	0.84%	79,380	1.73%
2021	40,253	0.42%	79,721	0.43%
2022	40,287	0.08%	79,865	0.18%
2023	40,509	0.55%	80,211	0.43%

Source: DOF 2021, 2022.

Regional Housing Needs Assessment

As shown in Table 5.14-3, *City of Redding 2018-2028 Regional Housing Needs Assessment,* the City of Redding's Regional Housing Needs Assessment (RHNA) for the 2018-2028 planning period is 2,091 units. The City is required to demonstrate that there is sufficient land to accommodate the RHNA, but is not required to physically construct the housing units. The RHNA is captured within the existing land use pattern and no changes to land use are necessary to accommodate the RHNA.

TABLE 5.14-3 CITY OF REDDING 2018–2028 REGIONAL HOUSING NEEDS ASSESSMENT

Income Category	Number of Units	Percentage
Very Low	502	24.01%
Low	336	16.07%
Moderate	360	17.22%
Above Moderate	893	42.71%
Total	**2,091[1]**	**100%**

Source: Redding 2018.

[1] RHNA units before adjustments

Employment

Employment Trends

According to the California Employment Development Department, the growth rate of employment in the City of Redding and Shasta County varied over the years. The City of Redding and Shasta County employment and annual employment change percentages are shown in Table 5.14-4, *City of Redding and Shasta County Employment Trends.*

TABLE 5.14-4 CITY OF REDDING AND SHASTA COUNTY EMPLOYMENT TRENDS

	City Of Redding		Shasta County	
Year	Employment (Persons)	Percent Change	Employment (Persons)	Percent Change
2012	34,800	N/A	65,000	N/A
2013	35,400	1.72%	66,100	1.69%
2014	36,200	2.26%	67,500	2.12%
2015	36,700	1.38%	68,300	1.19%
2016	37,200	1.36%	69,000	1.02%
2017	37,400	0.54%	69,600	0.87%
2018	37,700	0.80%	70,200	0.86%
2019	37,600	-0.27%	69,400	-1.14%
2020	36,200	-3.72%	66,600	-4.03%
2021	36,900	1.93%	67,800	1.80%

Source: EDD 2022.

Existing Employment

Table 5.14-5, *City of Redding; Industry by Occupation (2012 and 2020),* shows the City's total workforce by occupation and industry in 2012 and 2020. According to the U.S. Census estimates, the City of Redding had an employed civilian workforce (16 years and older) of 36,433 in 2012 and 39,567 in 2020.

TABLE 5.14-5 CITY OF REDDING; INDUSTRY BY OCCUPATION (2012 AND 2020)

Industry/Occupation	Number of Employees In 2012	Number of Employees In 2020
Management, Business, Science, and Art Occupations	12,751	14,141
Service Occupations	7,531	9,225
Sales and Office Occupations	9,820	8,853
Natural Resources, Construction, and Maintenance Occupations	3,406	3,388
Production, Transportation, and Material Moving Occupations	2,925	3,960
Total	**36,433**	**39,567**

Source: U.S. Census Bureau 2022.

Jobs-Housing Ratio

The jobs-housing ratio is a general measure of the total number of jobs and number of housing units in a defined geographic area, without regard to economic constraints or individual preferences. The balance of jobs and housing in an area, in terms of the total number of jobs and housing units in addition to the type of jobs versus the price of housing, has implications for mobility and air quality. The job-housing ratio is one indicator of a project's effect on growth and quality of life in the project area. There is no ideal jobs-housing ratio adopted in state, regional, or city policies. The American Planning Association (APA) is an authoritative resource for community planning best practices, including recommendations for assessing jobs-housing rations. Although APA recognizes that an ideal jobs-housing ratio will vary across jurisdictions, it recommend target for an appropriate jobs-housing ratio is 1.5 jobs for each housing unit, with a recommended range of 1.3 to 1.7 (Weitz 2003).

The 2020 jobs-housing ratio is 1.25, which is considered balanced. The growth estimated in Table 3-2, *2045 General Plan Planning Horizon Forecast* would result in a jobs-housing ratio of 1.27, thereby keeping the city balanced.

5.14.2 THRESHOLDS OF SIGNIFICANCE

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

PH-1 Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).

PH-2 Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

5.14.3 PROPOSED GENERAL PLAN POLICIES

The following are policies of the 2023-2045 General Plan Update relevant to population and housing impacts.

Community Development and Design Element

- Policy CDD1B: Consider annexation of additional lands under any of the following circumstances. The annexation will result in:
  - A more logical service area boundary.
  - The elimination of an existing County "island."
  - More efficient provision of urban services.

  Modifications to the Primary Growth Area boundary will be considered when the land supply for housing development declines to a ten-year supply or less as and/or when appropriate land for any the following uses is identified:
  - Industrial development.
  - As appropriate, assist in expansion of community-wide educational services, including, but not limited to Shasta Community College or other public institution(s).
  - Providing additional higher density residential lands to support the workforce.
  - Providing student housing.
  - Meeting the goals of the Housing Element.
- Policy CDD11B: Maximum residential densities within a given range of the land use classifications of this General Plan are appropriate for projects that demonstrate superior design features and amenities and/or the development is an affordable housing project that is supported by financial aid or other assistance provided by the City of Redding.
- Policy CDD11E: Facilitate to the extent feasible, the construction of new affordable housing units that are within walking distance to transit, everyday services, schools, and employment centers.
- Policy CDD11H: Strive to create diverse housing options for all income levels in infill priority areas, by encouraging commercial centers to combine residential uses and increase the site potential.
- Policy CDD11J: Encourage the construction of Accessory Dwelling Units and Junior Accessory Dwelling Units in single family residential districts consistent with State law to increase the housing stock and provide more affordable housing options in support of the goals of the Housing Element.

Economic Development Element

- Policy ED1A: Actively promote and encourage opportunities local economic development, education, housing, local hiring, internships, and employment from cradle to career so as to increase resident retention, improve and grow a strong local economy, achieve a positive jobs-housing match; retain critical educational resources and human capital, reduce regional commuting, gas consumption and greenhouse gas emissions, and ensure equitable opportunities for all residents in the City and region to thrive.
- Policy ED2A: Work with the Shasta County Economic Development Corporation (EDC) and other appropriate organizations to attract large business investments to the region that can grow the local economy, ideally leading to an increase the median household income.
- Policy ED2C: Strive to establish Redding as a recognized host for innovative industries in the North State.
- Policy ED2D: Support partnerships and community efforts that increase the resilience of local businesses that draw visitors to Redding and create a desirable community to live in.
- Policy ED2E: Encourage the use of opportunity zones and other programs to attract economic investment opportunities.
- Policy ED2J: Endeavor to develop policies that encourage opportunities in the informal (gig) economy such as ride-share, at-home businesses, and other future opportunities.
- Policy ED2K: Encourage commercial growth and actively seek new retail business that establishes Redding as a retail hub for the North State.
- Policy ED4A: Strive to regularly assess the availability and cost of housing and to pursue available programs to help ensure that people who work in Redding can live in Redding.
- Policy ED4B: Support community efforts in childcare, healthcare, education, and transportation to mitigate barriers to entry into the workforce to the extent feasible.
- Policy ED4C: Endeavor to assist efforts to attract and retain professionals in fields with current and anticipated shortages (such as engineers, medical professionals, and educators).
- Policy ED4D: Encourage market-rate housing development and income-qualifying housing development to achieve adequate levels of workforce housing.
- Policy ED4E: Continue to be an employer of choice in the region by modeling best employer practices as supported by the City Council.
- Policy ED4F: Pursue unique financial and other opportunities that may become available to proactively communicate with local employers as appropriate. Consider partnering with other organizations to develop training programs to promote employment for residents of all ages and abilities and reduce barriers to employment.

- Policy ED4G: Explore opportunities to expand the local childcare market, including with partnerships and grant funding, as a method of activating additional areas of the local labor force as funding and staffing levels allow.
- Policy ED4H: Support community partners in education to expand the capacity of specialized programs in areas of need, such as medical education, as feasible.
- Policy ED5A: Encourage the diversity of innovative small and local businesses, including startups, that advance tourism in Redding.
- Policy ED5B: To the extent feasible, leverage partnerships to directly market Redding to specialty retail, cultural, and entertainment businesses to foster interest in local development.
- Policy ED5C: Leverage partnerships as appropriate to recruit additional hospitality businesses to increase exposure to the tourism market.
- Policy ED5D: Consider alternative mechanisms of reinvesting tourism related taxes, such as transient occupancy tax, to assist in revitalizing neighborhoods in need of assistance.
- Policy ED5E: Consider utilizing existing special districts and establishing new districts to take advantage of distinct economic opportunities such as tourism.

5.14.4 IMPACT DISCUSSION

PH-1	Implementation of the proposed project would directly result in population growth in the project area. [PH-1]

One of the purposes of a general plan is to adequately plan for and accommodate future growth. As shown in Table 3-2, *2045 General Plan Planning Horizon Forecast*, in Chapter 3, *Project Description,* growth under the 2023-2045 General Plan would result in an increase of 8,066 housing units and 9,781 jobs within the City and SOI. As a result of the 8,066 projected housing units, Redding would be expected to experience a growth of 19,439 additional residents based on the Department of Finance's average persons per household of 2.41 for the City of Redding in 2020. A project would induce unplanned population growth if it conflicted with a local land use plan (e.g., a General Plan) and induced growth in areas that are not addressed in a General Plan or other land use plan. The 2023-2045 General Plan Update does not propose any changes to existing land use designations and zoning that would induce additional population. The growth projections shown in Table 3-2, *2045 General Plan Planning Horizon Forecast* reflect the growth that is expected to occur in the City over the next 22 years under existing land uses and incorporates approved/pending projects in the City, as determined under the ShastaSIM travel demand model (see Chapter 3, *Projection Description*, for more details). When compared to the forecasted population in SRTA's Model Development Report for the City in 2040, the 2023-2045 General Plan would result in 6,974 additional residents in the City by 2045. It should be noted that growth under the 2023-2045 General Plan would not be considered "unplanned" as the ShastaSIM projections are based on the General Plan.

Development of housing units to accommodate anticipated growth has potential to result in significant environmental impacts. Future development under the 2023-2045 General Plan Update would be reviewed on a case-by-case basis to ensure compliance with General Plan goals, policies, and implementation actions. Mitigation measures would be implemented as necessary to ensure that increases in population do not have an adverse impact on the environment or on human beings, either directly or indirectly. Therefore, the potential for adverse impacts would be less than significant.

Level of Significance Before Mitigation: Impact PH-1 would be less than significant.

Mitigation Measures

No mitigation measures are required.

PH-2	Project implementation would not result in displacing a substantial number of people and/or housing, necessitating the construction of replacement housing elsewhere. [PH-2]

Implementation of proposed project is not expected to result in the displacement of a substantial number of housing units. Under the proposed project, the General Plan Diagram (i.e., land use map) would not be modified and the existing land use classifications and configurations would remain unaffected. Therefore, parcels designated for residential uses would not change. Within identified "Opportunity Areas" the project envisions incentivizing aging strip commercial areas to be redeveloped in a mixed-use manner, thereby increasing housing opportunities and providing updated neighborhood amenities and employment opportunities.

The City's Housing Element includes policies calling for the development of housing units, such as Policy H1A, which encourages the private rehabilitation of housing, Policy H2C, which calls for the provision of incentives to encourage development of affordable housing, and Policy H2H, which promotes infill development. Compliance with these policies would encourage the development of housing, thereby ensuring that residents and housing are not displaced. Additionally, Government Code Section 66300(d)(2) requires that any project that would demolish residential units must create at least as many units as will be demolished.

As such, the proposed project would not displace residents or housing. The proposed project could potentially result in the development of additional housing units in areas that did not previously accommodate housing, such as the "Opportunity Areas." The proposed project would not redesignate land currently designated for residential uses to non-residential uses. Therefore, impacts would be less than significant.

Level of Significance Before Mitigation: Impact PH-2 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.14.5 CUMULATIVE IMPACTS

PH-3	The proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in less-than-significant cumulative impacts with respect to population and housing.

The context for the cumulative population and housing impacts would be potential future development under the proposed project combined with development on lands adjacent to the City's Planning Area. As described in impact discussions PH-1 and PH-2, implementation of the proposed project would not induce a substantial amount of unplanned population growth or growth for which inadequate planning has occurred, or displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere. The proposed and existing General Plan goals and policies would provide adequate planning to accommodate the proposed new increase in growth in the City's planning boundaries. Therefore, the proposed project would not result in a cumulatively considerable impact to population and housing, and cumulative impacts would be less than significant.

Level of Significance Before Mitigation: Impact PH-3 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.14.6 REFERENCES

California Department of Finance (DOF). 2021, May 7. Report E-5: Population and Housing Estimates for Cities, Counties, and the State, January 1, 2011-2020, with 2010 Benchmark. https://dof.ca.gov/forecasting/demographics/estimates/estimates-e5-2010-2020/

_____. 2022, May. Report E-5: Population and Housing Estimates for Cities, Counties and the State — January 1, 2021-2022. https://dof.ca.gov/forecasting/demographics/estimates/e-5-population-and-housing-estimates-for-cities-counties-and-the-state-2020-2022/

Employment Development Department (EDD). 2022. Unemployment Rates (Labor Force). https://www.labormarketinfo.edd.ca.gov/cgi/dataanalysis/areaselection.asp?tablename=labforce

Redding, City of. 2018. City of Redding Housing Element. https://www.cityofredding.org/home/showpublisheddocument/5503/637363012065000000

Shasta Regional Transportation Authority. 2011. 2018 Regional Transportation Plan and Sustainable Communities Plan – Appendix 1: Shasta County Forecast Assumptions Memorandum. https://www.srta.ca.gov/DocumentCenter/View/1877/SRTA_2015_RTP_Appendix_1?bidId=

_____. 2018a, October 9. 2018 Regional Transportation Plan and Sustainable Communities Plan. https://www.srta.ca.gov/DocumentCenter/View/4285/2018-Regional-Transportation-Plan--Sustainable-Communities-Strategy-adopted-Oct-9-2018?bidId=

_____. 2018b, October. Model Development Report- ShastaSIM 1.2 Activity Based Travel Demand Model.

U.S. Census Bureau. 2022, November 11 (accessed). American Community Survey S2405: Industry by Occupation for the Civilian Employed Population 16 Years and Over. American FactFinder search S2405. https://data.canary.census.gov/cedsci/table?q=Counts,%20Estimates,%20and%20Projections&g=1600000US0659920&tid=ACSST5Y2020.S2401

Weitz, Jerry. 2003. Jobs-Housing Balance. Planning Advisory Service Report Number 516. American Planning Association.

5.15 PUBLIC SERVICES

This chapter describes the regulatory framework and existing conditions in the Planning Area related to public services, parks, and recreation, and the potential impacts of the proposed project on public services, parks, and recreation.

This chapter covers the following public services and facilities:

- Fire Protection
- Police
- Schools
- Libraries
- Parks and Recreation Facilities

The analysis in this section was informed by correspondence with the Redding Fire Department, Redding Police Department, Shasta County Library System, and the City of Redding Park and Recreation Department:

- *Service Provider Questionnaires*, May 24, 2023. A complete copy of the departments' responses is included as Appendix 5.15-1 to this EIR.

5.15.1 FIRE PROTECTION SERVICES

This section describes current conditions and potential impacts of the proposed General Plan Update with regard to fire protection services in Redding.

5.15.1.1 ENVIRONMENTAL SETTING

Regulatory Framework

State Regulations

California Fire Code

The 2019 California Fire Code (Title 24, Part 9 of the California Code of Regulations) establishes regulations to safeguard against hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures, and premises. The Fire Code also establishes requirements intended to provide safety and assistance to firefighters and emergency responders during emergency operations. The provisions of the Fire Code apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of every building or structure throughout the State of California. The Fire Code includes regulations regarding fire- resistance-rated construction, fire protection systems such as alarm and sprinkler systems, fire services feature such as fire

apparatus access roads, means of egress, fire safety during construction and demolition, and wildland-urban interface areas.

California Health and Safety Code

Additional state fire regulations are set forth in Section 13000 et seq. of the California Health and Safety Code, which include regulations for building standards, fire protection and notification systems, fire protection devices such as extinguishers, smoke alarms, highrise building and childcare facility standards, and fire suppression training.

California Occupational Safety and Health Administration

In accordance with the California Code of Regulations, Title 8, Sections 1270, Fire Prevention, and 6773, Fire Protection and Fire Fighting Equipment, the California Occupational Safety and Health Administration (Cal/OSHA) has established minimum standards for fire suppression and emergency medical services. The standards include, but are not limited to, guidelines on the handling of highly combustible materials; fire hose sizing requirements; restrictions on the use of compressed air; access roads; and the testing, maintenance, and use of all firefighting and emergency medical equipment.

Local Regulations

2000-2020 Redding General Plan

The following policies are included in the existing General Plan regarding fire protection services. The numbering is from the existing General Plan and therefore may not be consecutive.

Public Facilities and Services Element

- Goal PF4: Ensure adequate fire protection and emergency medical response for residents and businesses in the community
    - Policy PF4A: Establish the following thresholds for fire protection services:
        - Maintain a community ISO rating of 3 or better.
        - Respond to 90 percent of all calls within 5 minutes of being dispatched.
    - Policy PF4B: Endeavor to maintain the minimum response time for fire calls through adequate staffing, proper distribution of fire stations and equipment, and use of automatic aid agreements.
    - Policy PF4B: Construct new and possibly relocate existing fire stations as needed to maintain service thresholds.
    - Policy PF4D: Utilize the following factors to determine the location and type of firefighting equipment that is needed:

- The concentration of structures in a given area.
- The available water supplies.
- The availability of automatic aid.
- The amount of area to be protected.
- The kind of fires to be encountered.
- Desired response times.

- Policy PF4E: Implement ordinances to protect life, control fire losses and fire protection costs through the use of automatic suppression systems.

- Goal PF20: Achieve and maintain adopted facility and service standards through the use of equitable funding methods and innovative strategies.
  - Policy PF20A: Determine the demand for new public facilities created by new development as compared to the demand for new facilities created by the community as a whole. Based on the results, determine the "fair share" of the financial contributions that are appropriate for both the community at large and new development.
  - Policy PF20B: Prepare an updated impact fee ordinance that requires new development to pay its "fair share" of the cost to build needed public facility improvements. Facilities to be considered include, but are not limited to: public safety, parks, streets and intersections, water treatment and distribution, sewage collection and wastewater treatment, storm drainage, transit, and electric facilities.
  - Policy PF20C: Where appropriate, distribute the responsibility to pay for new public facilities between existing and future development based on their respective demands on the system.
  - Policy PF20D: Identify and pursue alternative funding sources that can be used for: capital improvement project construction, staffing and ongoing maintenance of public improvements. Expand the search for grant funding.
  - Policy PF20E: Require the preparation of a fiscal impact analysis for all specific plans or significant general plan land use amendments and annexations. The analysis will examine the fiscal impacts on the City and other service providers that result from large scale development. The fiscal analysis shall project a positive fiscal impact form new development or include mechanisms to fund projected fiscal deficits. Exceptions may be made when new development generates significant public benefits (e.g., low-income housing, primary-wage-earner employment) and when alternative sources of funding can be obtained to offset foregone revenues.

Health and Safety Element

- Goal HS4: Minimize the potential for loss of life, injury, and property damage resulting from urban and wildland fires.
    - Policy HS4A: Maintain an Insurance Service Office (ISO) rating of 3 or better.
    - Policy HS4B: Require that all new development and redevelopment meet state and local standards for fire protection; encourage the upgrade of existing structures to current standards.
    - Policy HS4C: Work with local water districts to ensure that district systems are developed, maintained, and monitored to provide minimum fire-flow, rates, and peak-load capacity for fire suppression.
    - Policy HS4D: Require remote hillside developments to maintain sufficient water supplies on-site, when appropriate, to provide wildland fire protection. Water supplies may be stored in the form of ponds, storage tanks, or other features acceptable to the Fire Marshal.
    - Policy HS4E: Utilize appropriate techniques, such as those illustrated in Figure 4-8, to reduce fire damage in those areas with a high wildland fire potential. The actual combination of these and/or other techniques required for a particular project will be determined by the Fire Marshal based on the level of hazard involved.
    - Policy HS4F: Construct emergency-vehicle access routes to open-space areas at optimal locations within developments.
    - Policy HS4G: Develop a comprehensive vegetation management and weed-abatement program for open-space areas, including those that are located in existing subdivisions and in new development areas.
    - Policy HS4H: Consider establishing a program to construct and maintain fire-access roads in ravine areas considered to have a very high fire danger to enhance the ability to suppress wildland fires. These roads need not be surfaced and may also function as part of the City's trail system. Erosion and impacts to native vegetation and natural features shall be minimized.
    - Policy HS4I: Amend subdivision regulations to ensure that cul-de-sac lengths are generally no greater than 600 feet and that sufficient emergency-vehicle turnaround areas are provided. Longer cul-de-sacs may be considered if fire-protection measures, such as residential fire sprinkler systems, are incorporated to ensure the safety of residents and emergency-response personnel.

- Policy HS4J: Generally, require each residential development having 50 or more dwelling units and each commercial development employing 150 or more people to have at least two connected points of public access as may be determined necessary by the Fire Marshal.
- Policy HS4K: Maintain and augment mutual and automatic aid agreements with the California Department of Forestry & Fire Protection (CAL FIRE) and Shasta County.
- Policy HS4L: Continue to promote fire prevention through education and public-awareness programs.

Community Development and Design Element

- Goal CDD2: Ensure the ability of the City, school districts, and other public service providers to efficiently provide expected and necessary public facilities and services to their constituents.
  - Policy CDD2A: Require construction of private development projects to be coordinated with the timing and location of public services. Ensure through a combination of development fees and other appropriate funding mechanisms that development pays its fair share of the costs of constructing/providing new facilities and services as determined by the direct impacts that such development has on these essential services.
  - Policy CDD2B: Ensure that new development will not degrade public services below established service levels, that it contributes to the enhancement of services as appropriate, and that the costs of providing public services do not exceed anticipated revenue from the development of the project over the long term.
  - Policy CDD2C: Evaluate public-service impacts as part of environmental review for proposed development projects and require applicants to obtain "will-serve" letters from service providers prior to receiving approval of a final subdivision map or, in the absence of the need for a final subdivision map, prior to receiving approval of any required building permits.
  - Policy CDD2F: Classify City-owned property in Southwest Oregon Gulch as "PF/I" to reserve it for a future reclassification in conjunction with a development plan.

Redding Municipal Code

City of Redding Municipal Code Chapter 2.32, Fire Department, establishes the duties of the Redding Fire Department. Municipal Code Chapter 9.20, Fire Code, adopts the California Fire Code with certain amendments. Pursuant to Section 16.20.150, Fire Facilities Impact Fee, the City levies an impact fee on residential, commercial, office and industrial development to fund new fire stations and equipment; replacement and updating of existing facilities and equipment; and construction of training facilities in

response to development identified in the City of Redding General Plan. This fee was last updated in July of 2022 (Redding 2022b).

Existing Conditions

Divisions

The Redding Fire Department (RFD) provides fire protection, basic life support emergency medical care, rescue services, and fire prevention to the City. The Fire Department is made up of the Administrative Division, the Operations Division, and Community Risk Reduction, formerly known as the Prevention Division. The Administration Division coordinates the activities for the Fire Department. The responsibilities included are setting goals and objectives, recruitment and development, community risk reduction, budget preparations and management, public relations and city leadership, and council communications. The Administrative Deputy Chief oversees the Training, and Community Risk Reduction Divisions and Emergency Management. The City Manager appointed the Fire Chief as the City Emergency Services Coordinator. The Chief coordinates emergency preparedness activities which includes Emergency Operations Plan development, staff training, Emergency Operations Center management and Shasta County Operational Area coordination (Shasta LAFCO 2022).

The Deputy Chief leads the Operations Division. The Division is in charge of the emergency response activities for the City of Redding and the Buckeye Fire Protection District, and fleet, facilities and equipment. The Division has 99 uniformed firefighters that are grouped into three separate shifts that alternate every 24 hours. The staff works throughout the 8 fire stations in the City. The shifts are overseen by a Battalion Chief who also acts as the Incident Commander on all multi company responses. The Division performs structural firefighting, wildland firefighting, aircraft rescue and firefighting (ARFF), emergency medical and rescue response, vehicle extrication, hazardous materials response, shore-based water rescue, public education and outreach, and fire inspections (Shasta LAFCO 2022).

The Fire Marshall leads the Community Risk Reduction Division. The Division's responsibilities include administering fire safety education, fire cause determination, inspection of occupancies, fire code enforcement, and vegetation management. The Fire Prevention programs check compliance and proper safety standards. The staff for the Division includes the Fire Marshall, two Assistant Fire Marshal's, two Fire Inspector/Investigators, and one Fire Prevention Specialist, (Shasta LAFCO 2022).

Fire Stations and Incident Response

The eight fire stations cover 40,709.1 acres or 63.61 square miles consisting of 41,288 structures. The population per station boundary is 93,149, and the density by population based on square mile is 1,464.37. In 2021, there were over 16,000 calls for service. Table 5.15-1, *Redding Fire Stations*, lists details about each fire station and service calls. Figure 5.15-1, *Fire Stations in the Vicinity of Redding*.

TABLE 5.15-1 REDDING FIRE STATIONS

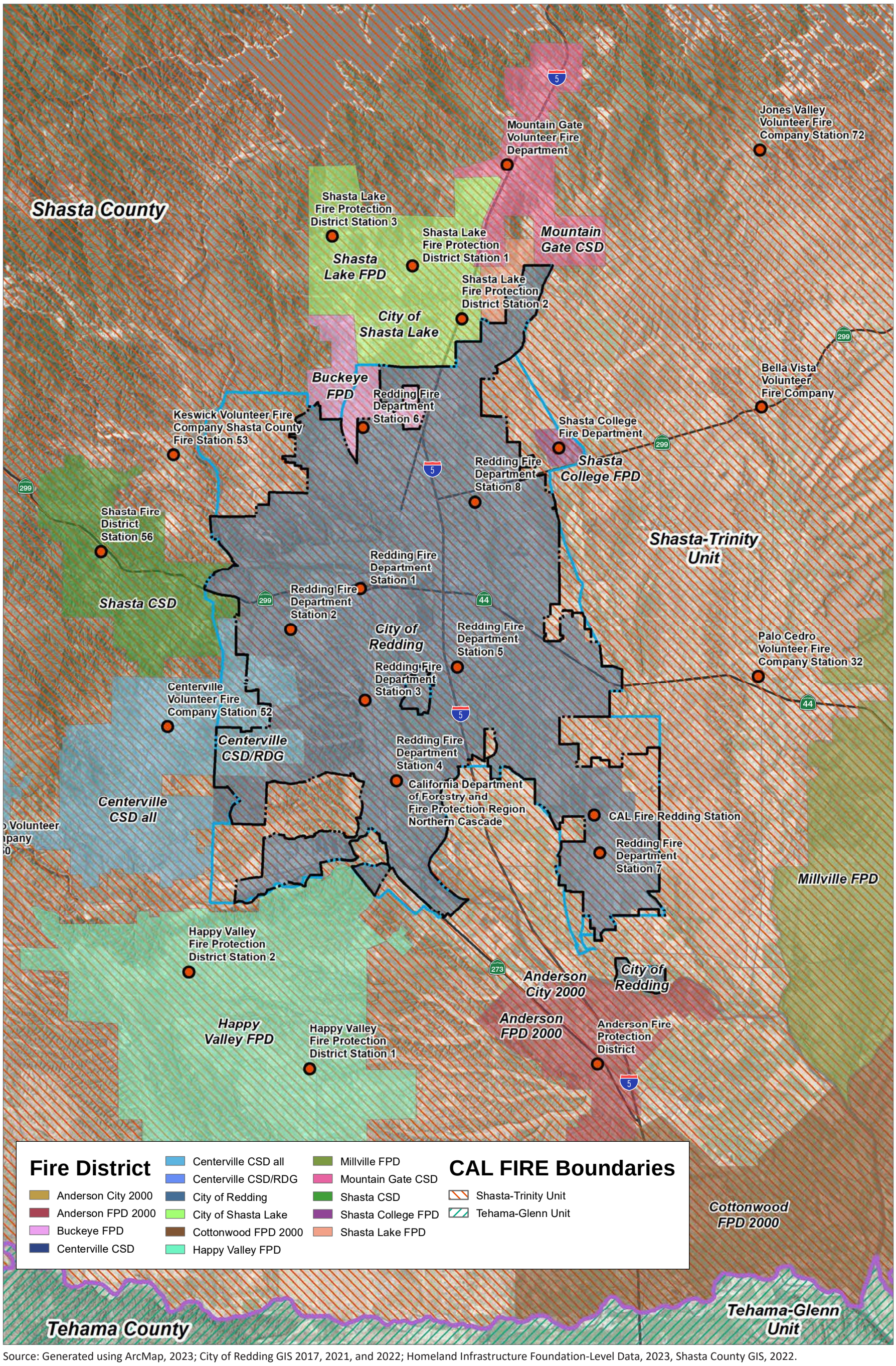
Station Address	Personnel and Equipment	Population Served	Calls for Service (2021)
Station 1 1335 Shasta Street	1 Engine – 3 Personnel 1 Truck – 4 Personnel	10,414	3,655
Station 2 3491 Placer Street	1 Engine – 3 Personnel	9,632	1,149
Station 3 4255 Westside Road	1 Engine – 3 Personnel	7,464	1,519
Station 4 2605 South Bonnyview Road	1 Engine – 3 Personnel	7,790	1,670
Station 5 955 Hartnell Avenue	1 Engine – 3 Personnel	28,049	4,087
Station 6 1695 Beltline Road	1 Engine – 3 Personnel	12,938[1]	1,711
Station 7 3772 Flight Avenue	1 Engine – 3 Personnel Air Rescue Unit – 1 Personnel	884	580
Station 8 131 Churn Creek Road	1 Engine – 3 Personnel	18,935	2,898

Source: Shasta LAFCO 2022;

[1] This includes the population served by the Buckeye Fire Protection District

This page intentionally left blank.

5.15 PUBLIC SERVICES AND RECREATION



Source: Generated using ArcMap, 2023; City of Redding GIS 2017, 2021, and 2022; Homeland Infrastructure Foundation-Level Data, 2023, Shasta County GIS, 2022.

Figure 5.15-1
Fire Stations in the Vicinity of Redding

This page intentionally left blank.

Response Time Standards

The RFD's response time performance measurement for emergency calls is to arrive within 5:59 minutes of being dispatched at least 90 percent of the time Response time is measured from the point at which the agency receives notification from the Shasta Area Communications Agency (SHASCOM), which provides a consolidated dispatch service. The Redding City Council gave preliminary approval to build a ninth fire station, as well as increase Fire Department staffing, buy a new fire truck and engine, and make improvements at the City's eight existing fire stations during its February 15, 2022 budget workshop (Chandler 2022). RFD is dispatched by the Shasta Area Safety Communications Agency, a joint powers agency with several member jurisdictions in Shasta County.

In 2022, RFD maintained a 1:58 minute turnout response time and a 4:13 minute travel response time for half of all calls (see Appendix 5.15-1)

Mutual Aid and Automatic Aid

A mutual aid agreement is in effect with California Department of Forestry and Fire Protection (CalFire) during the wildland fire season for wildland and structure fires within a one-mile fringe area surrounding the City. An automatic aid agreement with the Shasta County Fire Department is also in effect for structure fires outside the wildland fire season. Under these agreements, the Redding Fire Department responds within a one-mile fringe area surrounding the City and to county islands. Shasta County Fire Department responds to a small geographic area on the east side of the City (Redding 2021). The mutual threat zone (mutual aid) agreement enables both RFD and CAL FIRE to maximize resource utilization on wildland fire incidents in the City and surrounding county areas (Redding 2022a). RFD also participates in the Statewide Master Mutual Aid System.

Funding

RFD operations and capital outlays are funded by the City's General Fund, most of which is derived from sales taxes and property taxes (Redding 2022c). Additional funding for site acquisition and construction of fire stations and equipment is provided by development impact fees paid by developers to the City. Table 5.15-2, *Redding Fire Facilities Impact Fees*, shows the impact fee per development type, effective July 1, 2022.

TABLE 5.15-2 REDDING FIRE FACILITIES IMPACT FEES

Development Type	Fee Effective 7/1/2022
Single family (per du)	$1,104.00
Multiple family (per du) (2- 4 units)	$947.00
Multiple family (per du) (5 or more units)	$746.00
Commercial (per 1000 sq ft)	$762.00
Office (per 1000 sq ft)	$1,129.00
Industrial (per 1000 sq ft)	$608.00

Source: Redding 2022b

Wildland Firefighting

Portions of the city—especially the western and northern parts—as well as much of the surrounding land west, east, and north of the city are in Very High Fire Hazard Severity Zones designated by CAL FIRE.

The City is responsible for the cost of wildland firefighting within the City, and Shasta County bears such responsibility in some unincorporated areas south and southeast of the City. The US Forest Service conducts fire suppression in the Shasta-Trinity National Forest, which encompasses much of the northern and western parts of Shasta County. The state is responsible for wildland fire protection in most of the rest of Shasta County. See also the preceding discussion of automatic aid and mutual aid agreements (CAL FIRE 2007).

Existing Service Review

In correspondence with the Redding Fire Department, it was noted that while the department has not adopted a metric for guiding staffing increases, its current staffing model is 1.06 firefighters per 1,000 people covered. A metric of 1.54-1.81 firefighters per 1,000 people protected is a more typical range used by fire departments to determine base staffing models. Additionally, the department notes that factors including climate, topography, and population create a call volume for the department that demands the resources of a metropolitan fire agency. As a rural agency, RFD does not currently have the resources to meet this demand. The department recommends that it adopt the matrix of 1.81 firefighters per 1,000 served because the region lacks the resources to provide adequate mutual aid services to the City (Appendix 5.15-1).

The department also confirmed that the Redding City Council approved the purchase of land for an additional fire station to house a Truck, Engine, and additional Battalion Chief near the intersection of Tarmac Road and Shasta View Drive. In anticipation of the new station, Redding Fire has accepted a SAFER (Staffing For Adequate Fire and Emergency Response) grant from FEMA for an additional 12 positions that will increase staffing on several apparatus. Funding for the new station and remodeling of existing structures has yet to be determined (Appendix 5.15-1).

Furthermore, the department explained the existing deficiencies in service. RPD has no high-angle rescue ability, limited building collapse ability, no confined space or trench rescue ability, and limited water rescue abilities. Additionally, Redding Fire does provide a type II Hazardous materials response team. The department notes that the areas most at risk in the City include the Union Pacific rail line, Interstate 5, the Sacramento River, high and low rise structures, the Redding Regional Airport, earthquake fault lines, and areas directly downstream from Shasta Dam (Appendix 5.15-1).

5.15.1.2 THRESHOLDS OF SIGNIFICANCE

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

PS-1 Result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection and emergency medical facilities or a need for new or physically altered fire protection or emergency medical facilities, the construction of which could cause significant environmental impacts to maintain acceptable service ratios, response times, or other performance objectives.

PS-2 In combination with past, present, and reasonably foreseeable projects, result in cumulative fire protection service impacts in the area.

5.15.1.3 PROPOSED GENERAL PLAN POLICIES

The following policies of the 2023-2045 General Plan are relevant to fire protection services.

Community Design and Development Element

- **Policy CDD2A:** The construction of private development projects should be coordinated with the timing and location of public services. Establish through a combination of development fees and other appropriate funding mechanisms that development pays its fair share of the costs of upgrading existing facilities and/or constructing/providing new facilities and services as determined by the direct impacts that such development has on these essential services.
- **Policy CDD2B:** To the extent feasible new developments shall maintain adequate service levels for existing development while providing for the upgrade/expansion of existing public services as appropriate.
- **Policy CDD2C:** Evaluate public-service impacts as part of environmental review for proposed development projects and require applicants to obtain "will-serve" letters from service providers prior to the approval of a discretionary permit or a building permit.
- **Policy CDD2D:** Work with school districts and public and quasi-public agencies as appropriate in determining the location of needed sites in the planning area for new institutional development and

facilities by reserving sites as a condition of development approval in accordance with the State law. Uses on such sites should be designed to complement the neighborhood's character.

- Policy CDD16F: Consider establishing a comprehensive landscape and vegetation management program that incorporates the City's urban landscape and open space lands to enhance the landscape aesthetic of the City and more effectively protecting the community from wildfire hazards. The program could be responsible for the following and additional activities as may be appropriate:
  - Overseeing the City's street tree program, including recommendations on appropriate trees and long-term maintenance.
  - Reviewing and approval of landscape plans developed in conjunction with private development activities such as commercial and office developments, residential planned developments, proposed landscape maintenance districts, stormwater detention basins, and similar developments and facilities.
  - Review and consider, in concert with appropriate public safety agencies, vegetation modifications and long-term management plans in Redding's wildland-urban interface areas to protect new and existing developments from wildfire.
  - Identifying and seeking local, State, and federal funds as well as grants and other financial resources to accomplish the above activities.

Environmental Justice Element

- Policy EJ6B: Coordinate with water, sewer, waste management, electricity, police, and fire service providers to provide continuation of efficient and effective service, delivery, operations, and maintenance. Identify and prevent potential system vulnerabilities and coordinate with partnering agencies that provide public facilities to establish response teams or contingency plans in case of failure or emergency.
- Policy EJ7D: Expand emergency response services as needed due to community growth. Consider the potential future growth in the "Primary and the Secondary Growth Areas" of the General Plan in planning for the future fire stations, police substations, and related facilities, to meet future needs and demands.
- Policy EJ7E: As funding and resources permit, implement an emergency evacuation plan and consistently educate residents on:
  - Access: Evacuation routes laid out for residents to use in case of emergency.
  - Signage: Signage, wayfinding, and designated evacuation routes.
  - Communication: Timely notices that may arrive in a variety of languages to accommodate the linguistic preferences of all residents and through multiple communication avenues including Assistive Listening Devices.
  - Assistance: Available assistance programs to aid resident evacuation during emergency.

- Policy EJ7G: Consider and implement emergency policies and procedures that appropriately allow service and companion animals to be permitted access to emergency facilities.

Parks, Trails, and Recreation Element

- Policy R2D: Protect and enhance access for public safety, fire and rescue activities to the entire riverfront and creek corridors while minimizing and mitigating impacts to the extent feasible.

Public Facilities and Services Element

- Policy PF1E: Require that infrastructure be designed and constructed to meet ultimate capacity needs, pursuant to a master plan, so as to avoid the need for expensive retrofitting to the extent feasible.
- Policy PF1F: Utilize reimbursement agreements, as reasonably available and where appropriate, when upgraded or oversized facilities are installed by an individual developer and the cost of the facilities exceeds the development's proportional share of responsibility.
- Policy PF1G: Consider prioritizing development through incentives in infill priority areas with readily available infrastructure capacity and services.
- Policy PF1H: Encourage clustering of development to maximize the use and efficiency of available infrastructure and facilities.
- Policy PF3A: Strive to maintain an ISO rating of 3 or better.
- Policy PF3B: Endeavor to establish and maintain the minimum desired response time for fire calls through adequate staffing, proper distribution of fire stations, equipment, and use of automatic aid agreements.
- Policy PF3C: as funding allows, construct new and/or possibly relocate existing fire stations as needed to maintain service thresholds. In determining the location and type of firefighting equipment on the following factors should be considered:
  - Density and intensity of land use areas
  - Water supply
  - Availability of automatic aid
  - Expanse of area to be protected
  - Prevalent fire risks, and
  - Desired response times.
- Policy PF3D: Implement the California Building Code and any local ordinances to protect life, control fire losses and fire protection costs through the use of automatic suppression systems. Adequate water supplies to construct fire suppression infrastructure as necessary should be available.

- Policy PF3E: Collaborate with appropriate agencies as funding allows to promote regional cooperative delivery of fire protection and incorporate technological advancements that enhance the City's ability to deliver efficient and effective fire-rescue, fire protection and emergency medical response.
- Policy PF3F: Strive to ensure through development review, projects adequately address on-site fire safety and protection and comply with applicable fire and building codes.

Public Health and Safety Element

- Policy PS4A: Strive to maintain an Insurance Service Office (ISO) rating of 3 or better.
- Policy HS4B*:* All new development and redevelopment projects should be designed to meet state and local standards for fire protection; encourage the upgrade of existing structures to current standards. Encourage the installation of smoke detectors in residential and commercial facilities constructed prior to the requirement of their installation, as appropriate.
- Policy PS4C: As resources allow, enforce existing codes, standards, and policies, as resources allow, to ensure all new and existing developments provide:
  - Defensible space.
  - Non-combustible design with appropriate building exterior and roofing materials.
  - Spark arresting system, Fire alarms, and fire sprinkler systems are installed.
- Policy HS4D: Continue to include the Fire Department in development review to ensure projects adequately address safety, on-site fire protection, and comply with applicable fire and building codes.
- Policy PS4F: Consider developing and funding a comprehensive vegetation management and weed-abatement program, beyond the wildfire mitigation through the Electric Utility, for City-owned properties, open-space areas, including those that are located in existing subdivisions and in new developments to prevent and reduce the risk of fire.
- Policy PS4G: Consider establishing a program to construct and maintain fire-access roads in ravine areas considered to have a very high fire danger to enhance the ability to suppress wildland fires. These roads need not be surfaced and may also function as part of the City's trail system. Erosion and impacts to native vegetation and natural features shall be minimized.
- Policy PS4H: Work with local water districts to ensure that district systems are developed, maintained, and monitored to provide minimum fire-flow, rates, and peak-load capacity for fire suppression.
- Policy PS4J: Require remote hillside developments to maintain sufficient water supplies on-site, when appropriate, to provide wildland fire protection. Water supplies may be stored in the form of ponds, storage tanks, or other features acceptable to the Fire Marshal.
- Policy PS4J: Utilize techniques, as determined appropriate by the Fire Marshal, to reduce fire damage in those areas with a high wildland fire potential.

- Policy PS4K: Enforce subdivision regulations that generally limit cul-de-sac lengths to no greater than 600 feet and ensure that sufficient emergency-vehicle turnaround areas are provided.
- Policy PS4L: Apply as appropriate, subdivision regulations requiring each residential development having 50 or more dwelling units and each commercial development employing 150 or more people to have at least two connected points of public access as may be determined necessary by the Fire Marshal.
- Policy PS4M: Seek to construct emergency-vehicle access routes to open-space areas at optimal locations within projects during the development process, as funding or law allows. As funding and physical conditions allow, construct such access routes in existing developments where warranted.
- Policy PS4N: Strive to ensure new subdivisions have adequate fire protection measures such as multi-access for firefighting apparatus, noncombustible building construction, appropriate defensible space, street widths and grade to accommodate emergency vehicles and evacuees simultaneously.
- Policy PS4O: Strive to maintain and augment mutual and automatic aid agreements with the California Department of Forestry & Fire Protection (CAL FIRE) and Shasta County. Support local fire protection agencies with efforts to seek funding for development and implementation of a continuous vegetation management program in fire hazard severity zones and WUI regions.
- Policy PS4P: Continue to promote fire prevention through education and public-awareness programs in partnership with local, State and Federal agencies. Update the fire hazard severity zone mapping as new data becomes available and ensure availability and accessibility of these maps to the community.
- Policy PS4Q: Worm toward educating the residents on the importance of fire safety, prevention, and emergency preparedness including vegetation management, decreasing fuel loads, hardening homes and structures, maintaining defensible space, and public safety notifications.
- Policy PS8A: Maintain and periodically update the City's Emergency Response Plan and Local Hazard Mitigation Plan as necessary.
- Policy PS8B: Encourage the involvement of local hospitals, schools, major businesses, utilities, the Red Cross, places of worship, and other service providers in emergency-preparedness planning and Training. Educatetraining. Work toward educating the residents on emergency response, disaster preparedness protocols and procedures and disaster risk reduction.
- Policy PS8C: Collaborate with local and regional jurisdictions to periodically review, exercise and test emergency-service equipment, plans, and shelters to ensure that they are ready for immediate operation in the event of an emergency.
- Policy PS8D: Consider requiring that residences and businesses maintain visible and clearly legible street address numbers to shorten the response time of emergency personnel.
- Policy PS8E: Strive to ensure the continued functioning of critical facilities and the establishment of cooling, warming and clean air centers, as a part of an extreme weather preparedness program. Endeavor to partner with community groups and jurisdictions to develop and implement refuge centers

in case of extreme weather, disease, or evacuation due to declared emergency. Consider adaptive reuse of public and community facilities to serve as shelters during crisis events.

- Policy PS8F: Maintain, update, and make publicly available all comprehensive emergency and evacuation plans and maps which address emergency preparedness, evacuation and rescue, information on hazardous materials, location and information on the protection of critical facilities, and development guidelines to reduce the risk of panic during a disaster and to enhance preparedness, as appropriate.

5.15.1.4 IMPACT DISCUSSION

PS-1	Implementation of the proposed project would not result in the need for new or physically altered fire protection and emergency medical facilities, the construction of which could cause significant environmental impacts to maintain acceptable service ratios, response times, or other performance objectives. [Threshold PS-1]

Increased demands for fire protection and emergency medical services result from increases in in the number of people who reside, work, and recreate in Redding, but can also be related to the type, location, and configuration of land uses. The General Plan Update anticipates that the City's permanent population will increase by approximately 19,439 residents over the next 22 years. Additionally, the General Plan Update anticipates an increase in the number of businesses that will be operating in Redding, including a broad range of commercial, industrial, and warehouse/distribution businesses.

As a result, additional staff and equipment would be required to maintain or achieve desired response times. It is likely that new or expanded facilities would be required, which could include new fire houses or outdoor training areas, depending on the extent to which RFD would be required to expand capacity. As discussed in Section 5.15.2.2, an additional fire station, staffing, and equipment have been proposed to support the City's current population. In correspondence with the department, it was noted that RFD is at its maximum capacity for service and needs additional units to maintain an effective response force.

The department commented that while call volume is anticipated to continue to grow at the same rate as historical data indicates during the planning horizon, outside influences could dramatically change how the department delivers services. The current system uses private ambulance companies to provide basic life support, and advanced life support transports within the City of Redding. In 2022 the ambulance providers responded to about 8,000 additional calls within the city limits that did not require a fire department response. The department notes that if private ambulance companies could no longer afford to provide service to the region, Redding fires call volume would exponentially increase overnight (Appendix 5.15-1).

It is not known at what time or location such facilities would be required in Redding or what the exact nature of these facilities would be. New or expanded facility locations will be influenced by population growth to

serve residents. As a result, it cannot be determined what project-specific environmental impacts would occur from their construction and operation. These potential impacts would be identified during the facility site selection process.

In addition, the proposed 2023-2045 General Plan Update contains policies that aim to provide adequate fire protection and emergency medical response services to serve existing and new development. Policy CDD2A in the proposed Community Design and Development Element requires construction of private development projects to be coordinated with the timing and location of public services and requires that through a combination of development fees and other appropriate funding mechanisms that development pays its fair share of the costs of upgrading existing facilities and/or constructing/providing new facilities and services as determined by the direct impacts that such development has on these essential services. Policy CDD2B would ensure that all new developments maintain adequate service levels for existing development while providing for the upgrade/expansion of existing public services as appropriate. Policy CDD2C directs the City to evaluate public-service impacts as part of environmental review for proposed development projects and require applicants to obtain "will-serve" letters from service providers prior to the approval of a discretionary permit or a building permit.

Furthermore, it should be noted that the proposed project does not propose any land use actions or development that would induce population growth. As a result of the proposed policies, fire protection service impacts would be less than significant.

Level of Significance Before Mitigation: PS-1 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.15.1.5 CUMULATIVE IMPACTS

PS-2	Implementation of the proposed project would not, in combination with past, present, and reasonably foreseeable projects, result in a cumulative fire protection services impact. [Threshold PS-2]

The geographic area for the cumulative impact analysis of fire protection services is the entire service territory for the Redding Fire Department, which includes the City and portions its SOI. Future development in the City based on buildout of the City's General Plan Update is expected to increase demand for fire protection services and would contribute to the need to construct new facilities, increase staffing for existing engine and/or truck companies, add additional companies or specialized response units, and/or add on-duty personnel. However, as Redding Fire Department would provide for additional fire protection services within its own boundaries and would be required to address the potential environmental impacts

of the development of additional or expanded fire protection facilities, the proposed project would have a less-than-significant cumulative impact related to fire protection services.

Level of Significance Before Mitigation: PS-2 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.15.2 POLICE PROTECTION

This section describes current conditions and potential impacts of the proposed General Plan Update with regard to police services in Redding.

5.15.2.1 ENVIRONMENTAL SETTING

Regulatory Framework

State Regulations

Emergency Response/Evacuation Plans

Government Code Section 8607(a) directs the California Emergency Management Agency (formerly the Governor's Office of Emergency Services) to prepare a Standard Emergency Management System (SEMS) program, which sets forth measures by which a jurisdiction should handle emergency disasters. The program is intended to provide effective management of multi-agency and multijurisdictional emergencies in California. SEMS consists of five organizational levels, which are activated as necessary: (1) Field Response, (2) Local Government, (3) Operational Area, (4) Regional, and (5) State. Local governments must use SEMS to be eligible for funding of their response-related personnel costs under state disaster assistance programs. Shasta County has adopted an Emergency Operations Plan that is consistent with the SEMS.

Local Regulations

2000-2020 Redding General Plan

The following policies are included in the existing General Plan regarding police protection services. The numbering is from the existing General Plan and therefore may not be consecutive.

Public Facilities and Services Element

- Goal PF2: Ensure a high level of police protection for the City's residents, businesses, and visitors.
    - Policy PF2A: Establish the following thresholds for police services:

        - Maintain, at a minimum, a sworn officer to population ratio of 1.36 officers per 1,000 residents.
        - Respond to 85 percent of Priority 1 calls within 5 minutes of being dispatched.
    - Policy PF2B: Provide police facilities (including patrol and other vehicles, necessary equipment, and support personnel) sufficient to maintain the City's standards for law enforcement services.
    - Policy PF2: Consider the desirability of establishing police substations in certain areas.
    - Policy PF2D: Consider utilizing developer impact fees to finance a portion of police facilities.
- Goal PF20: Achieve and maintain adopted facility and service standards through the use of equitable funding methods and innovative strategies.
    - Policy PF20A: Determine the demand for new public facilities created by new development as compared to the demand for new facilities created by the community as a whole. Based on the results, determine the "fair share" of the financial contributions that are appropriate for both the community at large and new development.
    - Policy PF20B: Prepare an updated impact fee ordinance that requires new development to pay its "fair share" of the cost to build needed public facility improvements. Facilities to be considered include, but are not limited to: public safety, parks, streets and intersections, water treatment and distribution, sewage collection and wastewater treatment, storm drainage, transit, and electric facilities.
    - Policy PF20C: Where appropriate, distribute the responsibility to pay for new public facilities between existing and future development based on their respective demands on the system.
    - Policy PF20D: Identify and pursue alternative funding sources that can be used for: capital improvement project construction, staffing and ongoing maintenance of public improvements. Expand the search for grant funding.
    - Policy PF20E: Require the preparation of a fiscal impact analysis for all specific plans or significant general plan land use amendments and annexations. The analysis will examine the fiscal impacts on the City and other service providers that result from large scale development. The fiscal analysis shall project a positive fiscal impact form new development or include mechanisms to fund projected fiscal deficits. Exceptions may be made when new development generates significant public benefits (e.g., low-income housing, primary-wage-earner employment) and when alternative sources of funding can be obtained to offset foregone revenues.

Health and Safety Element

- Goal HS5: Provide a safe and secure environment for people and property in the community.
    - Policy HS5A: Maintain public confidence in the ability of the Police Department to provide quality police services by ensuring a customer-based approach in providing services to the community.
    - Policy HS5B: Continue a departmentwide expansion of community-oriented policing services and activities that are responsive to citizens' needs.
    - Policy HS5C: Continue to facilitate broad community involvement in reducing crime-producing factors within the City by:

      Actively working with other City Departments to cooperatively address code enforcement issues.
        - Assisting neighborhoods in the civil abatement process.
        - Developing new Neighborhood Watch groups and encouraging those groups to participate in community revitalization efforts.
        - Expanding the Neighborhood Police Unit Program.
        - Expanding educational programs designed to reinforce positive juvenile behavior.

      Establishing low-cost or no-cost clean-up programs throughout the City.
    - Policy HS5D: Coordinate law enforcement planning with local, regional, state, and federal plans.
    - Policy HS5E: Continue to maintain, train, and equip special-response teams for extraordinary emergency incidents.

Community Development and Design Element

- Goal CDD2: Ensure the ability of the City, school districts, and other public service providers to efficiently provide expected and necessary public facilities and services to their constituents.
    - Policy CDD2A: Require construction of private development projects to be coordinated with the timing and location of public services. Ensure through a combination of development fees and other appropriate funding mechanisms that development pays its fair share of the costs of constructing/providing new facilities and services as determined by the direct impacts that such development has on these essential services.
    - Policy CDD2B: Ensure that new development will not degrade public services below established service levels, that it contributes to the enhancement of services as appropriate, and that the costs of providing public services do not exceed anticipated revenue from the development of the project over the long term.

- Policy CDD2C: Evaluate public-service impacts as part of environmental review for proposed development projects and require applicants to obtain "will-serve" letters from service providers prior to receiving approval of a final subdivision map or, in the absence of the need for a final subdivision map, prior to receiving approval of any required building permits.
- Policy CDD2F: Classify City-owned property in Southwest Oregon Gulch as "PF/I" to reserve it for a future reclassification in conjunction with a development plan.

Existing Conditions

The Redding Police Department provides police and emergency response services to the City of Redding and adjacent communities, when requested by allied agencies. The department is made up of 3 divisions; Administration Division, Field Operations, and the Detective Division. The Administrative Division focuses on recruitment, hiring, training, and personnel matters. The Field Operations Division is the largest division and delivers fundamental services citywide. The Detective Division focuses on investigating felony crimes and the apprehension of violent offenders. In 2022 the City had 122 sworn officers, giving it a ratio of 1.29 officers per 1,000 residents. The Department has implemented enhanced recruiting efforts to fill vacancies and grow the Department in size through focused efforts on social media, a recruiting team, targeted advertising, a lateral signing bonus, and other communication tools that target qualified applicants.

The Redding Police Department's mission is to work in partnership with the community to protect life and property, find innovative ways to solve neighborhood problems, and enhance the quality of life within the city. The Department has a Special Services Unit (SSU)Department has a that focuses on community policing concepts. SSU works together with businesses, neighborhoods, schools, and community members to ensure a safe and successful City. The unit includes four Park Rangers that patrol the local parks and the Sacramento River Trail. They work in conjunction with a four-member bicycle team that patrols the Downtown Redding area and other business districts in the City. Also included in SSU is the Crisis Intervention Response Team (CIRT) comprised of four officers and a mental health clinician that respond to individuals in crisis, with an emphasis on de-escalation focus on homeless outreach and housing resources. A group of Community Work Program Officers target cleanup and graffiti eradication citywide and community members to ensure a safe and successful City.

In correspondence with the Redding Police Department, it was noted that while the department has been successful in increasing community policing resources such as the CIRT, Park Rangers and the Bike Team (total of 12 positions) and added an eighth beat (5 positions), more staff is needed on the patrol level to meet current demand. The department has unmet needs including replacing patrol vehicles (supply chain and budget), additional rifles for the department, Taser replacements, and other equipment needs (see Appendix 5.15-1).

The Redding Police Department is located at 777 Cypress Avenue. The department also has an office located at 1516 Market Street, in downtown Redding. Two other law enforcement agency headquarters are also

located within the City, including the Shasta County Sheriff's Office's at 300 Park Marina Circle and the California Highway Patrol at 2503 Cascade Boulevard.

Funding

The Redding Police Department is funded from the City's General Fund. The Police Department received 38 percent ($36.3 million) of the General Fund budget during fiscal year 2021 and 2022 (Redding 2022c). The proposed budget for 2023 is $40 million, but has not yet been adopted.

5.15.2.2 THRESHOLDS OF SIGNIFICANCE

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

PS-3 Result in a substantial adverse physical impact associated with the provisions of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for police protection services.

PS-4 In combination with past, present, and reasonably foreseeable projects, result in cumulative police service impacts in the area.

5.15.2.3 PROPOSED GENERAL PLAN POLICIES

The following policies of the 2023-2045 General Plan are relevant to police protection services.

Community Design and Development Element

- Policy CDD2A: The construction of private development projects should be coordinated with the timing and location of public services. Ensure through a combination of development fees and other appropriate funding mechanisms that development pays its fair share of the costs of upgrading existing facilities and/or constructing/providing new facilities and services as determined by the direct impacts that such development has on these essential services.
- Policy CDD2B: To the extent feasible, new developments shall maintain adequate service levels for existing development while providing for the upgrade/expansion of existing public services, as appropriate.
- Policy CDD2C: Evaluate public-service impacts as part of environmental review for proposed development projects and require applicants to obtain "will-serve" letters from service providers prior to the approval of a discretionary permit or a building permit.

Community Health, Wellness, and Environmental Justice Element

- **Policy EJ6A:** Work proactively with residents as appropriate, so that existing and new public facilities, infrastructure, services are addressed in a manner that reflects the community's needs and shifting priorities of future demands in an equitable manner, to the extent feasible.
- **Policy EJ6B:** Coordinate with water, sewer, waste management, electricity, police, and fire service providers to ensure continuation of efficient and effective service, delivery, operations, and maintenance. Identify and prevent potential system vulnerabilities and coordinate with partnering agencies that provide public facilities to establish response teams or contingency plans in case of failure or emergency.
- **Policy EJ6D:** When updating public facility master plans, consider prioritizing projects that address health and safety of residents whose facilities need remediation over facility expansions wherever appropriate.
- **Policy EJ7A:** Engage with residents to identify, review and research policies and programs that could improve areas with difficulties, improve safety, and reduce crime and community violence. Collaborate with a diverse universe of partners, such as community groups, community-based organizations, representatives of local Wintu tribes, neighborhood watch groups, public health advocacy groups, sociologists, epidemiologists, police, and field experts to produce accessible synthesis of research evidence and recommendations.
- **Policy EJ7B:** Prioritize the implementation of proven best practices for crime reduction, especially in residential, commercial, and public areas.
- **Policy EJ7D:** Expand emergency response services as needed due to community growth. Consider the potential future growth in the "Primary and the Secondary Growth Areas" of the General Plan in planning for the future fire stations, police substations, and related facilities, to meet future needs and demands.

Public Safety Element

- **Policy PS5A**: Strive to maintain public confidence in the ability of the Police Department to provide quality police services by ensuring a customer-based approach in providing services to the community.
- **Policy HS5B***:* As funding allows, continue department-wide expansion of community-oriented policing services and activities including the Crisis Intervention Response Team (CIRT), or similar program, park rangers, bike patrols, Neighborhood Police Unit, School Resource Officers, Community Work Program, traffic enforcement, and other appropriate efforts. Strive to ensure that these services will be:
  - Proactive and responsive to citizens' needs.
  - Address quality of life issues identified by the community.
  - Provide crisis assistance for those suffering from mental health illness, addiction and/or lacking shelter.
  - Promote positive community relationships.
  - Incorporate technological advancements to increase public and personal safety.

- Policy PS5C: Continue to facilitate broad community involvement to reduce crime-producing factors within the City through the following actions as appropriate:
  - Actively working with other City Departments to cooperatively address code enforcement and quality of life issues.
  - Working with the County of Shasta and other non-government entities to assist those in need.
  - Assisting neighborhoods in the civil abatement process.
  - Developing new Neighborhood Watch/Business Watch groups and encouraging those groups to participate in community revitalization efforts.
  - Expanding educational programs designed to reinforce positive juvenile behavior.
  - Establishing a Department Citizen Academy to educate citizens on the Department/law enforcement.
- Policy PS5D: Coordinate law enforcement planning with local, regional, state, and federal plans through the Shield Regional Training Center or other appropriate facility.
- Policy PS5E*:* Continue to maintain an efficient, well trained, and adequately equipped Police Department, including the of special-response teams for extraordinary emergency incidents.
- Policy PS5F: Consider expanding Police services to the Redding Airport if and when necessary to support the growth/ needs for security and public safety..
- Policy PS5G: Strive to achieve and maintain optimal response times for all call priority levels to provide adequate police services for the safety of all City residents and visitors.
- Policy PS6A: Encourage innovative site planning and design to deter criminal activity in new development.
- Policy PS6B: Collaborate with appropriate agencies to incorporate technological advancements in public safety, including the ability to maintain optimal radio and other communications between agencies. Balance the need to provide safety features with other community goals to promote a safe environment for all residents.
- Policy PS6C: Encourage the use of proven best practices such as Crime Prevention Through Environmental Design (CPTED) principles in urban and social planning for crime reduction, especially in residential, commercial, and public areas.

Parks, Trails, and Recreation Element

- Policy R13D: Utilize Crime Prevention through Environmental Design (CPTED) principles as appropriate in new parks, trails, and open space facilities. Work with community groups to maintain and expand neighborhood/ park watch programs.
- Policy R13E: Periodically evaluate as necessary existing parks, trails, and open space facilities for safety and design issues.

Public Facilities and Services Element

- Policy PF1E: Work toward requiring that infrastructure be designed and constructed to meet ultimate capacity needs, pursuant to a master plan, so as to avoid the need for expensive retrofitting to the extent feasible.
- Policy PF1F: Utilize reimbursement agreements, as reasonably available and where appropriate, when upgraded or oversized facilities are installed by an individual developer and the cost of the facilities exceeds the development's proportional share of responsibility.
- Policy PF1G: Consider prioritizing development through incentives in infill priority areas with readily available infrastructure capacity and services.
- Policy PF1H: Encourage clustering of development to maximize the use and efficiency of available infrastructure and facilities.
- Policy PF2A: Strive to achieve and maintain adequate police services based on the following metrics:
  - Response times to both priority (emergency) and non-priority calls for service.
  - Demand for police services (based on workload) for emergency, non-emergency, and follow-up investigations.
  - Overall call data and coverage needs based on geographic area.
- Policy PF2B: Work to provide police facilities (including patrol and other vehicles, necessary equipment, and support personnel) sufficient for law enforcement services as funding allows.
- Policy PF2C: Consider strategic locations for distribution of police beats to ensure optimum response times to all residents.
- Policy PF2D: Collaborate with local, state, and Federal criminal justice agencies to promote regional cooperation and to reduce crime.
- Policy PF2E: Collaborate with appropriate agencies as funding allows to incorporate technology and crime prevention techniques to ensure public and personal safety.
- Policy PF2F: Consider appropriate programs to expand opportunities for positive police and youth interaction.
- Policy PF2G: Collaborate with appropriate local, regional and federal agencies and mental health professionals to expand the scope, staffing for, and training of the Crisis Intervention Response Team (CIRT), to support residents in need. Pursue funding as appropriate.

5.15.2.4 IMPACT DISCUSSION

PS-3	The proposed project would not result in the need for new or physically altered police facilities, the construction of which could cause significant environmental impacts to maintain acceptable service ratios, response times, or other performance objectives. [Threshold PS-3]

Implementation of the proposed General Plan Update could result in the addition of approximately new 19,439 residents from development throughout the Planning Area. Upon implementation of the General Plan Update, the Redding Police Department would strive to maintain appropriate staffing to ensure compliance with local and regional standards for response time and coverage. In correspondence with police chief Bill Schueller, it was noted that as the City's population increases, additional staff will be required. Chief Schueller estimates that is an additional 10 officers for patrol (two beats) during the life of this EIR. Ten officers would require five additional patrol vehicles, 10 radios, and another $50k in individual officer equipment. Additional Community Service Officers (CSO's) may also be necessary (Appendix 5.15-1).

This increase in demand for police services would be met through the hiring of additional staff, as needed, which would be funded through existing funding mechanisms, such as the general fund revenue and grant funding. Additionally, several policies included in the General Plan Update would strive ensure that adequate service levels are maintained. For example, Policy CDD2B would ensure that all new developments shall maintain adequate service levels for existing development while providing for the upgrade/expansion of existing public services as appropriate. Policy PF2A directs the City to achieve adequate police services based on the metrics of response times, demand for police services, and coverage needs based on geographic area. Policy PF2B directs the City to provide police facilities for sufficient law enforce services.

As new development occurs, new or expanded police facilities would be needed to support the associated population growth. It is not known at this point when such facilities would be required or what the exact nature of these facilities would be. As a result, it cannot be determined what project-specific environmental impacts would occur from their construction and operation. The potential impacts would be identified during the facility planning process. Therefore, impacts related to police services would be less than significant.

Level of Significance Before Mitigation: PS-3 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.15.2.5 CUMULATIVE IMPACTS

PS-4	Implementation of the proposed project would not, in combination with past, present, and reasonably foreseeable projects, result in a cumulative police protection services impact. [Threshold PS-4]

The geographic area for the cumulative impact analysis of police protection services is the entire service territory for the Redding Police Department, which includes all area within the City limits. Future development in the City based on buildout of the City's General Plan Update is expected to increase demand

for police protection services and would contribute to the need to construct new facilities and increase staffing. However, as Redding Police Department would continue to provide for additional police protection services within its own boundaries and would be required to address the potential environmental impacts of the development of additional or expanded police protection facilities, the proposed project would have a less-than-significant cumulative impact related to police protection services.

Level of Significance Before Mitigation: PS-4 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.15.3 SCHOOL SERVICES

This section describes current conditions and potential impacts of the proposed General Plan Update with regard to school services in Redding.

5.15.3.1 ENVIRONMENTAL SETTING

Regulatory Framework

State Regulations

California State Assembly Bill 2926: School Facilities Act of 1986

To assist in providing school facilities to serve students generated by new development, Assembly Bill (AB) 2926 was enacted in 1986 and authorizes a levy of impact fees on new residential and commercial/industrial development. The Bill was expanded and revised in 1987 through the passage of AB 1600, which added Sections 66000 et seq. to the Government Code. Under this statute, payment of impact fees by developers serves as CEQA mitigation to satisfy the impact of development on school facilities.

California Senate Bill 50

Senate Bill (SB) 50, passed in 1998, provides a comprehensive school facilities financing and reform program and enables a statewide bond issue to be placed on the ballot. Under the provisions of SB 50, school districts are authorized to collect fees to offset the costs associated with increasing school capacity as a result of development and related population increases. The funding goes to acquiring school sites, constructing new school facilities, and modernizing existing school facilities. SB 50 establishes a process for determining the amount of fees developers would be charged to mitigate the impact of development on school districts from increased enrollment. According to Section 65996 of the California Government Code, development fees authorized by SB 50 are deemed to be "full and complete school facilities mitigation."

Under this legislation, there are three levels of developer fees that may be imposed upon new development by the governing school district. Level I fees are assessed based upon the proposed square footage of residential, commercial/industrial, and/or parking structure uses. Level II fees require the developer to provide one-half of the costs of accommodating students in new schools, and the state provides the remaining half. To qualify for Level II fees, the governing board of the school district must adopt a School Facilities Needs Analysis and meet other prerequisites in accordance with Section 65995.6 of the California Government Code. Level III fees apply if the state runs out of bond funds, allowing the governing school district to impose 100 percent of the cost of school facility or mitigation on the developer, minus any local dedicated school monies.

Regional Regulations

Shasta County Office of Education

The Shasta County Office of Education (SCOE) provides a variety of services to the 101 public schools, 17 public charter schools, and 19 preschools in Shasta County, including schools in Redding (SCOE 2022). Developer Fees for residential and commercial construction are collected by SCOE on behalf of the school districts of Shasta County. The fees collected are used by the districts for construction and reconstruction of school facilities and may be used to pay bonds, notes, loans, leases or other installment agreements for temporary and permanent facilities (Shasta County 2023a). The adopted fees for 2022 through 2023 are $4.79 per square foot for residential development and $0.78 per square foot for commercial development (SCOE 2023a).

Local Regulations

2000-2020 Redding General Plan

The following policies are included in the existing General Plan regarding school services. The numbering is from the existing General Plan and therefore may not be consecutive.

Community Development and Design Element

- Goal CDD2: Ensure the ability of the City, school districts, and other public service providers to efficiently provide expected and necessary public facilities and services to their constituents
    - Policy CDD2A: Require construction of private development projects should be coordinated with the timing and location of public services. Ensure through a combination of development fees and other appropriate funding mechanisms that development pays its fair share of the costs of constructing/providing new facilities and services as determined by the direct impacts that such development has on these essential services.

- Policy CDD2B: Ensure that new development will not degrade public services below established service levels, that it contributes to the enhancement of services as appropriate, and that the costs of providing public services do not exceed anticipated revenue from the development of the project over the long term.
- Policy CDD2C: Evaluate public-service impacts as part of environmental review for proposed development projects and require applicants to obtain "will-serve" letters from service providers prior to receiving approval of a final subdivision map or, in the absence of the need for a final subdivision map, prior to receiving approval of any required building permits.
- Policy CDD2D: Work with school districts in the Planning Area on a continuous basis to determine appropriate sites for new schools; assist Districts by reserving sites as a condition of development approval in accordance with applicable state law.
- Policy CDD2F: Classify City-owned property in Southwest Oregon Gulch as "PF/I" to reserve it for a future reclassification in conjunction with a development plan.

- Goal CDD12: Ensure that neighborhoods are attractive, safe, and well-maintained.
  - Policy CDD12D: Promote stronger neighborhood/school partnerships, including joint use of City and school facilities.

Redding Municipal Code

Chapter 16.24, Regulation of Residential Development in Overcrowded School Attendance Areas, of the Redding Municipal Code, allows school districts that serve the City to make findings of overcrowded school conditions and impose a fee on any person and/or entity for the privilege of building and/or installing any residential dwelling unit within the boundaries of an overcrowded district during the next school year following the school district's submission of the findings (Section 16.24.090).

Section 16.24.070 establishes student generation rates including, 0.42 elementary school students in each single-family unit, 0.21 elementary school students in each multiple-family dwelling unit, and 0.22 high school students in each household in Shasta County.

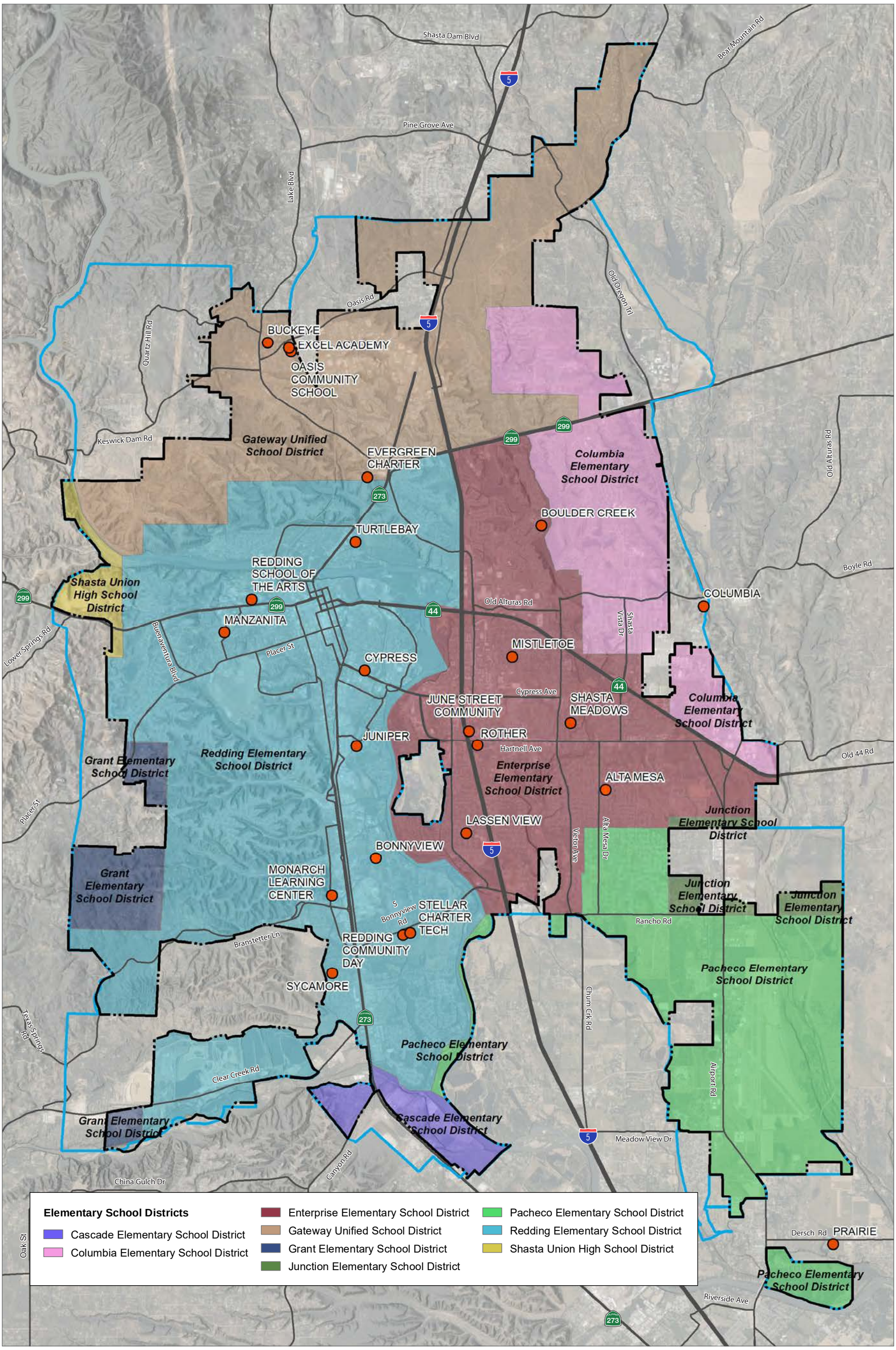
Existing Conditions

Elementary schools in the Planning Area are administered by seven Elementary school districts; Columbia Elementary School District, Gateway Unified School District, Redding Elementary School District, Shasta Union High School District, Grant Elementary School District, Pacheco Elementary School District, Enterprise Elementary School District (SCOE 2023b). The boundaries of these districts and the locations of the elementary schools in Redding are shown on Figure 5.15-2, *Elementary Schools and School Districts in Redding*.

Middle schools in the district are generally administered by the elementary school districts listed above. Several elementary schools offer school services for grades 6 through 8 in addition to grades kindergarten through 5, and others offer school services to various other combinations of grade levels. High schools in Planning Area are administered by three school districts; Gateway Unified School District, Shasta Union High School District, and Anderson High School District. The boundaries of these districts and high schools located within the City or its SOI are shown on Figure 5.15-3, *High Schools and Schools Districts in Redding*.

Table 5.15-3, *Schools in Redding*, displays the schools in Redding by district. As shown in Table 5.15-3, there are 14 public schools, nine charter schools, and six alternative schools in Redding.

5.15 PUBLIC SERVICES AND RECREATION



Source: Generated using ArcMap, 2023; City of Redding GIS 2017, 2021, and 2022; Homeland Infrastructure Foundation-Level Data, 2023, Shasta County GIS, 2022.

Figure 5.15-2
Elementary Schools and School Districts in Redding

This page intentionally left blank.

TABLE 5.15-3 SCHOOLS IN REDDING

School	Grades	Address	School Type
Columbia Elementary School District			
Columbia-East Valley Community Day	K-8	675 Shasta View Drive, Redding	Community Day School
Columbia Elementary	K-4	10142 Old Oregon Trail, Redding	Public School
Mountain View Middle	5-8	675 Shasta View Drive, Redding	Public School
Phoenix Charter Academy College View	K-12	145 Shasta View Dr. Redding	Public Charter School
Redding School of the Arts	K-8[1]	955 Inspiration Way, Redding	Public Charter School
Enterprise Elementary School District			
Alta Mesa Elementary	K-5	2301 Saturn Skyway, Redding	Public School
Boulder Creek Elementary	K-8	505 Springer Drive, Redding	Public School
Lassen View Elementary	K-5	705 Loma Vista Drive, Redding	Public School
Mistletoe Elementary	K-8	1225 Mistletoe Lane, Redding	Public School
PACE Academy	K-12	3200 Adams Lane, Redding	Public School
Parsons Jr. High	6-8	750 Hartnell Avenue, Redding	Public School
Redding Collegiate Academy	K-12	3200 Adams Lane, Redding	Public Charter School
Rother Elementary	K-5	795 Hartnell Avenue, Redding	Public School
Shasta Meadows Elementary	K-5	2825 Yana Avenue, Redding	Public School
Gateway Unified School District			
Buckeye School of the Arts	TK-8	3407 Hiatt Drive, Redding	Public School
Gateway Educational Options	K-12	3500 Tamarack Drive, Redding	Alternative Schools of Choice
Rocky Point Charter	K-8	3500 Tamarack Drive, Redding	Public Charter School
Grant Elementary School District			
Grant Elementary	K-8	8835 Swasey Drive, Redding	Public School
Pacheco Union School District			
Pacheco Elementary	4-8	7430 Pacheco School Road, Redding	Public School
Redding Elementary School District			
Bonny View Elementary	K-5	5080 Bidwell Road, Redding	Public School
Cypress Elementary	K-5	2150 Civic Center Drive, Redding	Public School
Juniper Elementary	K-8	375 Ellis Street, Redding	Public School
Manzanita Elementary	K-5	1240 Manzanita Hills Avenue, Redding	Public School
Monarch Learning Center/ Monarch Charter	K-8	5307 Cedars Road, Redding	Public Charter School
Redding Community Day/ Redding Achieve	K-6	5885 East Bonnyview Road, Redding	Community Day School
Sequoia Middle	4-8	1805 Sequoia Street, Redding	Public School
Stellar Charter School	K-12	5885 East Bonnyview Road	Public Charter School

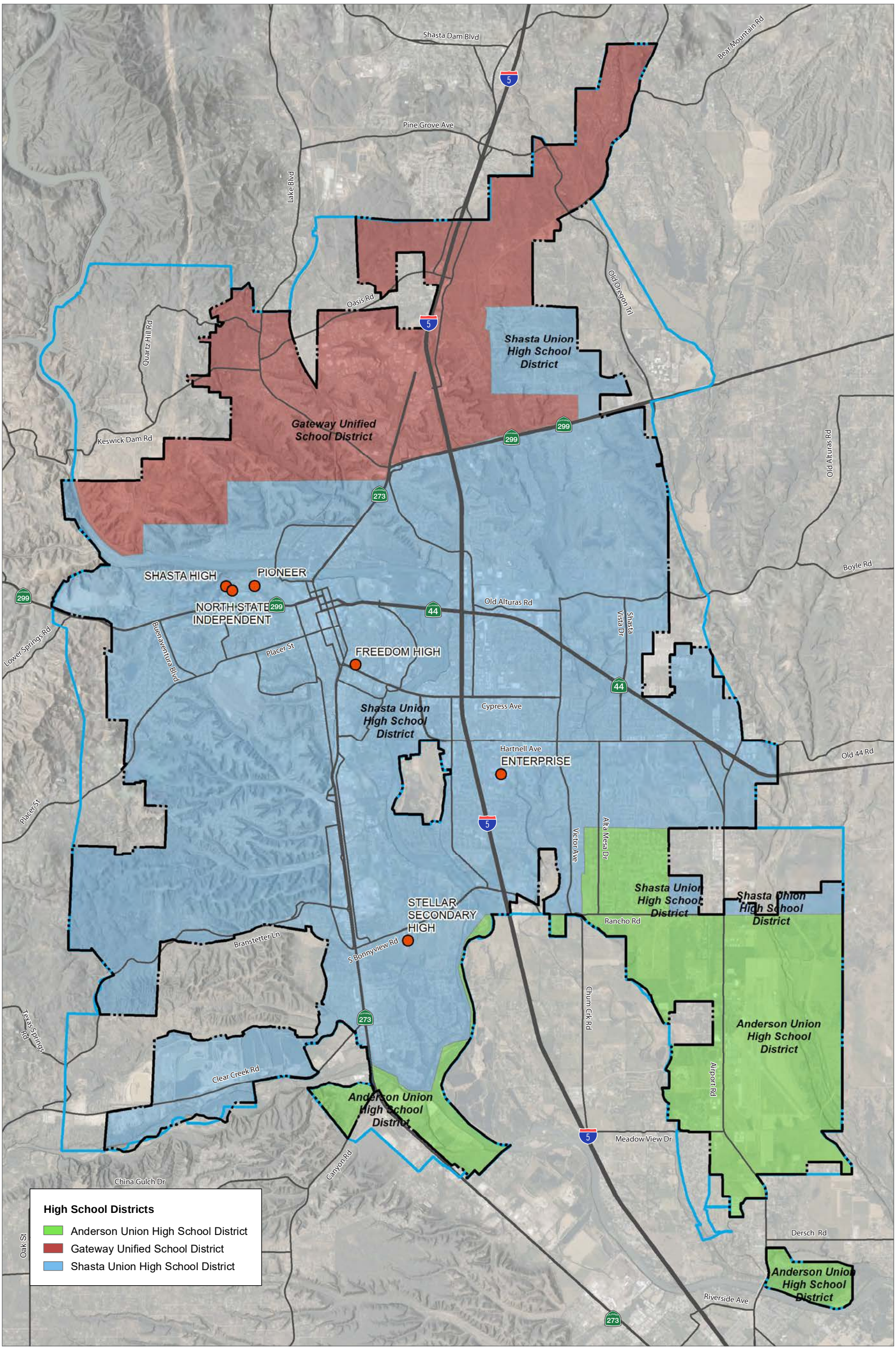
School	Grades	Address	School Type
Sycamore Elementary	K-5	1926 Sycamore Drive, Redding	Public School
Turtle Bay Elementary	K-8	1330 Arboretum Drive, Redding	Public School
Shasta County Office of Education			
Redding STEM Academy	K-8	3711 Oasis Road, Redding	Public Charter School
Juvenile Court School	9-12	2682 Radio Lane, Redding	Public School
Shasta County Independent Study	7-12	3711 Oasis Road, Redding	Public School
Special Ed./EXCEL Academy[2]	K-8	711 Oasis Road, Redding	Special Needs School
Shasta Union High School District			
Enterprise High	9-12	3411 Churn Creek Road, Redding	Public School
Pioneer Continuation High	10-12	2650 8th Street, Redding,	Continuation School
Shasta Charter Academy	6-12	307 Park Marina Circle, Redding	Public Charter School
Shasta Collegiate Academy High School	9-12	2200 Eureka Way, Suite B, Redding	Alternative Schools of Choice
Shasta High	9-12	2500 Eureka Way, Redding	Public School
University Preparatory	6-12	2200 Eureka Way, Redding	Public Charter School

Source: SCOE 2023b

[1] Redding School of Arts has plans to open a high school

[2] This school is not recognized by the California Department of Education

5.15 PUBLIC SERVICES AND RECREATION



Source: Generated using ArcMap, 2023; City of Redding GIS 2017, 2021, and 2022; Homeland Infrastructure Foundation-Level Data, 2023, Shasta County GIS, 2022.

Figure 5.15-3
High Schools and School Districts in Redding

This page intentionally left blank.

Table 5.15-4, *Redding Schools Enrollment*, shows the enrollment for each school in Redding during the 2016-2017 and 2021-2022 school years. As shown in the table, the student population across all schools in Redding has declined by approximately 6.23 percent over the last five years.

TABLE 5.15-4 REDDING SCHOOLS ENROLLMENT

School	2016-2017	2021-2022	Student/Teacher Ratio
Columbia-East Valley Community Day	4	7	7
Columbia Elementary	431	402	20.1
Mountain View Middle	360	304	17.9
Redding School of the Arts	568	540	23.2
Alta Mesa Elementary	283	320	23.7
Boulder Creek Elementary	991	859	23.0
Lassen View Elementary	425	418	24.6
Mistletoe Elementary	627	606	23.2
PACE Academy	83*	36	12.0
Parsons Jr. High	558	542	21.2
Redding Collegiate Academy	102*	211	31.7
Rother Elementary	391	287	25.0
Shasta Meadows Elementary	379	315	19.7
Buckeye School of the Arts	621	495	21.5
Gateway Educational Options	68	95	23.8
Rocky Point Charter	190	159	17.7
Grant Elementary	637	617	20.1
Pacheco Elementary	325	373	19.3
Bonny View Elementary	255	289	22.2
Cypress Elementary	333	275	20.3
Juniper Elementary	--	--	--
Manzanita Elementary	562	545	21.8
Monarch Learning Center/Monarch Charter	56	85	17.0
Sequoia Middle	676	431	19.0
Stellar Charter School	226*	199	16.9
Sycamore Elementary	178	232	19.3
Turtle Bay Elementary	846	760	23.8
Redding STEM Academy	208	230	18.7
Shasta County Juvenile Court School	11	25	7.2
Shasta County Independent Study	115	100	25.0
Enterprise High	1,184	1,137	21.8
Pioneer Continuation High	174	186	12.3
Shasta Charter Academy	243	233	16.0
Shasta Collegiate Academy High School	135	208	22.9

School	2016-2017	2021-2022	Student/Teacher Ratio
Shasta High	1,490	1,345	21.0
University Preparatory	987	992	21.6
TOTAL	14,722	13,858	

Source: CDE 2023a-2023ah; NCES 2023a-2023ah

[1] CDE reports an enrollment of 0 for Phoenix Charter Academy College View and Redding Community Day schools

* Enrollment for 2016-2017 unavailable; enrollment for 2017-2018 used

5.15.3.2 THRESHOLDS OF SIGNIFICANCE

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

PS-5 Result in substantial adverse physical impacts associated with the provision of new or physically altered school facilities, or result in the need for new or physically altered school facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives.

PS-6 In combination with past, present, and reasonably foreseeable projects, result in cumulative school impacts in the area.

5.15.3.3 PROPOSED GENERAL PLAN POLICIES

The following goals and policies of the 2023-2045 General Plan are relevant to school services.

Community Design and Development Element

- **Policy CDD2B:** To the extent feasible, new developments shall maintain adequate service levels for existing development while providing for the upgrade/expansion of existing public services, as appropriate.
- **Policy CDD2D**: Work with school districts and public and quasi-public agencies, as appropriate, in determining the location of needed sites in the planning area for new institutional development and facilities by reserving sites as a condition of development approval in accordance with the State law. Uses on such sites should be designed to complement the neighborhood's character.
- **Policy CDD12D**: Promote stronger neighborhood/ school partnerships, including joint use of City and school facilities wherever feasible.

5.15.3.4 IMPACT DISCUSSION

PS-5	The proposed project would not result in the need for new or physically altered school facilities, the construction of which could cause significant environmental impacts to maintain acceptable service ratios or other performance objectives. [Threshold PS-5]

Population growth foreseeable under 2023-2045 General Plan could cause the need for new or expanded facilities, staff, or infrastructure within the eight school districts that serve Redding. Using the City's school generation factors as established in Section 16.24.070 of the City Municipal Code, an estimated 4,637 new K-12 students are expected to be added to the City and its SOI over the buildout period of the General Plan and attend schools in the City, as shown in Table 5.15-5, *Students Population Growth in Redding*.

While the locations of some new or expanded facilities is not currently known at this time, the Pacheco Union School District has a reserved site in the Shastina Ranch area at 5372 Shasta View Drive in the City. Project-specific environmental impacts would occur from future construction and operation at this potential school site and others and would be identified during the development process for each school site. Additionally, existing regulations such as California Government Code Sections 65995 (h) and 65996 (b) provide mitigation for impacts to school facilities. Such mitigation measures include fees, charges, or requirements levied against construction, pursuant to Section 17620 of the Education Code.

Furthermore, the 2023-2045 General Plan Update contains a number of policies that provide for adequate public-school facilities to meet future demand. Policy CDD2D directs the City to work with school districts and public and quasi-public agencies as appropriate in determining the location of needed sites in the planning area for new institutional development and facilities by reserving sites as a condition of development approval in accordance with the State law. Policy CDD11D also promote stronger neighborhood/ school partnerships, including joint use of City and school facilities wherever feasible.

Furthermore, Chapter 16.24 of the Redding Municipal Code directs school districts to levy fees on development in school districts that have been determined to be overcrowded, would reduce impacts to less than significant per Section 65996 of the California Government Code. As a result of the proposed policies, and consistent with State law on the determination of impacts to school facilities, school impacts would be less than significant.

TABLE 5.15-5 STUDENT POPULATION GROWTH IN REDDING

Student Generation Factors[1]	
Elementary School Students in Single-Family Units	0.42
Elementary School Students in Multiple-Family Units	0.21
High School Students (both SF & MF)	0.22
Dwelling Units Added to City (2020-2045)[2]	
Single-Family Units	5,567
Multiple-Family Units	2,499
Total Units	8,066
Students Generated	
Elementary School Students from Single-Family Units	2,338
Elementary School Students from Multiple-Family Units	525
High School Students (all units)	1,775
Total	**4,637**

Source: [1]Redding Municipal Code; [2]GHD 2023 (Appendix 3-2)

Level of Significance Before Mitigation: PS-5 would be less than significant.

Mitigation Measures

No mitigation measures are required.

PS-6 Implementation of the proposed project would not, in combination with past, present, and reasonably foreseeable projects, result in a cumulative school services impact. [PS-6]

The geographic area for the cumulative impact analysis of school protection services is the attendance boundaries of all schools in Redding and its SOI. Under the 2023-2045 General Plan, population growth would further contribute to the need for new or expanded facilities. However, as with the project-level analysis, it is unknown exactly where these new school facilities and expansions would occur to support the cumulative increase in population. As specific school expansion or improvement projects are identified, additional project-specific, environmental analysis would be completed by the affected school district. As a result, cumulative impacts to schools would be considered less than significant.

Level of Significance Before Mitigation: PS-6 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.15.4 LIBRARY SERVICES

This section describes current conditions and potential impacts of the proposed General Plan Update with regard to library services in Redding.

5.15.4.1 ENVIRONMENTAL SETTING

Regulatory Framework

Local Regulations

2000-2020 Redding General Plan

The following policies are included in the existing General Plan regarding library services. The numbering is from the existing General Plan and therefore may not be consecutive.

Public Facilities and Services Element

- Goal PF19: Advocate adequate library services to meet the needs of current and future patrons.
  - Policy PF19A: Promote the construction of new libraries or the expansion of existing facilities as required to meet the needs of the community.
  - Policy PF19B: Work with Shasta County to explore options for maintaining/increasing the number of hours that library facilities are available to the public.
  - Policy PF19C: Encourage the provision of library outreach services for residents who are unable to visit library facilities.
- Goal PF20: Achieve and maintain adopted facility and service standards through the use of equitable funding methods and innovative strategies.
  - Policy PF20A: Determine the demand for new public facilities created by new development as compared to the demand for new facilities created by the community as a whole. Based on the results, determine the "fair share" of the financial contributions that are appropriate for both the community at large and new development.
  - Policy PF20B: Prepare an updated impact fee ordinance that requires new development to pay its "fair share" of the cost to build needed public facility improvements. Facilities to be considered include, but are not limited to: public safety, parks, streets and intersections, water treatment and distribution, sewage collection and wastewater treatment, storm drainage, transit, and electric facilities.

- Policy PF20C: Where appropriate, distribute the responsibility to pay for new public facilities between existing and future development based on their respective demands on the system.
- Policy PF20D: Identify and pursue alternative funding sources that can be used for: capital improvement project construction, staffing and ongoing maintenance of public improvements. Expand the search for grant funding.
- Policy PF20E: Require the preparation of a fiscal impact analysis for all specific plans or significant general plan land use amendments and annexations. The analysis will examine the fiscal impacts on the City and other service providers that result from large scale development. The fiscal analysis shall project a positive fiscal impact form new development or include mechanisms to fund projected fiscal deficits. Exceptions may be made when new development generates significant public benefits (e.g., low-income housing, primary-wage-earner employment) and when alternative sources of funding can be obtained to offset foregone revenues.

Redding Municipal Code

Chapter 2.42, Redding Municipal Library, establishes the regulatory provisions for the Redding Municipal Library, including its funding through Section 2.42.070, Library Fund.

Existing Conditions

In 2006, governance and management of the Shasta Public Library was transferred to the City of Redding from Shasta County. The Shasta Public Library operates three branches in Shasta County, including the Redding Library on 1100 Parkview Avenue in Redding which opened in 2007. Shasta Public Libraries offer a variety of services including book check-outs, children and teen programs, meeting rooms, internet access, mobile printing, literacy services, small business support office hours, podcasting studios, 3D printers, virtual reality, crafting equipment, veterans support services, and additional items and services (Shasta Public Libraries).

Shasta Public Libraries currently has 56,860 square feet of building space among its libraries that serve the City of Redding. The American Library Association recommends a service ratio of between 0.4 and 0.5 square feet of building space per resident for population sizes of over 120,000. Therefore, the library's target ratio under the City's 2022 population (92,963) is between 37,185 and 46,481 square feet of building space, which the Shasta Public Library currently meets. In correspondence with the library, it was noted that the department's spending is $14.12 per capita. Since the state average for per capita spending is $42.42, the department notes that more resources are need to maintain its collection (see Appendix 5.15-1).

5.15.4.2 THRESHOLDS OF SIGNIFICANCE

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

PS-7 Result in substantial adverse physical impacts associated with the provision of new or physically altered library facilities, or result in the need for new or physically altered library facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives.

PS-8 In combination with past, present, and reasonably foreseeable projects, result in cumulative library impacts in the area.

5.15.4.3 PROPOSED GENERAL PLAN POLICIES

The following goals and policies of the 2023-2045 General Plan are relevant to library services.

Community Design and Development Element

- Policy CDD2A: The construction of private development projects should be coordinated with the timing and location of public services. Establish through a combination of development fees and other appropriate funding mechanisms that development pays its fair share of the costs of upgrading existing facilities and/or constructing/providing new facilities and services as determined by the direct impacts that such development has on these essential services.
- Policy CDD2B: To the extent feasible, new developments shall maintain adequate service levels for existing development while providing for the upgrade/expansion of existing public services as appropriate.
- Policy CDD2C: Evaluate public-service impacts as part of environmental review for proposed development projects and require applicants to obtain "will-serve" letters from service providers prior to the approval of a discretionary permit or a building permit.
- Policy CDD2D: Work with school districts and public and quasi-public agencies, as appropriate, in determining the location of needed sites in the planning area for new institutional development and facilities by reserving sites as a condition of development approval in accordance with the State law. Uses on such sites should be designed to complement the neighborhood's character.

Public Facilities and Services

- Policy PF12A: Endeavor to maintain a library system that adapts to technological changes, enhances library services, expands access to digital information and the internet, and meets community and library system needs.
- Policy PF13A: Continue to provide a variety of library programs serving library users of all age groups.

- Policy PF13B: Continue to partner with local school districts, businesses, community members, and the County in the provision of high-quality library services as appropriate.
- Policy PF13C: Strive to utilize libraries as multi-functional facilities, resiliency centers, cultural centers, gathering spaces, and venues for programs, including arts-related events.

5.15.4.4 IMPACT DISCUSSION

PS-7	The proposed project would not result in the need for new or physically altered public facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives. [Threshold PS-7]

The 2023-2045 General Plan Update would result in an increase in population and, thus, library usage in Redding. Shasta Public Library notes that its ability to meet service levels for current demand of new books and programming is exceeded. Under the proposed 2023-2045 General Plan, population within the Redding Planning Area is projected to grow to approximately 137,377 total residents (see Chapter 3, *Project Description*, for information about the General Plan Planning Horizon projections). To meet the recommended service levels, Shasta Public Library may require up to 11,829 square feet of additional building space in addition to increased budget to meet demand for current and future books and programming needs. The department notes that it has no plans for expansion at this time. As a result, it cannot be determined what project-specific environmental impacts would occur from the construction and operation of future facilities. These potential impacts would be identified during the facility site selection process.

The 2023-2045 General Plan includes policies and actions that seek to ensure that adequate services and facilities are funded to meet increasing demand. Policy CDD2B would ensure that all new developments shall maintain adequate service levels for existing development while providing for the upgrade/expansion of existing public services as appropriate.

Additionally, the proposed Public Facilities and Services Element includes several goals and policies that aim to increase the quality and service of the library system. For example, Policy PF12A directs the City to maintain a library system that adapts to technological changes, enhances library services, expands access to digital information and the internet, and meets community and library system needs.

As a result of the proposed policies, library service impacts would be less than significant.

Level of Significance Before Mitigation: PS-7 would be less than significant.

Mitigation Measures

No mitigation measures are required.

PS-8	The project would not in combination with past, present, and reasonably foreseeable projects, result in cumulative library impacts in the area. [Threshold PS-8]

The geographic area for the cumulative impact analysis of library services is Shasta County. Future regional growth would result in increased demand for library facilities throughout the region. As a result, neighboring jurisdictions would also most likely need to expand library facilities to meet the increased demand. However, as with the project-level analysis, it is unknown exactly where these new library facilities and expansions would occur to support the cumulative increase in population. As specific library expansion or improvement projects are identified, additional project-specific, environmental analysis would be completed. As a result, a less-than-significant cumulative impacts associated with libraries would occur.

Level of Significance Before Mitigation: PS-8 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.15.5 PARKS AND RECREATION FACILITIES

This section describes current conditions and potential impacts of the proposed General Plan Update with regard to parks and recreation in Redding.

5.15.5.1 ENVIRONMENTAL SETTING

Regulatory Framework

State Regulations

Quimby Act

The Quimby Act, also known as Government Code Section 66477, Subdivision Map Act, was established in 1965 and provides provisions in the State Subdivision Map Act for the dedication of parkland and/or payment of in-lieu fees as a condition of approval of certain types of residential projects. Previously, a city or county could only use these fees to provide parks that served the developer's proposed subdivision. However, Assembly Bill 1359 (AB 1359), signed in 2013, allows cities and counties to use developer-paid Quimby Act fees to provide parks in neighborhoods other than the one in which the developer's subdivision is located. Overall, AB 1359 provides cities and counties with opportunities to improve parks and create new parks in areas that would not have benefited before. It also allows a city or county to enter a joint/shared-use agreement with one or more public districts to provide additional park and recreational access.

Mitigation Fee Act

The Mitigation Fee Act allows cities to establish fees that will be imposed on development projects to mitigate the impact on the jurisdiction's ability to provide specified public facilities to serve proposed development projects. To comply with the Mitigation Fee Act, a jurisdiction must follow four requirements: (1) Make certain determinations regarding the purpose and use of a fee and establish a nexus or connection between a development project or class of project and the public improvement being financed with the fee; (2) Segregate fee revenue from the general fund to avoid commingling of capital facilities fees and general funds; (3) For fees that have been in the possession of the jurisdiction for five years or more and for which the dollars have not been spent or committed to a project, the jurisdiction must make findings each fiscal year describing the continuing need for the money; and (4) Refund any fees with interest for which the findings noted above cannot be made.

California Public Park Preservation Act

The primary instrument for protecting and preserving parkland is California's Public Park Preservation Act of 1971. Under the Public Resource Code, cities and counties may not acquire any real property that is in use as a public park for any nonpark use unless compensation, land, or both are provided to replace the parkland acquired. This provides no net loss of parkland and facilities.

Mello-Roos Community Facilities Act

This law allows any county, city, special district, school district, or joint-powers authority to establish a Mello-Roos Community Facilities District (CFD) that can finance parks, cultural facilities, libraries, schools, fire and police protection, streets, sewer systems, and other basic infrastructure. By law, the CFD is also entitled to recover expenses needed to form the CFD and administer the annual special taxes and bonded debt.

Local Regulations

2000-2020 Redding General Plan

The following policies are included in the existing General Plan regarding parks and recreation facilities and services. The numbering is from the existing General Plan and therefore may not be consecutive.

Public Facilities and Services Element

- Goal PF15: Maintain a public park and recreation system suited to the needs of Redding residents and visitors.
    - Policy PF15A: Establish the following threshold for park facilities:
        - Program park development to attain and maintain a ratio of 10 acres of developed parkland for each 1,000 residents of the City as defined in the Recreation Element.

- Policy PF15B: Work with developers to provide public and private parks and open space (as appropriate) in new neighborhoods.
- Policy PF15C: Program the development of a regional sports complex as the next "community park" facility to be constructed.
- Policy PF15D: Pursue renovation of "The Plunge" and reestablish use of the facility as a community swimming pool.
- Policy PF15E: Develop a funding mechanism to cover the cost of maintaining future parks and recreational facilities on an ongoing basis.

- Goal PF20: Achieve and maintain adopted facility and service standards through the use of equitable funding methods and innovative strategies.
  - Policy PF20B: Prepare an updated impact fee ordinance that requires new development to pay its "fair share" of the cost to build needed public facility improvements. Facilities to be considered include, but are not limited to: public safety, parks, streets and intersections, water treatment and distribution, sewage collection and wastewater treatment, storm drainage, transit, and electric facilities.

Community Design and Development Element

- Goal CDD4: Protect and enhance the relationship between the City and the Sacramento River.
  - Policy DD4D: Establish public open-space and pedestrian/bicycle links between the river and parks, activity centers, schools, and other major open-space areas such as stream corridors.

Recreation Element

- Goal R1: Recognize the Sacramento River as the backbone of the City's park system.
  - Policy R1C: Plan and implement a public trail along the Sacramento River that also provides connections, where feasible, to school facilities and other destination points.
  - Policy R1D: Protect and enhance public, fire, and rescue access along the entire riverfront, while minimizing/mitigating impacts to the fullest extent possible.
- Goal R2: Preserve and encourage the judicious development of those natural resource areas which have a unique recreation potential.
  - Policy R2A: Establish park sites and public open-space areas along the river and tributary creeks through public and private land purchases, land dedications, easements, and similar mechanisms.
  - Policy R2B: Promote the use of native plants, particularly valley oaks, where appropriate in park and natural open-space areas.

- **Goal R4:** Provide a minimum of ten acres of improved parkland per 1,000 population and a broad range of facility types.
    - **Policy R4A**: Continue to implement and update as appropriate the 2004 Parks, Trails and Open Space Master Plan (Parks Master Plan).
    - **Policy R4B**: Support operation of the regional sports complex containing "Big League Dreams" and "Redding Soccer Park" to meet existing and future needs for softball, baseball, soccer, roller hockey, and similar facilities.
    - **Policy R4C**: Locate at least one Large Community Park in each quadrant of the City (refer to Figure 7-1 of 2000 General Plan) as indicated generally on the General Plan Diagram.
    - **Policy R4D**: Accept only parkland that is consistent with the City's site, locational, and development requirements.
    - **Policy R4E**: Acquire Large Neighborhood and Community Park sites well in advance of their actual need.
    - **Policy R4F**: Explore nontraditional methods for acquiring park and recreation land.
    - **Policy R4G**: Disperse park facilities and equipment throughout the community to prevent an undue concentration in any one area.
    - **Policy R4H**: Locate parks adjacent to school facilities, whenever possible, to maximize recreational opportunities and joint use of facilities.
    - **Policy R4I**: Establish agreements with local schools which will allow other agencies, groups, or members of the public to use special facilities and grounds (such as multipurpose rooms, gymnasiums, sports fields, basketball courts, etc.) during times when school is not in session to accommodate additional community and recreational activities. Where such agreements are in effect, the facilities may be included in the City's parkland inventory.
    - **Policy R4J**: Increase the acreage and quality of developed park facilities by placing a priority on:
        - Building out existing Large Neighborhood and/or Community parks that are underdeveloped.
        - Encouraging developers of large residential projects to dedicate land and build out park sites.
        - Encouraging community-based park improvements such as gifts or community improvement projects.
        - Coordinating improvements and programs with nonprofit organizations, schools, other agencies, and private-sector providers to avoid duplication of facilities and programs.

- Policy R4K: Encourage collocation of public and private parks with flood-control facilities, such as stormwater detention basins, where appropriate, to maximize the efficient use of land.
- Policy R4L: Pursue the acquisition of surplus federal, state, and local lands, where appropriate, to meet present and future park and recreation needs.
- Policy R4M: Work with citizens groups and other agencies to prioritize development of and identify appropriate locations for Special Purpose Facilities. Facilities to be considered may include a public golf course, sports field complexes, indoor or outdoor archery facilities, an indoor or outdoor pool complex.

- Goal R5: Ensure that new development contributes to the park, recreation, and improved open-space needs of the City.
  - Policy R5A: Adhere to the standards of the Parks, Trails and Open Space Master Plan to ensure that new residential projects provide appropriate levels of improved open-space and/or recreational amenities.
  - Policy R5B: Continue to require developers of residential property to contribute park sites or pay in-lieu fees at the maximum rate allowed by state law.
  - Policy R5C: Provide a partial credit toward in-lieu fees, parkland dedication requirements, and/or park development fees for:
    - Construction of private recreation facilities improved open-space areas, and parks.
    - Recreational amenities constructed within existing public park facilities or schools where a long-term, joint-use agreement is in effect.
    - Private development of new public parks.
  - Policy R5D: Adjust parkland in-lieu fees regularly to reflect current land values.
- Goal R7: Encourage Shasta County to provide parkland and recreation programs in those unincorporated sectors of the Redding Planning Area in which urbanization is permitted by the County.
  - Policy R7A: Encourage the County to acquire and improve Neighborhood Parks as a part of the subdivision development process.
- Goal R8: Promote a regional approach to recreation facility and program planning/development.
  - Policy R8A: Encourage a regional approach to the provision, planning, and development of recreation facilities and programs by promoting cooperation with school districts, special service districts, neighboring communities, Shasta County, and the federal government. Recognize that policies and programs restricted to

jurisdictional boundaries can impede the provision of high-quality facilities and programs that benefit the citizens of Redding.

- Goal R10: Establish adequate funding mechanisms to implement the facility and program needs identified in this element.
    - Policy R10A: Adjust park-development fees regularly to reflect current park-development costs.
    - Policy R10B: Explore innovative means of financing new facilities and maintaining existing and future parks such as the creation of a park and recreation district or similar measure.
    - Policy R10C: Establish an "Adopt a Park" program to encourage volunteer groups, service clubs, and other members of the private sector to assist with the development and maintenance of park and recreation facilities. If ongoing maintenance is an issue, innovative ways of providing this service need exploration and should not prohibit development of these park and recreation facilities.
    - Policy R10D: Pursue joint development and service agreements with elementary and high school districts.
- Goal R11: Promote and facilitate development of a citywide recreational trail system.
    - Policy R11A: Utilize the trail system plan of the Parks, Trails and Open Space Master Plan to locate future trails. In general, the trail system should:
        - Focus on linking neighborhoods to other land uses and significant destination points within the community.
        - Separate bicyclists and pedestrians from vehicular traffic and pedestrian facilities from bicycle facilities, whenever feasible.
        - Provide continuous trail connections, including a looped system around the City.
    - Policy R11B: Continue development of the Sacramento River Trail to establish a common and continuous thread along the river corridor, connecting recreational, educational, cultural, commercial, and residential areas/uses.
    - Policy R11C: Continue to obtain land dedications and/or easements for the development of public trails and the Regional River Parkway through direct purchases and the discretionary approval process for new the establishment of volunteer bicycle-path/recreation-trail patrols to improve the real development.
    - Policy R11D: Pursue funding which can be used for parkway and trail-system planning, land acquisitions, construction, and maintenance.

- Policy R11E: Design bicycle and trail systems in a manner that protects the privacy and security of adjacent land uses, allows for easy maneuvering, and promotes user safety.
- Policy R11F: Encourage and perceived level of safety for users of those facilities.

City of Redding Parks, Trails, & Open Space Master Plan

The Parks, Trails, & Open Space Master Plan is a long-range plan for recreational sites and community open spaces. The City has developed many trails that encourage walkers and bicyclists to enjoy Redding's distinctive geography. The Master Plan was updated in 2018 but was not adopted pending adoption of the 2023-2045 General Plan. However, the update includes the most recent data on the parks, trails and open space inventory of the City and is used for the analyses in this DEIR. Until such time the 2018 update is adopted, the 2004 Parks, Trails, and Open Space Master Plan remains in effect.

In order to ensure that an adequate amount of improved parkland is provided as growth and development occurs, many jurisdictions adopt specific standards which identify the community's desired level of improved parkland acreage per 1,000 population. Within the City of Redding, the desired standard is ten acres per 1,000. This standard incorporates developed and undeveloped parks that are owned and maintained by the City, such as Small and Large Neighborhood Parks; Community Parks; Special Purpose Facilities; parkland adjacent to schools in instances where the land is publicly owned; and parkland and play areas associated with school-owned recreational facilities, where long-term, joint-use agreements have been established; trails, improved open-space areas within residential developments, and private neighborhood parks.

The amount of parkland available per capita to residents in the Southwest Quadrant is at present the second lowest of all the city quadrants. At 5.63 acres of developed parkland and trails per 1,000 people, it is well below the 10-acre goal the City adopted with the General Plan and re-confirmed with the Parks, Trails, & Open Space Master Plan (Redding Parks and Recreation 2018a). The Citywide level of service reported in the 2018 master plan is 6.42 acres per 1,000 residents.

Redding Municipal Code

Redding Municipal Code (RMC) Chapter 17.42 outlines the park and recreation land requirements imposed on subdivisions of land within the city. As a condition of approval of a final map or parcel map, the subdivider shall dedicate land or pay a fee in lieu thereof, or both, at the option of the City, for park or recreational purposes according to the standards and formula contained in Chapter 17.42. However, given that the proposed project is not a residential subdivision, it is not required to dedicate land or pay an in-lieu fee per the limitations identified.

The purpose of the Parks and Recreation Facilities Impact Fee, as set forth in Section 16.20.210 of the Redding Municipal Code, is to provide for the planning, acquisition, improvement, expansion, and financing of public parks, playgrounds, and recreational facilities. In order to address this potential and to meet City recreation standards, it is appropriate that new development pay for additional park and recreation facilities

attributable to the impact of such development. In 2019, Redding published a development impact mitigation fee nexus study for parks facilities fees. This fee nexus report presents the results of a comprehensive update of the City of Redding's impact fee programs for park and trail facilities. Updated in July of 2023, the City's current fee schedule is shown in Table 5.15-6, *Redding Park and Recreation Facilities Impact Fees*.

TABLE 5.15-6 REDDING PARKS AND RECREATION FACILITIES IMPACT FEES

Development Type	Fee Effective 7/1/2022
Single family (per du)	$6,144.00
Multiple family (per du)	$4,649.00
Commercial (per 1000 sq ft)	$581.00
Office (per 1000 sq ft)	$861.00
Industrial (per 1000 sq ft)	$464.00

Source: Redding 2022b

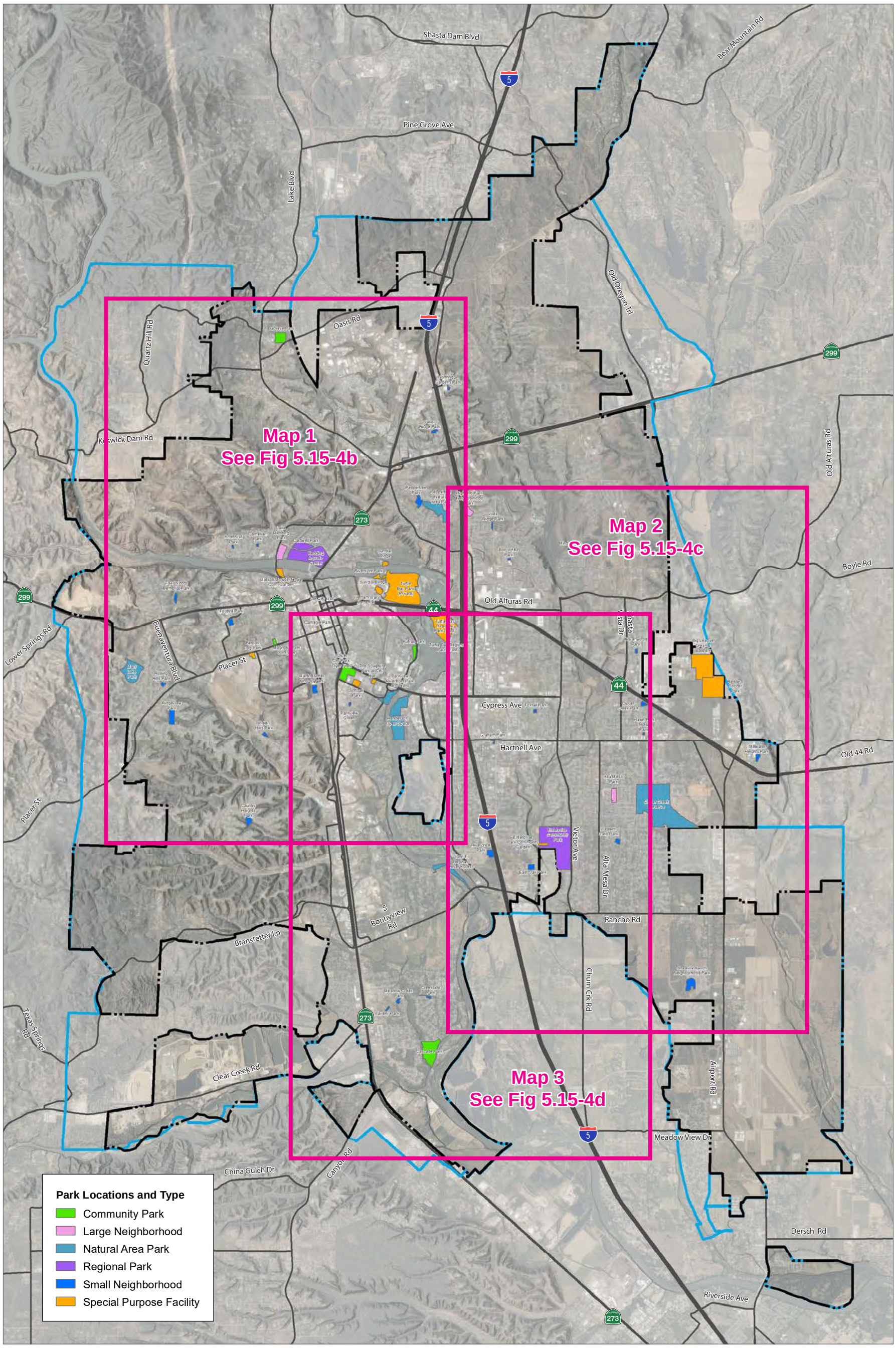
Existing Conditions

Parks and recreation facilities in Redding are administered by the Community Services Department which is assisted by the Community Services Advisory Commission. The City owns and operates a variety of recreational program sites including the Caldwell Recreation Center, the Carter House, the Enterprise Park Community Room, the Martin Luther King Jr. Center, the Redding Aquatic Center, the Senior Citizen Hall, Teen Center, Shasta Trinity Fly Fishers Clubhouse, and the California Soccer Park (Redding Parks and Recreation 2018b).

Established in the 2000 General Plan, the City uses a park classification system to categorize its parkland inventory, consisting of small neighborhood parks, large neighborhood parks, community parks, regional parks, natural area parkland, and special purpose facility parks. The developed and future acreage of all parkland in the City by park type, as inventoried in the 2023 City of Redding Parks and Trails Inventory provided by the City of Redding Parks and Recreation department, is shown in Table 5.15-7, *City of Redding Parks Inventory*. The location of the City's parks are shown on the exhibits associated Figure 5.15-4, *Parks in Redding*.

As shown in Table 5.15-7, the City does not currently meet its target of 10-acres per residents. In correspondence with the City Parks and Recreation department, it was noted that the distribution of parks is not consistent with park access rule of ½-mile for all residents. Furthermore, the facilities making up the park system are not up to the standards of the Parks, Trails and Open Space Master Plan (see Appendix 5.15-1).

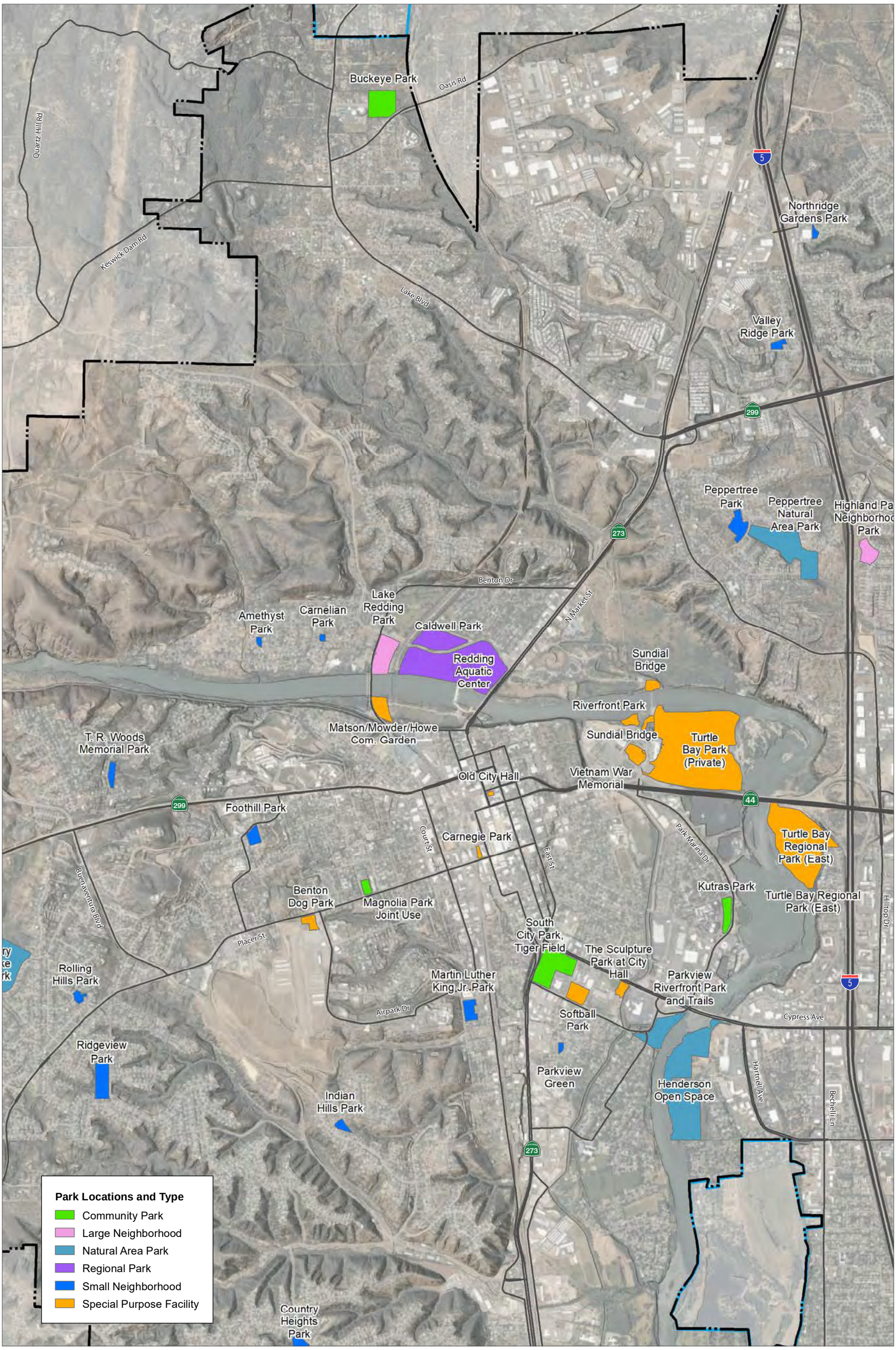
5.15 PUBLIC SERVICES AND RECREATION



Source: Generated using ArcMap, 2023; City of Redding GIS 2017, 2019, 2021, and 2022.

Figure 5.15-4a
Parks and Recreation Facilities in Redding

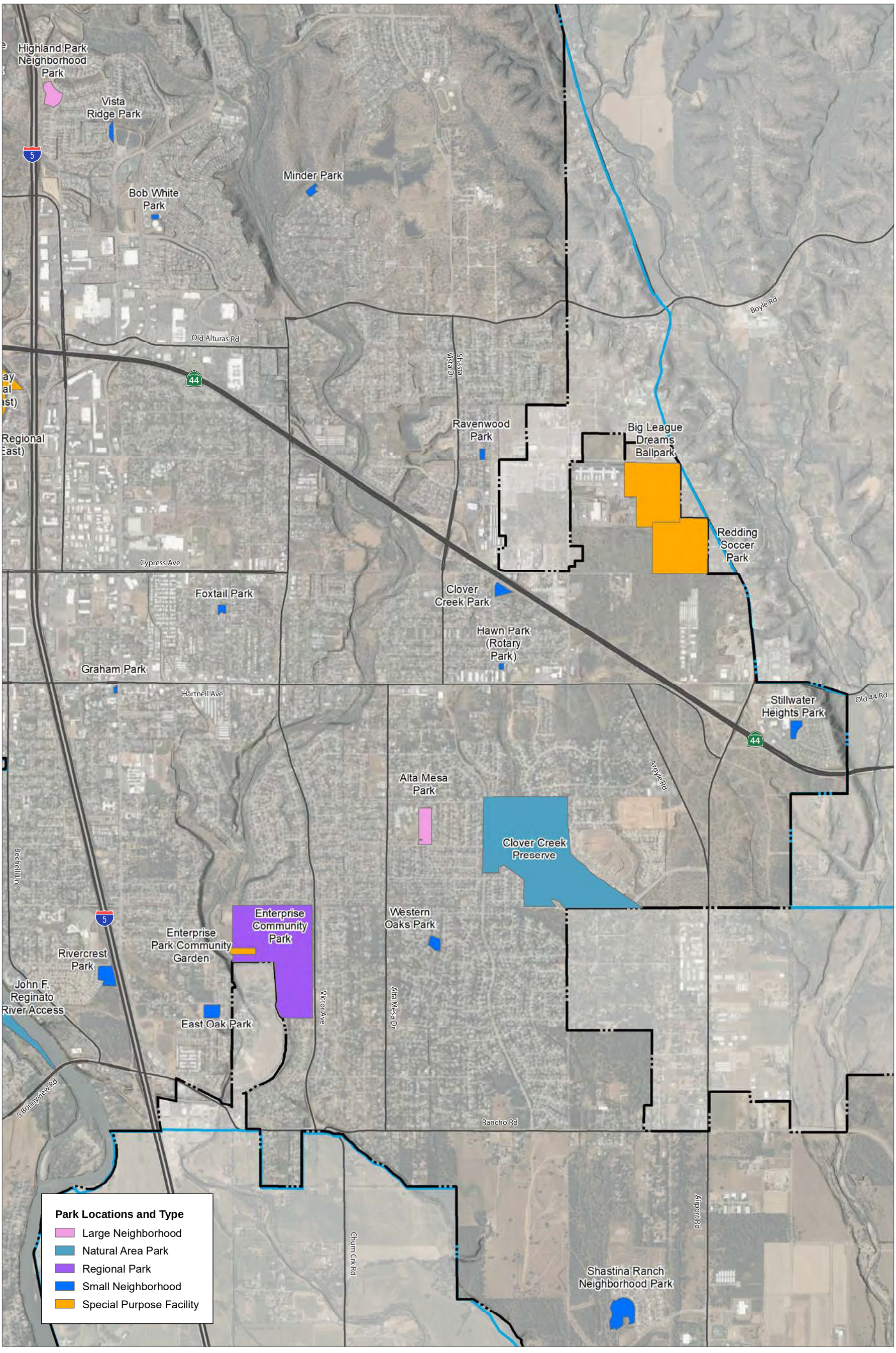
5.15 PUBLIC SERVICES AND RECREATION



Source: Generated using ArcMap, 2023; City of Redding GIS 2017, 2019, 2021, and 2022.

Figure 5.15-4b
Parks and Recreation Facilities in Redding - Map 1

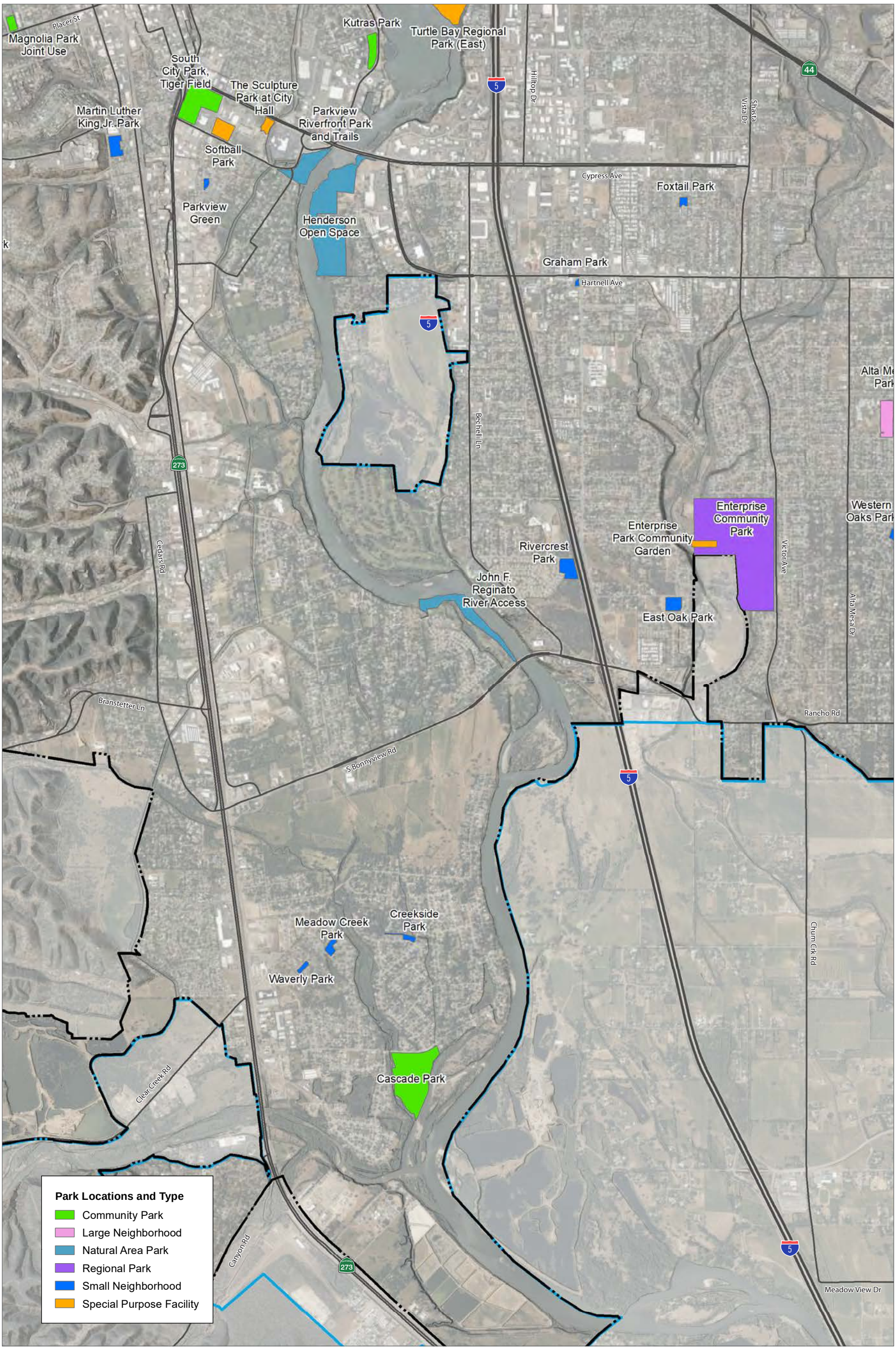
5.15 PUBLIC SERVICES AND RECREATION



Source: Generated using ArcMap, 2023; City of Redding GIS 2017, 2019, 2021, and 2022.

Figure 5.15-4c
Parks and Recreation Facilities in Redding - Map 2

5.15 PUBLIC SERVICES AND RECREATION



Source: Generated using ArcMap, 2023; City of Redding GIS 2017, 2019, 2021, and 2022.

Figure 5.15-4d
Parks and Recreation Facilities in Redding - Map 3

TABLE 5.15-7 CITY OF REDDING PARKS INVENTORY

Park Type/Park Name	Address	Site Size	Developed Acres	Future Acres
Small Neighborhood Parks				
Amethyst Park	2950 Amethyst Way	0.57	0.57	
Blossom Park Site	**1325 Montclair DR**	**5.88**		**5.88**
Bob White Park	931 Springer Drive	0.41	0.41	
Carnelian Park	2487 Lake Redding Drive	0.52	0.52	
Clover Creek Park	2555 Clover Creek Street	1.73	0.60	
Country Heights Park	2899 Howard Drive	3.58	1.75	
Creekside Park	6596 Creekside Street	3.13	0.87	2.26
East Oak Park	1399 Arizona Street	2.60	2.60	
Foothill Park	1160 Hillcrest Place	1.00	0.50	
Foxtail Park	1460 Foxtail Court	0.79	0.79	
Hawn Park (aka Rotary Park)	2703 Hawn Avenue	0.34	0.34	
Indian Hills Park	3575 Auburn Drive	1.40	0.75	
Magnolia Park	1614 Magnolia Ave	1.70	1.70	
Martin Luther King Jr. Park	1815 Sheridan Street	3.08	3.08	
Meadow Creek Park	6510 Hemlock Street	1.87	0.50	
Minder Park	1210 Minder Drive	1.00	1.00	
Northridge Gardens Park	960 Hillsdale Court	0.75	0.75	
Parkview Green	2855 Lanning Avenue	0.59	0.59	
Peppertree Park	500 Peppertree Lane	1.84	1.21	0.63
Ravenwood Park	2001 Charade Way	0.76	0.76	
Cumberland Park	2150 Cumberland Drive	6.06	1.83	
River Ridge Terrace Site	**1325 Spinnaker Drive**	**2.04**		**2.04**
Rolling Hills Park	3890 Oro Street	1.26	1.26	
Salmonberry Park Site	**1505 Imperial Drive**	**2.00**		**2.00**
Stillwater Heights Park	4525 Lynbrook Loop	1.85	1.85	
T.R. Woods Memorial Park	955 Royal Oaks Drive	3.00	2.00	
Valley Ridge Park	5414 Valley Ridge Drive	1.46	0.50	
Vista Ridge Park	555 Whet Owl Way	0.92	0.92	
Waverly Park	2550 Central Waverly	0.75	0.75	
Western Oaks Park	2370 Western Oak Drive	1.71	1.71	
Large Neighborhood Parks				
Alta Mesa Park	3600 Scorpius Way	5.83	5.83	
Churn Creek Site	**2013 East Cypress Avenue**	**17.03**		**17.03**
Gregory Lake	**118 Oak Mesa Lane**	**22.45**		**22.45**
Highland Park	555 Mill Valley Parkway	7.07	7.07	

Park Type/Park Name	Address	Site Size	Developed Acres	Future Acres
Lake Redding Park	2225 Benton Drive	10.00	10.00	
Mountain View School Park Site	**685 Shasta View Drive**	**6.41**		**6.41**
Panorama Park	**900, 950 Lake Boulevard**	**10.53**		**10.53**
Rivercrest Park	4325 Chinook Drive	6.25	3.85	2.40
Salt Creek Heights	**4270 Haleakala Ave**	**13.84**	**6.20**	**7.67**
Shastina Ranch	**8500 Shasta View Drive**	**11.00**		**11.00**
Sulphur Creek Park Site	**1547 Nancy Court**	**10.00**		**10.00**
Community Parks				
Buckeye Park	3500 Hiatt Drive	9.25	9.25	
Buenaventura Fields	**3881 Placer Road**	**15.00**		**15.00**
Caldwell East	**971 N Market Street**	**10.62**		**10.62**
Cascade Park	2975 Girvan Road	27.63	4.00	8.25
South City Park / Tiger Field	955 Parkview Avenue	17.75	17.75	
Twin View Site	**901 College View Drive**	**40.49**		**40.49**
Regional Parks				
Caldwell Park	58 Quartz Hill Road	73.84	63.84	
Enterprise Park	1755 El Vista Street	94.59	25.00	69.59
Natural Area Parks				
Buckeye Natural Area Park	3500 Hiatt Drive	17.84	17.84	
Clover Creek Preserve	705 Shasta View Drive	129.00	106.00	23.00
Mary Lake Park	1696 Lakeside Drive	29.59	29.59	
Peppertree Natural Area Park	515 Peppertree Lane	26.46	26.46	
Special Purpose Facilities				
Benton Dog Park	1700 Airpark Drive	2.30	2.30	
Carnegie Park	1552 Placer Street	0.63	0.63	
Civic Center Grounds	777 Cypress Avenue	3.29	3.29	
Community Gardens	1550 Riverside Drive	3.60	3.60	
Civic Auditorium Grounds	700 Auditorium Drive	10.00	10.00	
Graham Park	955 Hartnell Avenue	0.20	0.20	
John Reginato River Access	3855 South Bonnyview Road	6.00	4.00	2.00
Old City Hall	1313 Market Street	0.16	0.16	
Redding Soccer Park	9800 Old Oregon Trail	47.00	25.00	
Redding Sports Park (Big League Dreams)	20155 Viking Way	57.00	35.00	
Riverfront Park	800 Sundial Bridge Drive	19.00	1.90	
Rodeo Grounds (aka Posse Grounds)	715 Auditorium Drive	12.00	12.00	

Park Type/Park Name	Address	Site Size	Developed Acres	Future Acres
Sculpture Park at City Hall	777 Cypress Avenue	2.50	2.50	
Senior Citizens Hall	2290 Benton Drive	2.56	2.56	
Softball Park (S. City Park)	900 Parkview Avenue	0.00	0.00	
Stillwater Plant Site	**6383 Airport Road**	**80.00**		**80.00**
Turtle Bay Boat Launch	725 Auditorium Drive	2.00	2.00	
TOTAL		**877.67**	**471.04**	**308.51**
Trail Acres				
Trails (6.06 acres per mi, 28.3 mi)[1]			**174.52**	
Parks & Trails TOTAL		**877.67**	**645.56**	**308.51**
Population[2]			**93,611**	
Total Level of Service in 2023			**6.90**	

Source: Redding Parks and Recreation 2018; Redding 2019

[1] The methodology for the trail acreage calculation used in the Parks Master Plans is explained on page 11 of the Development Fee Nexus Study (Redding 2019)

[2] As provided by the City of Redding Parks and Recreation Department in the 2023 City of Redding Parks Inventory

*** Bolded parks and recreation facilities are planned and have not yet been constructed**

5.15.5.2 THRESHOLDS OF SIGNIFICANCE

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

REC-1 Result in Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; or

REC-2 Result in substantial adverse physical impacts associated with the provision of new or physically altered park facilities, or result in the need for new or physically altered park facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives.

REC-3 In combination with past, present, and reasonably foreseeable projects, result in cumulative parks and recreation impacts in the area.

5.15.5.3 PROPOSED GENERAL PLAN POLICIES

The following policies of the 2023-2045 General Plan are relevant to recreation facilities and services.

Environmental Justice Element

- Policy EJ6E: Strive to ensure that residents have access to a variety of recreational amenities by adhering to the policies of the *Community Development and Design; Natural Resource; Parks, Trails, and Recreation; Public Health and Safety Elements* of this General Plan; and the Parks, Trails, and Open Space Master Plan. Consult with representatives of local Wintu tribes as appropriate to locate and construct trails with cultural considerations in mind.
- Policy EJ6G: As funding and resources permit, implement the adopted Parks, Trails and Open Space Master Plan which will advance the role of parks, recreation and community services to establish parks as centers for community health, smart growth, equitable development and environmental justice.

Parks, Trails, and Recreation Element

- Policy R1A: Continue to monitor community demographics and socio-economic factors to ensure that recreation programs and park facilities with intent to meet the most pressing needs.
- Policy R1B: Explore the creation of recreation-based programs and park facilities in conjunction with law enforcement, schools, local colleges, local businesses and community groups that address social concerns for youth and lead to healthy outcomes and improved community wellbeing.
- Policy R1C: Program recreation activities jointly with schools, local colleges, and community partners, where appropriate.
- Policy R1D: Continue to design parks, trails and recreational facilities to support activity throughout the year. Work to provide and support cultural and recreational events and activities to engage residents.
- Policy R2A: Seek to identify and obtain funding to prepare and implement a Regional River Parkway Plan for areas along the Sacramento River between Shasta Dam and the City of Anderson to address:
  - Resource protection.
  - Habitat assessment and management.
  - Recreational opportunities.
  - Location of existing and proposed facilities.
  - Recommendations for speed limits and use restrictions on the river, where warranted.
  - Acquisition of lands.
  - Management and operations.
  - Restoration activities.

- **Policy R2C**: Continue to plan and implement a public trail network along the Sacramento River that provides active and passive recreation, amenities, public access, and wayfinding to ensure connectivity to other destinations.
- **Policy R2D**: Protect and enhance access for public safety, fire and rescue activities to the entire riverfront and creek corridors while minimizing and mitigating impacts to the extent feasible.
- **Policy R2E**: Encourage community stewardship and volunteerism to protect, preserve, rehabilitate and highlight the Sacramento River corridor and its natural, historical, pre-historical and cultural resources.
- **Policy R2F**: Plan, encourage and support projects and efforts to preserve and restore native habitat along the Sacramento River and creek corridors in the Planning Area by preserving native plants and by removing invasive non-native plants. Fund and staff regularly scheduled preventative maintenance as budget allows.
- **Policy R2H**: Collaborate with local businesses and independent ventures that provide and support a diverse range of recreational services, and amenities along the Sacramento River. Evaluate and encourage opportunities for updated and innovative recreational infrastructure through public/ private partnerships.
- **Policy R3A**: Establish park sites, trails, public open-space areas and other recreational lands along the river and creek corridors through public and private land acquisitions, land dedications, conservation easements, and similar mechanisms as opportunities allow.
- **Policy R5A:** Continue to implement and update as appropriate the Parks, Trails, and Open Space Master Plan (Parks Master Plan).
- **Policy R5C:** Plan to locate at least one Large Community Park in each quadrant of the city as indicated generally on the General Plan Diagram.
- **Policy R5D:** Accept park land dedications only when such dedications meet the goals and policies of the Parks, Trails, and Open Space Master Plan.
- **Policy R5E:** As opportunities and funding are available, acquire Large Neighborhood and Community Park sites in advance of their actual need and explore innovative methods for acquiring park and land for recreational activities and amenities.
- **Policy R5F:** Work to disperse a variety of park facilities and amenities throughout the community, with the goal that every resident lives within a one-half mile walkable or bikeable radius to the nearest park, trail, or recreational amenity.
- **Policy R5G:** Locate parks adjacent to school facilities, whenever possible, to maximize recreational opportunities and joint use of facilities.
- **Policy R5H:** Work to establish agreements with local schools which will allow other agencies, groups, or members of the public to use special facilities and grounds (such as multipurpose rooms, gymnasiums, sports fields, basketball courts, etc.) during times when school is not in session to accommodate additional community and recreational activities. Where such agreements are in effect, the facilities may be included in the City's parkland inventory.
- **Policy R5I:** Work to increase the acreage and quality of developed park facilities by placing a priority on:

  - Building out existing Large Neighborhood and/ or Community Parks that are underdeveloped.
  - Encouraging developers of large residential projects to dedicate land beyond minimum code requirements.
  - Encouraging community-based park and trail improvements such as gifts or community-improvement projects.
  - Coordinating improvements and programs with nonprofit organizations, schools, other agencies, and private-sector providers to avoid duplication of facilities and programs.

- **Policy R5J:** Encourage co-location of public and private parks with flood-control facilities, such as stormwater detention basins, where appropriate, to maximize the efficient use of land.
- **Policy R5K:** Pursue the acquisition of surplus federal, state, and local lands, and grants, to meet present and future park and recreation needs.
- **Policy R5L:** Work with citizens groups and other agencies to prioritize development of and identify appropriate locations for Special Purpose Facilities. Facilities to be considered may include sports field complexes, indoor and outdoor recreation facilities, or an indoor or outdoor aquatics complex.
- **Policy R5M:** New parks and recreational facilities should be designed for residents of all abilities and at all stages of life.
- **Policy R6A:** Adhere to the standards of the Parks, Trails, and Open Space Master Plan to ensure that new residential projects provide appropriate levels of improved open-space and/or recreational amenities.
- **Policy R6B:** Continue to require developers of residential property to contribute park sites or pay in-lieu fees allowed by State law.
- **Policy R6C:** Continue to require both residential and commercial development to pay impact fees for their fair share of the costs of constructing/providing new facilities so that new development maintains the current service level of park facilities.
- **Policy R6D:** Adjust parkland in-lieu fees as necessary to reflect current land values.
- **Policy R7A:** Encourage the County to develop a regional park system or provide financial support to other local jurisdictions providing parkland and amenities for County residents.
- **Policy R8A:** Encourage a regional approach to the provision, planning, and development of recreation facilities and programs by promoting cooperation with school districts, special service districts, community-based organizations, neighboring communities, Shasta County, State, and the Federal government. Recognize that policies and programs restricted to jurisdictional boundaries can impede the provision of high-quality facilities and programs that benefit the citizens of Redding.
- **Policy R10A:** Adjust park-development fees regularly to reflect current park-development costs.
- **Policy R10B:** Explore innovative means to fund new facilities and maintain existing and future parks.

- **Policy R10C:** Continue to offer "Adopt a Park" and "Adopt a Trail" programs to encourage volunteer groups, service, and other members of the private sector to assist with the development and maintenance of park and recreation facilities. If ongoing maintenance is an issue, innovative ways of providing this service need exploration prior to any prohibition on development of these park and recreation facilities.
- **Policy R10D:** Pursue joint development and service agreements with school districts.
- **Policy R10E:** Ensure all new neighborhood parks and existing parks where feasible, are placed into Landscape Maintenance Districts if approved through proper protest voting procedures.
- **Policy R11A:** Utilize as appropriate the trail system plan of the Parks, Trails, and Open Space Master Plan to locate future trails. In general, the trail system should:
  - Focus on linking neighborhoods to one another and other land uses and significant destination points within the community.
  - Separate bicyclists and pedestrians from vehicular traffic, whenever feasible.
  - Provide continuous trail connections that serve multiple needs, focusing on recreation and active transportation, and combining the two in a multifunctional facility when advantageous.
  - Encourage diverse design and construction techniques for trails.
  - Ensure appropriate fire safety standards and fire equipment access where feasible.
  - Provide trailhead amenities such as parking, restrooms, information boards, signage and maps as funding allows.
- **Policy R11B:** Continue development of the Sacramento River Trail connecting recreational, educational, cultural, commercial, and residential areas/uses.
- **Policy R11C:** Continue to obtain land dedications and/or easements for the development of public trails and the Regional River Parkway through direct purchases and the discretionary approval process for new development.
- **Policy R11D:** Pursue funding which can be used for parkway and trail-system planning, land acquisitions, construction, and maintenance.
- **Policy R11E:** Bicycle and trail systems should be designed in a manner that considers the privacy and security of adjacent land uses, allows for easy maneuvering, and promotes user safety.
- **Policy R11F:** Encourage the establishment of volunteer bicycle-path/recreation-trail patrols to improve the real and perceived level of safety for users of those facilities.
- **Policy R12A:** Encourage efforts to develop recreational opportunities in the natural areas neighboring the City, including the Swasey Recreation Area, Horsetown- Clear Creek Preserve, the Westside Trails, and the Clear Creek Trail.
- **Policy R12B:** Connect the City's trail system to regional trails where possible and collaborate on the development of a robust trail network.

5.15.5.4 IMPACT DISCUSSION

REC-1	The proposed project would not increase the use of existing neighborhood and regional parks or other recreational facilities, such that substantial physical deterioration of the facility would occur or be accelerated. [Threshold REC-1]

The growth forecasted under the 2023-2045 General Plan would result in an estimated population of 137,377 residents in the City and SOI by 2045, increasing the existing population in the city and SOI from 117,938 in 2020[1]. This increase in population would increase the use of existing park and recreational facilities.

Each jurisdiction in California determines the appropriate park standard based on the guidance provided by Section 666477 of the California Government Code, commonly referred to as the Quimby Act, which requires a standard of 5 acres of parkland per 1,000 residents. The City's park standard is 10 acres of parkland per 1,000 residents (Goal R5 in the 2023-2045 General Plan).

With 646 acres of existing parks and recreational facilities (including approximately 174.5 acres of trails), the City currently provides approximately 6.90 acres per 1,000 residents (as calculated by the 2023 City of Redding Parks and Trails Inventory). Using the City's established park standard of 10 acres for every 1,000 residents, approximately 326 acres of parkland would be required to meet the standard based on the current population[2].

The Parks, Trails, and Open Space Master Plan recognizes that the construction of the planned parks and recreation facilities will depend on the availability of funding. Under the assumption that all planned parks will be developed, the City's level of service for parks and recreation facilities would be 6.95 acres per 1,000 residents by 2045 under the 2023-2045 General Plan. To meet the 10 acres per 1,000 residents service standard, approximately 419 acres of parkland would be required to serve the 2045 population.

However, the City will continue to update its Parks, Trails, and Open Space Master Plan as necessary to ensure that enough parkland is available to meet the needs of its residents and the meet the established General Plan standard. The 2023-2045 General Plan also includes several policies that would promote the development new park facilities and help to fund them. Policy R6 directs the City to continue to require both residential and commercial development to pay impact fees for their fair share of the costs of

[1] See Chapter 3, *Project Description*, for more information about the 2023-2045 General Plan Planning Horizon development and modeling assumptions.

[2] The current population used in this calculation is 106,81 residents, as shown in Table 3-2 of Chapter 3, *Project Description*. As noted in Chapter 3, the estimates and projections used in this EIR are conservative and based on regional travel demand model developed by SRTA. Therefore, the acreage needed to meet the City service standard, as expressed here, is conservative and may overestimate the acreage needed to meet current demand.

constructing/providing new facilities so that new development maintains the current service level of park facilities. Policy R10A also directs the City to adjust park-development fees regularly to reflect current park-development costs. Furthermore, this General Plan Update does not include any changes to the City's land use designations that would induce population growth beyond what expected to occur in the City over the next 22 years. Therefore, the proposed project will be less than significant.

Level of Significance Before Mitigation: REC-1 would be less than significant.

Mitigation Measures

No mitigation measures are required.

REC-2	The proposed project would not include recreational facilities or require the construction or expansion of additional recreational facilities that might have an adverse physical effect on the environment. [Threshold REC-2]

The 2023-2045 General Plan would result in development that would increase the demand for parks and recreational facilities. This would likely result in the need for new or expanded park facilities. However, the locations of such facilities are not known at this time. As a result, it cannot be determined what project-specific environmental impacts would occur from their construction and operation. These potential impacts would be identified during the facility site selection process.

In addition, the 2023-2045 General Plan includes policies and actions that would help ensure that parkland goals are met. Policies R3A, R5A, R5C, R5F, R5I ensure that new parkland and recreational facilities are developed to accommodate the growing population. Additionally, Policies R5K, R6B, R6C, R6D, R10A, and R10B ensure that park and recreational facilities are funded.

As a result of the proposed policies, parks and recreation facility impacts would be less than significant.

Level of Significance Before Mitigation: REC-2 would be less than significant.

Mitigation Measures

No mitigation measures are required.

REC-3	Implementation of the proposed project would not in combination with past, present, and reasonably foreseeable projects, result in cumulative parks and recreation impacts in the area. [Threshold REC-3]

Future growth in the area would result in increased demand for park and recreational facilities throughout the city and region. As a result, and as described in impact discussion REC-1 and REC-2, the City would need to expand and construct additional parks and other recreational facilities to meet the increased demand and maintain existing service levels. State law allows jurisdictions to require additional development to fund park improvements, and the City requires new residential development to pay development impact fees to help fund parks and recreation. Proper implementation of the policies listed under Impacts REC-1 would also help ensure the provision of adequate parklands along with new development. The final location and size of additional facilities would be determined as part of future development activity, and as specific parkland expansion or improvement projects are identified, additional project-specific, environmental analysis would be completed. As a result, the proposed project would not result in a cumulatively considerable impact to park and recreational facilities and cumulative impacts would be less than significant. No mitigation measures are required.

Level of Significance Before Mitigation: REC-3 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.15.6 REFERENCES

Benda, David. 2020, February 25. Redding gets $6.7M state grant to expand, improve Caldwell Park. https://www.redding.com/story/news/local/2020/02/25/redding-gets-6-7-m-grant-expand-improve-caldwell-park/4871050002/

California Department of Education. 2023a, January 13 (Accessed). Enrollment Multi-Year Summary by Grade- Columbia-East Valley K-6 Community Day Report (45-69948-0101113). https://dq.cde.ca.gov/dataquest/dqcensus/EnrGrdYears.aspx?cds=45699480101113&agglevel=school&year=2021-22

———. 2023b, January 13 (Accessed). Enrollment Multi-Year Summary by Grade- Columbia Elementary Report (45-69948-6050181). https://dq.cde.ca.gov/dataquest/dqcensus/EnrGrdYears.aspx?cds=45699486050181&agglevel=school&year=2021-22

———. 2023c, January 13 (Accessed). Enrollment Multi-Year Summary by Grade- Mountain View Middle Report (45-69948-6117857). https://dq.cde.ca.gov/dataquest/dqcensus/EnrGrdYears.aspx?cds=45699486117857&agglevel=school&year=2021-22

———. 2023d, January 13 (Accessed). Enrollment Multi-Year Summary by Grade- Redding School of the Arts Report (45-69948-0134122). https://dq.cde.ca.gov/dataquest/dqcensus/EnrGrdYears.aspx?cds=45699480134122&agglevel=school&year=2021-22

———. 2023e, January 13 (Accessed). Enrollment Multi-Year Summary by Grade- Alta Mesa Elementary Report (45-69971-6050215). https://dq.cde.ca.gov/dataquest/dqcensus/EnrGrdYears.aspx?cds=45699716050215&agglevel=school&year=2021-22

———. 2023f, January 13 (Accessed). Enrollment Multi-Year Summary by Grade- Boulder Creek Elementary Report (45-69971-6111470). https://dq.cde.ca.gov/dataquest/dqcensus/EnrGrdYears.aspx?cds=45699716111470&agglevel=school&year=2021-22

———. 2023g, January 13 (Accessed). Enrollment Multi-Year Summary by Grade- Lassen View Elementary Report (45-69971-6050223). https://dq.cde.ca.gov/dataquest/dqcensus/EnrGrdYears.aspx?cds=45699716050223&agglevel=school&year=2021-22

———. 2023h, January 13 (Accessed). Enrollment Multi-Year Summary by Grade- Mistletoe Elementary Report (45-69971-6050231). https://dq.cde.ca.gov/dataquest/dqcensus/EnrGrdYears.aspx?cds=45699716050231&agglevel=school&year=2021-22

———. 2023i, January 13 (Accessed). Enrollment Multi-Year Summary by Grade- PACE Academy Charter Report (45-69971-0135830). https://dq.cde.ca.gov/dataquest/dqcensus/EnrGrdYears.aspx?cds=45699710135830&agglevel=school&year=2021-22

———. 2023j, January 13 (Accessed). Enrollment Multi-Year Summary by Grade- Parsons Junior High Report (45-69971-6050249). https://dq.cde.ca.gov/dataquest/dqcensus/EnrGrdYears.aspx?cds=45699716050249&agglevel=school&year=2021-22

———. 2023k, January 13 (Accessed). Enrollment Multi-Year Summary by Grade- Redding Collegiate Academy Report (45-69971-0135848). https://dq.cde.ca.gov/dataquest/dqcensus/EnrGrdYears.aspx?cds=45699710135848&agglevel=school&year=2021-22

———. 2023l, January 13 (Accessed). Enrollment Multi-Year Summary by Grade- Rother Elementary Report (45-69971-6050256). https://dq.cde.ca.gov/dataquest/dqcensus/EnrGrdYears.aspx?cds=45699716050256&agglevel=school&year=2021-22

———. 2023m, January 13 (Accessed). Enrollment Multi-Year Summary by Grade- Shasta Meadows Elementary Report (45-69971-6050264). https://dq.cde.ca.gov/dataquest/dqcensus/EnrGrdYears.aspx?cds=45699716050264&agglevel=school&year=2021-22

———. 2023n, January 13 (Accessed). Enrollment Multi-Year Summary by Grade- Buckeye School of the Arts Report (45-75267-6050090). https://dq.cde.ca.gov/dataquest/dqcensus/EnrGrdYears.aspx?cds=45752676050090&agglevel=school&year=2021-22

———. 2023o, January 13 (Accessed). Enrollment Multi-Year Summary by Grade- Gateway Educational Options Report (45-75267-4530101). https://dq.cde.ca.gov/dataquest/dqcensus/EnrGrdYears.aspx?cds=45752674530101&agglevel=school&year=2021-22

———. 2023p, January 13 (Accessed). Enrollment Multi-Year Summary by Grade- Rocky Point Charter Report (45-75267-0113407).

https://dq.cde.ca.gov/dataquest/dqcensus/EnrGrdYears.aspx?cds=45752670113407&agglevel=school&year=2021-22

———. 2023q, January 13 (Accessed). Enrollment Multi-Year Summary by Grade- Grant Elementary Report (45-70003-6050330). https://dq.cde.ca.gov/dataquest/dqcensus/EnrGrdYears.aspx?cds=45752674530101&agglevel=school&year=2021-22

———. 2023r, January 13 (Accessed). Enrollment Multi-Year Summary by Grade- Pacheco Elementary Report (45-70094-6050447). https://dq.cde.ca.gov/dataquest/dqcensus/EnrGrdYears.aspx?cds=45700946050447&agglevel=school&year=2021-22

———. 2023s, January 13 (Accessed). Enrollment Multi-Year Summary by Grade- Bonny View Elementary Report (45-70110-6050462). https://dq.cde.ca.gov/dataquest/dqcensus/EnrGrdYears.aspx?cds=45701106050462&agglevel=school&year=2021-22

———. 2023t, January 13 (Accessed). Enrollment Multi-Year Summary by Grade- Cypress Elementary Report (56-73759-6093165). https://dq.cde.ca.gov/dataquest/dqcensus/EnrGrdYears.aspx?cds=56737596093165&agglevel=school&year=2021-22

———. 2023u, January 13 (Accessed). Enrollment Multi-Year Summary by Grade- Manzanita Elementary Report (45-70110-6050512). https://dq.cde.ca.gov/dataquest/dqcensus/EnrGrdYears.aspx?cds=45701106050512&agglevel=school&year=2021-22

———. 2023v, January 13 (Accessed). Enrollment Multi-Year Summary by Grade- Monarch Learning Center Report (45-70110-6117931). https://dq.cde.ca.gov/dataquest/dqcensus/EnrGrdYears.aspx?cds=45701106117931&agglevel=school&year=2021-22.

———. 2023w, January 13 (Accessed). Enrollment Multi-Year Summary by Grade- Sequoia Middle Report (45-70110-6050520). https://dq.cde.ca.gov/dataquest/dqcensus/EnrGrdYears.aspx?cds=45701106050520&agglevel=school&year=2021-22

———. 2023x, January 13 (Accessed). Enrollment Multi-Year Summary by Grade- Stellar Charter Report (45-70110-0135889). https://dq.cde.ca.gov/dataquest/dqcensus/EnrGrdYears.aspx?cds=45701100135889&agglevel=school&year=2021-22

———. 2023y, January 13 (Accessed). Enrollment Multi-Year Summary by Grade- Sycamore Elementary Report (45-70110-6050538). https://dq.cde.ca.gov/dataquest/dqcensus/EnrGrdYears.aspx?cds=45701106050538&agglevel=school&year=2021-22

———. 2023z, January 13 (Accessed). Enrollment Multi-Year Summary by Grade- Turtle Bay Report (45-70110-6101612). https://dq.cde.ca.gov/dataquest/dqcensus/EnrGrdYears.aspx?cds=45701106101612&agglevel=school&year=2021-22

———. 2023aa, January 13 (Accessed). Enrollment Multi-Year Summary by Grade- Redding STEM Academy Report (45-10454-0132944). https://dq.cde.ca.gov/dataquest/dqcensus/EnrGrdYears.aspx?cds=45104540132944&agglevel=school&year=2021-22

———. 2023ab, January 13 (Accessed). Enrollment Multi-Year Summary by Grade- Shasta County Juvenile Court Report (45-10454-4530150). https://dq.cde.ca.gov/dataquest/dqcensus/EnrGrdYears.aspx?cds=45104544530150&agglevel=school&year=2021-22

———. 2023ac, January 13 (Accessed). Enrollment Multi-Year Summary by Grade- Shasta County Independent Study Charter Report (45-10454-0132647). https://dq.cde.ca.gov/dataquest/dqcensus/EnrGrdYears.aspx?cds=45104540132647&agglevel=school&year=2021-22

———. 2023ad, January 13 (Accessed). Enrollment Multi-Year Summary by Grade- Enterprise High Report (45-70136-4532750). https://dq.cde.ca.gov/dataquest/dqcensus/EnrGrdYears.aspx?cds=45701364532750&agglevel=school&year=2021-22

———. 2023ae, January 13 (Accessed). Enrollment Multi-Year Summary by Grade- Pioneer Continuation High Report (45-70136-4530200). https://dq.cde.ca.gov/dataquest/dqcensus/EnrGrdYears.aspx?cds=45701364530200&agglevel=school&year=2021-22

———. 2023af, January 13 (Accessed). Enrollment Multi-Year Summary by Grade- Shasta Secondary Home Report (45-70136-4530267). https://dq.cde.ca.gov/dataquest/dqcensus/EnrGrdYears.aspx?cds=45701364530267&agglevel=school&year=2021-22

———. 2023ag, January 13 (Accessed). Enrollment Multi-Year Summary by Grade- North State Independence High Report (45-70136-4530309).

https://dq.cde.ca.gov/dataquest/dqcensus/EnrGrdYears.aspx?cds=45701364530309&agglevel=school&year=2021-22

———. 2023ah, January 13 (Accessed). Enrollment Multi-Year Summary by Grade- Shasta High Report (45-70136-4537304). https://dq.cde.ca.gov/dataquest/dqcensus/EnrGrdYears.aspx?cds=45701364537304&agglevel=school&year=2021-22

———. 2023ai, January 13 (Accessed). Enrollment Multi-Year Summary by Grade- University Preparatory Report (45-70136-0106013). https://dq.cde.ca.gov/dataquest/dqcensus/EnrGrdYears.aspx?cds=45701360106013&agglevel=school&year=2021-22

California Department of Forestry and Fire Prevention (CAL FIRE), 2007. Shasta County FHSZ [Fire Hazard Severity Zone] Map. http://www.fire.ca.gov/fire_prevention/fhsz_maps_shasta.

Chandler, Michele. 2022, February 22. Redding plans ninth fire station, new firefighters, under city proposal. *Redding Record Searchlight*. https://www.redding.com/story/news/2022/02/25/redding-council-oks-new-fire-station-firefighters-fire-truck-engine-city-proposal-response-time/6940985001/

Department of Finance (DOF). 2022. E-5 Population and Housing Estimates for Cities, Counties, and the State, 2020-2022. https://dof.ca.gov/forecasting/demographics/estimates/e-5-population-and-housing-estimates-for-cities-counties-and-the-state-2020-2022/

National Center for Education Statistics. 2023a, January 15 (Accessed). School Directory Information (2021-2022 school year) -Columbia-East Valley K-6 Community Day. https://nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=Columbia-East+Valley+Community+Day&City=redding&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=060945011272

———. 2023b, January 15 (Accessed). School Directory Information (2021-2022 school year)-Columbia-East Valley K-6 Community Day. https://nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=Columbia-East+Valley+Community+Day&City=redding&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=060945011272

———. 2023c, January 15 (Accessed). School Directory Information (2021-2022 school year)- Mountain View Middle. https://nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=Mountain+View+Middle&City=redding&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=060945008635

———. 2023d, January 15 (Accessed). School Directory Information (2021-2022 school year)- Redding School of the Arts. https://nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=Redding+School+of+the+Arts+&City=redding&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=060238514024

———. 2023e, January 15 (Accessed). School Directory Information (2021-2022 school year)- Alta Mesa Elementary. https://nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=Alta+Mesa+Elementary&City=redding&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=061281001439

———. 2023f, January 15 (Accessed). School Directory Information (2021-2022 school year)- Enterprise Elementary. https://nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=Boulder+Creek+Elementary&City=redding&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=061281002810

———. 2023g, January 15 (Accessed). School Directory Information (2021-2022 school year)- Lassen View Elementary. https://nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=Lassen+View+Elementary&City=redding&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=061281001440

———. 2023h, January 15 (Accessed). School Directory Information (2021-2022 school year)- Mistletoe Elementary. https://nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=Mistletoe+Elementary&City=redding&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=061281001441

———. 2023i, January 15 (Accessed). School Directory Information (2021-2022 school year)- PACE Academy Charter. https://nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=PACE+Academy&City=redding&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=061281014194

———. 2023j, January 15 (Accessed). School Directory Information (2021-2022 school year)- Parsons Junior High. https://nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=Parsons+Jr.+High&City=redding&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=061281001442

———. 2023k, January 15 (Accessed). School Directory Information (2021-2022 school year)- Redding Collegiate Academy. https://nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=Redding+Collegiate+Academy&City=redding&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=061281014193

———. 2023l, January 15 (Accessed). School Directory Information (2021-2022 school year)- Rother Elementary. https://nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=Rother+Elementary&City=redding&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=061281001443

———. 2023m, January 15 (Accessed). School Directory Information (2021-2022 school year)- Shasta Meadows Elementary. https://nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=Shasta+Meadows+Elementary&City=redding&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=061281001444

———. 2023n, January 15 (Accessed). School Directory Information (2021-2022 school year)- Buckeye School of the Arts. https://nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=Buckeye+School+of+the+Arts&City=redding&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=061495001682

———. 2023o, January 15 (Accessed). School Directory Information (2021-2022 school year)- Gateway Educational Options Report. https://nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=Gateway+Educational+Options&City=redding&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=061495001636

———. 2023p, January 15 (Accessed). School Directory Information (2021-2022 school year)- Rocky Point Charter. https://nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=Rocky+Point+Charter&City=redding&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=060246311927

———. 2023q, January 15 (Accessed). School Directory Information (2021-2022 school year)- Grant Elementary. https://nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=Grant+Elementary&City=redding&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=061569001980

———. 2023r, January 15 (Accessed). School Directory Information (2021-2022 school year)- Pacheco Elementary. https://nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=Pacheco+Elementary&City=redding&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=062928004522

———. 2023s, January 15 (Accessed). School Directory Information (2021-2022 school year)- Bonny View Elementary. https://nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=Bonny+View+Elementary&City=redding&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=063204004925

———. 2023t, January 15 (Accessed). School Directory Information (2021-2022 school year)- Cypress Elementary. https://nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=Cypress+Elementary&City=redding&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=063204004926

———. 2023u, January 15 (Accessed). School Directory Information (2021-2022 school year)- Manzanita Elementary. https://nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=Manzanita+Elementary&City=redding&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=063204004928

———. 2023v, January 15 (Accessed). School Directory Information (2021-2022 school year)- Monarch Learning Center. https://nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=Monarch+Learning+Center&City=redding&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=060199708636

———. 2023w, January 15 (Accessed). School Directory Information (2021-2022 school year)- Sequoia Middle. https://nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=Sequoia+Middle&City=redding&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=063204004929

———. 2023x, January 15 (Accessed). School Directory Information (2021-2022 school year)- Stellar Charter. https://nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=Stellar+Charter&City=redding&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=063204014118

———. 2023y, January 15 (Accessed). School Directory Information (2021-2022 school year)- Sycamore Elementary. https://nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=Monarch+Learning+Center&City=redding&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=060199708636

———. 2023z, January 15 (Accessed). School Directory Information (2021-2022 school year)- Turtle Bay. https://nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=Turtle+Bay&City=redding&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=063204009182

———. 2023aa, January 15 (Accessed). School Directory Information (2021-2022 school year)- Redding STEM Academy. https://nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=Redding+STEM+Academy&City=redding&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=060159513960

———. 2023ab, January 15 (Accessed). School Directory Information (2021-2022 school year)- Shasta County Juvenile Court. https://nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=Juvenile+Court+&City=redding&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=069103702799

———. 2023ac, January 15 (Accessed). School Directory Information (2021-2022 school year)- Shasta County Independent Study. https://nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=Shasta+County+Independent+Study&City=redding&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=069103712305

———. 2023ad, January 15 (Accessed). School Directory Information (2021-2022 school year)- Enterprise High. https://nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=Enterprise+High&City=redding&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=063660006210

———. 2023ae, January 15 (Accessed). School Directory Information (2021-2022 school year)- Pioneer Continuation High. https://nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=Pioneer+Continuation+High&City=redding&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=063660008637

———. 2023af, January 15 (Accessed). School Directory Information (2021-2022 school year)- Shasta Charter Academy. https://nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=Shasta+Charter+Academy&City=redding&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=060230608391

———. 2023ag, January 15 (Accessed). School Directory Information (2021-2022 school year)- Shasta Collegiate Academy. https://nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=Shasta+Collegiate+Academy&City=redding&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=063660010676

———. 2023ah, January 15 (Accessed). School Directory Information (2021-2022 school year)- Shasta High. https://nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=Shasta+High&City=redding&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=063660006213

———. 2023ai, January 15 (Accessed). School Directory Information (2021-2022 school year)- University Preparatory. https://nces.ed.gov/ccd/schoolsearch/school_detail.asp?Search=1&InstName=University+Preparatory&City=redding&SchoolType=1&SchoolType=2&SchoolType=3&SchoolType=4&SpecificSchlTypes=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=060175911467

Redding, City of. 2019, March 5. Development Impact Mitigation Fee Nexus Study. https://www.cityofredding.org/home/showpublisheddocument/24022/637286095294630000

———. 2021. Capital Improvement Plan 2021-2026. https://www.cityofredding.org/home/showpublisheddocument/26734/637763011006830000

———. 2022a, January 9 (Accessed). Ready for Wildfire. https://cityofredding.civilspace.io/en/projects/ready-for-wildfire

———. 2022b, July 1. City of Redding Impact Fees. https://www.cityofredding.org/home/showpublisheddocument/28035/637965037777330000

———. 2022c. City of Redding Biennial Budget 2021 – 2023. https://www.cityofredding.org/home/showpublisheddocument/26110/637638572251430000

———. 2023a, January 19. Kutras Park. https://www.cityofredding.org/Home/Components/FacilityDirectory/FacilityDirectory/146/36?ba

cklist=%2fdepartments%2fparks-and-recreation%2fparks%2fpark-finder%2f-npage-2%2f-point-_40%40549778178648936_-122%4044972523318806_10%40027113922761126

———. 2023b, January 19. Henderson Open Space. https://www.cityofredding.org/Home/Components/FacilityDirectory/FacilityDirectory/120/36?backlist=%2fdepartments%2fparks-and-recreation%2fparks%2fpark-finder%2f-npage-2%2f-point-_40%40549778178648936_-122%4044972523318806_10%40027113922761126

———. 2023c, January 19. Mountain View Middle School. https://www.cityofredding.org/Home/Components/FacilityDirectory/FacilityDirectory/132/36?backlist=%2fdepartments%2fparks-and-recreation%2fparks%2fpark-finder%2f-npage-2%2f-point-_40%40549778178648936_-122%4044972523318806_10%40027113922761126

———. 2023d, January 19. Parkview Riverfront Park. https://www.cityofredding.org/Home/Components/FacilityDirectory/FacilityDirectory/88/36?backlist=%2fdepartments%2fparks-and-recreation%2fparks%2fpark-finder%2f-npage-3

———. 2023e, January 19. Sequoia Middle School. https://www.cityofredding.org/Home/Components/FacilityDirectory/FacilityDirectory/136/36?backlist=%2fdepartments%2fparks-and-recreation%2fparks%2fpark-finder%2f-npage-3

———. 2023f, January 19. Parsons Junior High School. https://www.cityofredding.org/Home/Components/FacilityDirectory/FacilityDirectory/134/36?backlist=%2fdepartments%2fparks-and-recreation%2fparks%2fpark-finder%2f-npage-3

———. 2023g, January 19. UPrep. https://www.cityofredding.org/Home/Components/FacilityDirectory/FacilityDirectory/138/36?backlist=%2fdepartments%2fparks-and-recreation%2fparks%2fpark-finder%2f-npage-4

———. 2023h, January 19. Turtle Bay East Park. https://www.cityofredding.org/Home/Components/FacilityDirectory/FacilityDirectory/148/36?backlist=%2fdepartments%2fparks-and-recreation%2fparks%2fpark-finder%2f-npage-3Redding Parks and Recreation. 2018a, August. Parks, Trails, and Open Space Master Plan- Introduction and Summary. https://www.cityofredding.org/home/showpublisheddocument/20000/636728655614000000

———. 2018b, August. Parks, Trails, and Open Space Master Plan- Parks Strategy. https://www.cityofredding.org/home/showpublisheddocument/19996/636728652909870000

Redding Police Department. 2016, July. Redding Police Department Strategic Plan. https://www.cityofredding.org/home/showdocument?id=10048

Service Provider Questionnaires (Appendix 5.15-1). 2023, May 24.

Shasta County Office of Education (SCOE). 2023a, January 13 (Accessed). Developer Fee Services. https://www.shastacoe.org/administrative-services-division/business-services/developer-fee-services

———. 2023b, January 13 (Accessed). District and School Information. https://www.shastacoe.org/shasta-county-schools/pcs

———. 2022. Report to the Community 2022-2023. https://drive.google.com/file/d/1cFq6YAoM8kctq6WjBa7MB3I5oG0a1A4c/view

Shasta Local Agency Formation Commission. 2022, December 2. City of Redding Municipal Services Review & Sphere of Influence Update. https://www.shastalafco.org/images/Local.Agencies/City_of_Redding_MSR_SOI_Update_Commission_Approved_December-2022.pdf

5.16 TRANSPORTATION

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential for implementation of the Redding General Plan Update to impact transportation facilities and circulation in the City of Redding and its sphere of influence (SOI).

5.16.1 ENVIRONMENTAL SETTING

5.16.1.1 REGULATORY FRAMEWORK

State Regulations

California Air Resources Board (CARB), 2020 Mobile Source Strategy

In September 2021, CARB published the 2020 Mobile Source Strategy (CARB, 2021). The 2020 Strategy is a framework that identifies actions needed to meet the State's goals for the reduction of emissions of criteria pollutants, GHGs, and toxic air contaminants from mobile sources. The 2020 Mobile Source Strategy uses the same targets for reducing VMT as the 2016 Mobile Source Strategy and 2017 Climate Change Scoping Plan, which aim to reduce light-duty vehicle VMT by 15 percent by 2050 compared to business as usual. The 2020 Mobile Source Strategy identifies strategies that CARB can take to assist in achieving additional reductions and support implementation of regional SCSs. The 2020 Mobile Source Strategy identifies eight strategy areas for reducing VMT and are outlined in CARB's SB 375 Progress Report. The strategy areas are:

1. Increase Transportation Choices and Improve Access
2. Authorize and Implement Equitable Pricing of Transportation
3. Align State Funding Programs to Reduce Vehicle Travel and Achieve the State's Greenhouse Gas Emissions Reduction Goals
4. Shape the Deployment of New Mobility Options in Ways That Reduce VMT
5. Better Align Land Use Planning with the Scoping Plan's Goals
6. Accelerate Infill Housing Production
7. Support Local and Regional Partners to Implement VMT Reduction Measures
8. Elevate the State of Science to Inform the Development and Implementation of Sustainable Community and Transportation Policies

Senate Bill 743

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

Pursuant to SB 743, the Natural Resources Agency adopted revisions to the CEQA Guidelines to implement SB 743 on December 28, 2018. The revised CEQA Guidelines establish new criteria for determining the significance of transportation impacts. Under the new Guidelines, VMT-related metric(s) that evaluate the significance of transportation-related impacts under CEQA for land use are required beginning on July 1, 2020. The legislation does not preclude the application of local general plan policies, zoning codes, conditions of approval, or any other planning requirements that require evaluation of LOS, but these metrics may no longer constitute the basis for determining transportation impacts under the CEQA.

Regional Regulations

2018 Regional Transportation Plan for Shasta County

Shasta Regional Transportation Agency (SRTA) is the federally-designated metropolitan planning organization (MPO) and state-designated regional transportation planning agency (RTPA) for Shasta County. SRTA is required to prepare and adopt a comprehensive regional transportation plan (RTP) covering a minimum 20-year planning horizon. The RTP for Shasta County is updated every four years.

SRTA prepared the 2018 RTP/SCS as required by Code of Federal Regulations (CFR) Title 450.300, Subpart C and California Government Code Section 65080 et seq. The RTP is a comprehensive plan that addresses all modes of transportation used by people and for goods and freight movement (i.e., streets/roads, public transit, pedestrian and bicycle facilities, aviation, and rail) in the Shasta Region (SRTA 2018). The 2018 RTP includes the following goals:

- Goal 1: Optimize the use of existing interregional and regionally significant roadways to prolong functionality and maximize return-on-investment.
- Goal 2: Strategically increase capacity on interregional and regionally significant roadways to keep people and freight moving effectively and efficiently.
- Goal 3: Provide an integrated, context-appropriate range of practical transportation choices.
- Goal 4: Create people-centered communities that support public safety, health, and well-being.
- Goal 5: Strengthen regional economic competitiveness for long-term prosperity.
- Goal 6: Promote public access, awareness, and action in planning and decision-making processes.
- Goal 7: Practice and promote environmental and natural resource stewardship.

The RTP must be fiscally constrained, meaning that the projects and programs identified in the RTP and subjected to environmental review must be consistent with reasonably anticipated revenue over the 20-year planning horizon of the RTP. The SCS for reducing per capita GHG emissions must also be fiscally constrained.

The 2018 RTP includes an updated SCS as required by the Sustainable Communities and Climate Protection Act of 2008 (SB 375), which demonstrates how the region will meet the GHG emissions reduction targets

established by CARB. CARB established emission reduction targets for California's eighteen MPO regions for the year 2020 and 2035. Shasta County was assigned a 0% per capita change when compared to the 2005 baseline year, and the 2018 RTP/SCS reflects this target. The 2022 update to the RTP/SCS is currently underway.

On March 28, 2018, CARB adopted a target for the Shasta region of reducing per capita GHG emissions from passenger vehicles by 4% by the year 2035, when compared to a baseline year of 2005. The 2022 RTP/SCS update will be based on this target. The GHG reduction targets are periodically reviewed and updated by CARB based on progress toward meeting the targets and best available information. In preparation for the 2022 update, SRTA prepared a report entitled "Ways and Means – a Four-Year Progress Report on Mobility in the Shasta Region" that identifies progress toward short-term (2018-2022) goals identified in the 2018 RTP, and new short-term goals being considered for the 2022 RTP (SRTA 2021). One strategy that has been developed in other communities that will be considered for inclusion in the 2022 RTP is establishing a VMT mitigation bank from which developers may purchase credits to mitigate for automobile traffic generated by their projects.

Local Regulations

2000-2020 Redding General Plan

The following policies are included in the existing General Plan regarding transportation. The numbering is from the existing General Plan and therefore may not be consecutive.

Air Quality Element

- Goal 1: Effective communication, cooperation, and coordination in developing and implementing community and regional air quality programs.
    - Policy 9 Transit Planning: The City should consult with transit providers to determine project impacts on long-range transit plans and ensure that impacts are mitigated.
    - Policy 10 Consolidation of Transit Services: The City should continue to support the upgrading and consolidation of transit services within the metropolitan area to maximize the efficiency of transit services while minimizing the costs of transit services. This policy would also apply to small transit providers serving special groups like seniors. Consolidating these services can increase ridership per vehicle and reduce miles traveled.
    - Policy 11 Transit and Affordable Housing: The City should work with the Housing Authority, transit providers, and developers to accommodate the construction of low-income housing developments that use transit-oriented and pedestrian-oriented design principles.
    - Policy 13 New Transportation Technology: The City should anticipate new technology in transportation so that opportunities are not foreclosed by relying on old technology.

- Policy 14 Trip-Reduction Programs: The City will, as much as possible, take the lead in implementing innovative employer-based, trip reduction programs by ensuring that employment contracts negotiated with unions are flexible and allow workers to participate in programs that reduce commute trips.
- Policy 16 Teleconferencing and Telework Centers: The City should support the development of a teleconference center for the community and small telecommunication work centers in new development. This can be accomplished by working with the telephone company and other interested public and private agencies, developers, and hotel operators in developing a multi-user teleconferencing center and small telework centers.

- Goal 2: Reduce motor vehicle trips and vehicle miles traveled and increase average vehicle ridership.
  - Policy 17 Transit and Pedestrian-Oriented Design Guidelines: The City shall make air quality and mobility prime considerations when reviewing any proposed change to the land-use pattern. Such consideration shall include, as much as possible, increased transit and pedestrian mobility. This step shall be part of the CEQA process and apply reasonable Best Available Mitigation Measures (BAMM) to projects that exceed the significance thresholds promulgated by the Air Quality Management District.
  - Policy 18 High Density and Transit: The City shall, as much as possible, continue to plan high-density development in areas that can be fitted with a transit system.
  - Policy 19 Mixed Use—Bicyclists and Pedestrians: The City shall continue to encourage mixed-use developments near employment centers that provide commercial services such as day-care centers, restaurants, banks, and stores.
  - Policy 20 Funding for Pedestrian and Bicyclist Mobility: The City should provide funding opportunities and options for the development of pedestrian and bicyclist corridor construction.
  - Policy 21 Parking and Multi-modal Transfer Sites: The City will work with the Redding Area Bus Authority in planning multi-modal transfer sites that incorporate auto parking areas, bike parking, transit, pedestrian and bicycle paths, and park and ride pick-up points.
  - Policy 26 Pedestrian, Bicycle, and Transit Funding: The City should ensure that state and federal funds earmarked for bicycle and transit improvements are used for those purposes and vigorously pursue funds for new bicycle and transit improvements.
  - Policy 27 Bus Turnouts and Shelters: As a condition of project approval, the City shall require dedication of land for bus turnouts and shelters at sites deemed appropriate and necessary.

- Policy 28 Bikeway and Pedestrian Plan: The City shall ensure that the Regional Bikeway Plan and the City's Comprehensive Bikeway Plan include a comprehensive system of bikeways and pedestrian paths, which is planned and constructed in accordance with the adopted plan, based on analysis of existing and future use by the area to be served.

Public Facilities and Services Element

- Goal PF11: Maintain, and expand when necessary, a street system that allows all users to travel smoothly and safety.
  - Policy PF11A: Establish the following thresholds for streets and intersections:
    - Maintain a Level of Service "C" on all City roadways and intersections, except at those locations identified within the Transportation Element, where a LOS "D" is appropriate.
    - Major arterials and intersections should be programmed for ultimate lane improvements five years in advance of projections showing LOS declines below adopted standards.
  - Policy PF11B: Establish a program and funding mechanism to complete portions of arterials that were not constructed to ultimate lane widths in conjunction with adjacent development and now create irregular links or capacity constraints within the system.
  - Policy PF11C: Reconstruct existing streets as appropriate to comply with current design standards, when funding becomes available. Such improvements may include, but are not limited to: paving, curbs, gutters, sidewalks, signage, landscaping, lighting, raised medians, bikeways and bus pullouts.
  - Policy PF11D: Establish a program to conduct periodic street maintenance activities such as slurry seals, overlays, and pavement reconstruction to optimize public expenditures and level of service.
  - Policy PF11E: Develop a program to establish street "plan lines" for future street extensions noted in the Transportation Element.
- Goal PF13: Provide an efficient and reliable public transit system that serves all sectors of the community.
  - Policy PF13A: Establish the following threshold for transit-related facilities:
  - Work to balance required fare box ratios with the desire to reduce headways on principal routes to one-half hour to encourage ridership.
  - Policy PF13B: Complete all planned phases of the City’s central intermodal transfer facility. Encourage relocation of the existing Greyhound Terminal to the RABA site.

- Policy PF13C: Establish secondary transfer facilities at strategic locations throughout the City.
- Policy PF13D: Pursue the establishment of Park-n-Ride facilities as appropriate throughout the community. These activities may include delineation of such facilities within underutilized parking lots.
- Policy PF13E: Consider utilizing impact fees to finance transit facilities and services.

Transportation Element

- Policy T1A: Ensure that multimodal infrastructure improves transportation choices for pedestrians, bicyclists, motorists, and public transportation riders of all ages and abilities and that all users are considered and included in the planning, design, approval, construction, and operation of new streets, and the alteration and maintenance phases of existing streets by:
  - Including infrastructure that promotes a safe means of travel for all users along the right of way, such as sidewalks, shared-use paths, bicycle lanes, and paved shoulders.
  - Provide pedestrian and bike connections from developments to adjacent main streets, open space areas, parks, transit stops, schools, commercial and employment centers, and other activity centers as opportunities arise.
  - Designing new development to incorporate street connectivity for all users. Including new or alteration of existing infrastructure that facilitates safe crossing of the right-of-way for all users, such as: accessible curb ramps, high-visibility crosswalks, pedestrian refuge islands, smaller curb radii, corner bulbouts, pedestrian signals, and bicycle detection at traffic signals where warranted.
  - Incorporating street design features and techniques that promote safe and comfortable travel along streets by pedestrians, bicyclists, and public transportation riders. Examples include: constructing traffic-calming mechanisms in neighborhoods; providing pedestrian refuge medians on busy streets; reducing the number of motor vehicle lanes and/or widths where appropriate; providing transit turnouts; and constructing physical buffers and separations between vehicular traffic and other users.
  - Providing features that improve the comfort, convenience, and safety of users such as pedestrian-oriented/wayfinding signs, pedestrian-scale lighting, benches and other street furniture, bicycle parking facilities, comfortable and attractive public transportation stops and facilities, street trees, landscape, and planting strips.
- Policy T2A: Identify and prioritize physical improvements that would make bicycle and pedestrian travel safer along current key bicycling and walking routes. Establish an implementation strategy to construct needed improvements. Undertake improvements as part of street projects where feasible.

- Policy T2B: Identify intersections and other locations where collisions have occurred or that present safety challenges for pedestrians, bicyclists, or other users, including, but not limited to, intersections within one mile of schools; consider gathering additional data through methods such as walkability/bikeability audits.
- Policy T2C: Ensure that the transportation capital improvement program and other budgetary tools include funding for Complete Streets infrastructure to the fullest feasible extent. Utilize grant funds and other funding sources to augment City resources. Undertake street modifications with existing capital projects such as overlays, sidewalk repair, ADA curb ramps, and similar projects to reduce costs while providing multimodal accessibility.
- Policy T3A: Review the City's construction standards for streets, intersections, pedestrian facilities, bicycle facilities, and transit facilities and revise as necessary to incorporate Complete Streets standards that support all users.
- Policy T3B: Consider establishing Multimodal Level of Service Criteria, including pedestrians and cyclists to guide development of the street network.
- Policy T3C: Collaborate with the Redding Area Bus Authority (RABA) to incorporate infrastructure to assist users in employing multiple means of transportation in a single trip in order to increase transportation access and flexibility. Examples include, but are not limited to, provisions for bicycle access on public transportation, secure bicycle racks at transit stops, and public transportation access to trails and recreational locations.
- Policy T3D: Consider development of a Complete Streets Design Manual that can serve as a guide for public and private development projects that propose new streets or modifications of existing streets.
- Policy T3E: Encourage new development in close proximity to existing employment, housing, schools, commercial centers, and other services and amenities.
- Policy T4A: Undertake targeted outreach and public participation in community decisions concerning street design and use.
- Policy T4B: In collaboration with Shasta County, City of Anderson, City of Shasta Lake, and the Regional Transportation Planning Agency, integrate bicycle, pedestrian, and public transportation facility planning into regional and local transportation planning programs to encourage connectivity between jurisdictions. Encourage coordination among these agencies to develop joint prioritization, capital planning and programming, and implementation of street improvement projects and programs.
- Policy T5A: Establish the following peak-hour LOS standards for transportation planning and project review. They reflect the special circumstances of various areas of the community, as depicted in Figure 2-1 (of the 2000 General Plan):
    - Use LOS "C"—"acceptable delays"—for most arterial streets and their intersections.

  - Use LOS "D"—"tolerable delays"—for the Downtown area where vitality, activity, and pedestrian and transit use are primary goals.
  - Use LOS "D" —"tolerable delays"—for streets within the state highway system and interchanges.
  - Use LOS "D"—"tolerable delays"—for river-crossing street corridors whose capacity is affected by adjacent intersections.

- Policy T5B: Require development projects to construct both on- and off-site improvements as necessary to mitigate the effects of increased traffic generated by the project and maintain peak-hour LOS standards established by Policy T1A. The traffic analysis used to establish mitigating measures shall be based on the City's Traffic Model or other City-approved method. Improvements may be deferred by the City upon approval of a Deferred Improvement Plan which identifies improvements needed, costs, funding sources, and other pertinent data required by the City.
- Policy T5C: Obtain needed street right-of-way dedications with ministerial projects and with the approval of subdivisions, use permits, and other discretionary actions.
- Policy T5D: Encourage employers to provide incentives for employees utilizing alternatives to the single occupant automobile, such as carpools, van pools, buses, bicycling, and walking.
- Policy T5E: Encourage employers, including government agencies, to allow telecommuting and flex time and to promote staggered shifts or base work hours that do not coincide with peak-period traffic to reduce peak-hour trips.
- Policy T5F: Route through truck traffic around existing and future residential neighborhoods and incompatible commercial areas to the extent feasible.
- Policy T5G: Continue to utilize signage and enforcement to clearly demonstrate the City's intent to reduce truck traffic and parking in residential districts.
- Policy T6A: Retain alleys in the Downtown area to provide pedestrian circulation and convenient service access to local businesses.
- Policy T6B: Establish motorized and/or non-motorized transportation linkages to connect Downtown Redding to the Park Marina, Turtle Bay, and Civic Center areas; augment the transit system to establish frequent and convenient access to these destination areas.
- Policy T7A: Establish a system of street cross-sections that will:
  - Accommodate all improvements necessary to handle forecasted volumes at adopted LOS standards.
  - Accommodate bicycles and transit facilities.
  - Attain the design objectives for streets as addressed in the Community Development and Design Element.

- Policy T7B: Require streets to be dedicated and improved in accordance with adopted street standards; allow modifications to standard street sections when approved by the Planning Commission and City Engineer.
- Policy T7C: Maximize intersection and driveway spacing on arterial and collector streets. Require shared/common driveways wherever feasible.
- Policy T7D: Provide right-turn lanes for arterial-to-arterial and arterial-to-collector intersections wherever feasible.
- Policy T7E: Pursue financing in a timely manner for all components of the transportation system to achieve and maintain adopted level of service standards.
- Policy T7F. Assess fees on new development sufficient to cover the fair share portion of that development's impacts on the local and regional transportation system. Exceptions may be when new development generates significant public benefits (e.g., low-income housing, primary-wage-earner employment), and alternative sources of funding for the improvements can be obtained to offset foregone revenues.
- Policy T9A: Develop neighborhood protection plans when traffic studies or monitoring confirm excessive traffic volumes, substantial through traffic, speeding, or accidents in specific residential areas.
- Policy T9B: Emphasize the use of landscape and other visual deterrents to through traffic; install physical measures only as a last resort.
- Policy T9C: Establish street design standards and review criteria intended to avoid the creation of local streets that will encourage excessive speed and/or which will ultimately function as collectors. Factors that may contribute to a local street functioning as a collector include: < Excessive length (typically greater than one-half mile).
    - Excessive width.
    - The lack of other streets which may be used to convey traffic to nearby arterials.
- Policy T9D: Encourage new neighborhoods to incorporate detached sidewalks and to establish landscape "parkways" between the curb and sidewalk. Continuous and consistent tree-planting to form canopy closure is encouraged.
- Policy T9E: Route through traffic around the perimeters of neighborhoods where possible.
- Policy T10A: Provide pedestrian-oriented features, such as benches, enhanced landscape, and trash receptacles, in commercial areas, particularly in the Downtown and Park Marina areas.
- Policy T12A: Develop and maintain a Comprehensive Bikeway Plan geared to establishing an integrated bicycle system.
- Policy T12B: Incorporate facilities suitable for bicycle use in the design of interchanges, intersections, and other street-improvement/maintenance projects.

- Policy T12C: Make improvements to streets, signs, and traffic signals as needed to improve bicycle travel.
- Policy T12D: Keep bikeways free of overhanging shrubbery, debris, and other obstacles.
- Policy T12E: Install bicycle parking in the Downtown area and at City parks, civic buildings, and other community centers.
- Policy T12F: Support the efforts of the Redding Area Bus Authority (RABA) to provide bicycle racks on all buses within the system.
- Policy T12G: Require new development to provide bicycle facilities or pay in-lieu fees based on the fair share of that development's impacts on the bikeway system and needs identified on the Comprehensive Bikeway Plan.
- Policy T13A: Support the continuation and expansion of private commercial bus operations to provide additional regional transit opportunities for residents.
- Policy T13B: Work with the Redding Area Bus Authority (RABA) on an ongoing basis to plan and implement additional transit services that are timely, cost-effective, responsive to growth patterns, and meet the needs of existing and future transit demand.
- Policy T13C: Provide bus pull-outs along arterial streets at approximately ¼-mile intervals or as indicated in the Shasta County Transit Development Plan. Determine the precise locations during development plan review or at the time of major street improvement or reconstruction.
- Policy T13D: Require development to install passenger amenities at designated bus stops when identified as a mitigating measure.
- Policy T13E: Provide attractive, well-lighted, comfortable, and protected waiting areas for bus passengers.
- Policy T13F: Promote coordination of transit and air transportation services to enhance the transportation options available for residents and visitors to the Redding community.
- Policy T14A: Continue to plan and develop the Redding Municipal Airport to maximize its contributions to business efficiency, economic development, and recreational opportunities within the region.
- Policy T14B: Encourage the establishment of additional commercial airline providers at the Redding Municipal Airport to provide the widest range of aviation travel choices to residents and businesses within the region.
- Policy T14C: Support Benton Airpark as a public-use, general aviation airport and commercial reliever facility for the Redding Municipal Airport.
- Policy T14D: Protect existing and planned local air transportation facilities from encroachment by potentially incompatible land uses and require developers to file an avigation easement with the

City if a proposed development or expansion of an existing use is located in the area subject to the overlay district.

- Policy T15A: Support efforts to establish convenient rail transit service between Redding and the Sacramento area.
- Policy T15B: Encourage the Union Pacific Railroad (UPRR) and Amtrak to increase passenger service by expanding rail schedules to include a greater number of stops and range of connection times and by providing safe and comfortable station facilities.
- Policy T15C: Protect existing rail alignments and facilities through zoning from encroachment by potentially incompatible land uses.
- Policy T15D: Work with UPRR to identify any surplus right of-way that may be suitable for parking or other facilities associated with a future light rail system.

Traffic Impact Fee

The City of Redding adopted the current Citywide Transportation Development Impact Fee Program (TIF) as part of the comprehensive fee study in 2000 (Redding 2018a). The Development Impact Fee program is contained in Section 16.20.160, Citywide transportation development impact fee, of the Redding Municipal Code. The Citywide traffic impact fees are calculated based on the development type and expected trips derived from the Institute of Transportation Engineer's Trip Generation Manual (Redding 2022a). The City also implements traffic impact fees for development in two areas of the City including Dana Drive (16.20.170) and the North Redding Traffic Benefit District (NRTBD) (16.20.180). Traffic impact fees for development within the Downtown Specific Plan area are calculated separately to reflect lower trip-generation rates and shorter trip lengths (Redding 2017). These fees where last updated in July 2022 and are shown in Table 5.16-1, *Redding Transportation Impact Fees*.

TABLE 5.16-1 REDDING TRANSPORTATION IMPACT FEES

Fee Type	Fee per unit (July 2022)
City-wide Traffic Impact Fees[1]	
Single Family Detached Housing	$7,036
Low-Rise Multifamily Housing	$3,870
General Office Building	$7,880
Shopping Center	$8,077
General Light Industrial	$5,770
Impact Fee within Downtown Specific Plan[1]	
Single Family Detached Housing	$4,925
Low-Rise Multifamily Housing	$2,709
General Light Industrial	$4,039
North Redding Traffic Benefit District Fees[2]	
Single family (per DU)	$5,516

Source: Redding 2022a; 2022b

[1]Note that this table does not list all Citywide transportation impact fees levied by the City. See the City's Citywide Transportation Impact Fee schedule for the complete list of fees (Redding 2022a).
[2] Development in the NRTBD is levied a combination of the NRTBD fees and the Citywide TIF. The City grants partial credits against the Citywide fee program to avoid double charging development within the District.

Redding Active Transportation Plan (ATP)

The purpose of the Redding ATP foundation is to establish a safe, efficient, comfortable, and connected active transportation network (i.e., pedestrian and bicycle networks/facilities) that is not only used, but intrinsic to the lifestyle of Redding residents and visitors. This plan is an update to the Bikeway Action Plan 2010-2015 and builds on local planning efforts to create safe and vibrant active transportation environments, as documented in the Redding Pedestrian Safety Assessment, Complete Streets Policy, the Downtown Redding Community Based Transportation Plan, the Draft Downtown Redding Specific Plan Update, and the Parks, Trails, and Open Space Master Plan (Redding 2018b). The ATP covers the City's existing transportation network in addition to goals and actions, planned networks, and implementation strategies.

Redding Municipal Code

Title 11, Vehicles and Traffic, of the Redding Municipal Code regulates traffic signs and signals; traffic on public and private roads; parking restrictions; turning movement restrictions; allowable speed limit under different circumstances; crosswalks and bicycle lanes; as well as many other chapters that deal with traffic restrictions.

Chapter 11.40, Vehicle Congestion Management, of the Redding Municipal Code was adopted to meet the trip reduction and travel demand management ordinance requirements of the countywide Congestion management Program as adopted by the Shasta County Regional Transportation Planning Agency. This

regulation applies to any significant trip generator as defined in Shasta County Air Quality Management District (AQMD) Rule 3:24 and the definitions of Section 11.40.020 of the Code.

Complete Streets Policy

In August of 2012, Redding adopted amendments to the Transportation Element of the General Plan to comply with the Complete Streets Act. Under this policy, the City in its review of proposed development projects, will ensure that the intent of this Complete Streets policy is implemented by ensuring that the design of the development includes streets that will accommodate all multimodal users of the facility in a safe and efficient manner and that appropriate street, pedestrian, and bicycle connections from developments to adjacent main streets, open-space areas, parks, transit stops, schools, employment and commercial centers, and other activity centers are provided. This policy also directs the public works director to establish a program to identify critical pedestrian- and bicycle-route gaps in the transportation network for all roadway users, which categorizes and prioritizes necessary improvements to correct identified deficiencies through street-maintenance programs as funding allows (Redding 2012).

Redding Area Bus Authority Short Range Transit Plan

The Redding Area Bus Authority (RABA) last updated its Short-Range Transit Development Plan (SRTP) in 2014. The primary purpose of the SRTP is to guide the development of fixed and demand response transit for residents, employees and visitors in the RABA service area over a five year period. The 2014 SRTP discusses the RABA's existing routes, proposed routes, expenses and funding needs, and trends in ridership.

Redding Local Hazard Mitigation Plan

Under the Federal Disaster Act of 2000, jurisdictions are required to prepare Local Hazard Mitigation Plans (LHMPs) that are subject to state review. The City of Redding LHMP assesses hazard vulnerabilities and identifies mitigation actions that the City will pursue in order to reduce the level of injury, property damage, and community disruption that might otherwise result from such events. The actions address hazards, as well as specific activities for, Wildland Fire, Flood, Hazardous Material, Severe Winter Weather, Earthquakes, Utility Disruption, Aviation Disaster, Chemical, Biological, Radiological, Nuclear, Explosives (CBRNE), Dam Overflow or Failure, and Volcanic issues. The most recent update to the City of Redding Local Hazard Mitigation Plan was adopted in 2021 (City of Redding 2023).

Redding Local Road Safety Plan

The Local Road Safety Plan (LRSP) is a requirement for Cycle 11 of the Highway Safety Improvement Program. The LRSP grant application included a citywide analysis of the roadway system in Redding comprising of the current collisions patterns and high-risk roadway characteristics (systemic analysis). The planning process for the document determined priority locations for safety improvements. The document also identifies potential funding opportunities that would help to implement the plan.

5.16.1.2 EXISTING CONDITIONS

Traffic

Daily traffic volumes on key motor vehicle routes within Redding are summarized on Table 5.16-2, *Average Daily Traffic in Redding*. The primary regional motor vehicle facility is Interstate 5 (I-5) freeway that carries roughly 69,000 daily vehicles near Cypress Street in Redding. Cypress Street carries over 30,000 daily vehicles across the Sacramento River east of downtown, while many of Redding's key streets carry between 10,000 to 18,000 daily vehicles. Streets with one lane per direction can typically accommodate roughly 20,000 daily vehicles, while streets with two lanes per direction can accommodate over 30,000 daily vehicles, provided that left-turn pockets are provided where appropriate.

TABLE 5.16-2 AVERAGE DAILY TRAFFIC IN REDDING

Street / Route	Location	Avg Daily Traffic		
		Baseline	2045	Percent Change
Interstate 5 (I-5)	N of Twin View Blvd	39,500	51,100	29.37%
Interstate 5 (I-5)	N of SR-299 / S of Twin View Blvd	46,500	58,100	24.95%
Interstate 5 (I-5)	N of SR-44 / S of SR-299	60,000	75,000	25.00%
Interstate 5 (I-5)	S of SR-44 / N of Cypress Ave	69,000	88,600	28.41%
Interstate 5 (I-5)	S of Cypress Ave / N of Churn Cr Rd	61,000	80,000	31.15%
Interstate 5 (I-5)	S of Churn Creek Rd	58,000	78,200	34.83%
SR-44	E of Butte St / W of I-5	56,000	66,200	18.21%
SR-44	E of I-5 / W of Hilltop Dr	48,000	55,700	16.04%
SR-44	E of Hilltop Dr / W of Victor Ave	37,000	45,900	24.05%
SR-44	E of Victor Ave	35,000	39,100	11.71%
SR-44	Shasta View Dr	23,500	29,500	25.53%
SR-44	Airport Rd	16,600	20,600	24.10%
SR-273	N of Lake Blvd	12,700	14,000	10.24%
SR-273	N of Benton Dr/S of Lake Blvd	20,800	23,500	12.98%
SR-273	S of Market/Pine	16,800	19,100	13.69%
SR-273	S of Buenaventura Ave	19,200	22,500	17.19%
SR-273	S of S. Bonnyview Rd	21,800	25,000	14.68%
SR-299	W of I-5 / E of SR-273	20,300	25,400	25.12%
SR-299	E of I-5 / W of Hawley Rd	21,000	25,500	21.43%
SR-299	E of Hawley Rd/W of Old Oregon Tr.	11,600	14,100	21.55%
SR-299	E of Old Oregon Tr.	9,700	11,000	13.40%
Airport Rd	N of Rancho Rd	12,100	16,400	35.54%
Airport Rd	S of Rancho Rd	9,900	13,800	39.39%
S. Bonnyview Rd	west of I-5 ramps	21,600	26,000	20.37%
S. Bonnyview Rd	east of I-5 ramps	23,700	29,300	23.63%
S. Bonnyview Rd	west of Churn Creek Rd	21,100	25,700	21.80%
Buenaventura Blvd	N of Placer St	9,300	10,500	12.90%
Buenaventura Blvd	S of Placer St	9,400	11,500	22.34%
California St	btw Shasta & Tehama St	6,100	6,700	9.84%
Churn Creek Rd	S of SR-299 ramps	13,100	15,800	20.61%

Street / Route	Location	Avg Daily Traffic		
		Baseline	2045	Percent Change
Churn Creek Rd	N of S Bonnyview	13,000	14,900	14.62%
Churn Creek Rd	E of S Bonnyview	13,400	17,800	32.84%
Cypress Ave	W of Hartnell Ave	27,900	35,900	28.67%
Cypress Ave	E of Hartnell Ave	19,000	22,200	16.84%
Cypress Ave	E of I-5 / W of Hilltop Dr	31,200	36,800	17.95%
Cypress Ave	E of Hilltop Dr / W of Larkspur Ln	21,000	25,100	19.52%
Hartnell Ave	W of Bechelli Ln	12,000	12,700	5.83%
Hartnell Ave	E of Bechelli Ln	13,600	13,800	1.47%
Hartnell Ave	E of Churn Creek Rd	18,400	19,500	5.98%
Hartnell Ave	W of Shasta View Dr	10,000	11,400	14.00%
S. Bonnyview Rd	east of I-5 ramps	23,700	29,300	23.63%
S. Bonnyview Rd	west of Churn Creek Rd	21,100	25,700	21.80%
Buenaventura Blvd	N of Placer St	9,300	10,500	12.90%
Buenaventura Blvd	S of Placer St	9,400	11,500	22.34%
California St	btw Shasta & Tehama St	6,100	6,700	9.84%
Churn Creek Rd	S of SR-299 ramps	13,100	15,800	20.61%
Churn Creek Rd	N of S Bonnyview	13,000	14,900	14.62%
Churn Creek Rd	E of S Bonnyview	13,400	17,800	32.84%
Cypress Ave	W of Hartnell Ave	27,900	35,900	28.67%
Cypress Ave	E of Hartnell Ave	19,000	22,200	16.84%
Cypress Ave	E of I-5 / W of Hilltop Dr	31,200	36,800	17.95%
Cypress Ave	E of Hilltop Dr / W of Larkspur Ln	21,000	25,100	19.52%
Hartnell Ave	W of Bechelli Ln	12,000	12,700	5.83%
Hartnell Ave	E of Bechelli Ln	13,600	13,800	1.47%
Hartnell Ave	E of Churn Creek Rd	18,400	19,500	5.98%
Hartnell Ave	W of Shasta View Dr	10,000	11,400	14.00%
Hartnell Ave	E of Shasta View Dr	5,900	7,100	20.34%
Hawley Rd.	N of SR-299 ramps	6,400	7,800	21.88%
Hilltop Ave	N of Cypress Ave	12,100	13,300	9.92%
Old Oregon Trail	S of SR-299 ramps	7,400	10,100	36.49%
Placer St	E of Buenaventura Blvd	12,500	15,300	22.40%
Placer St	W of Buenaventura Blvd	13,900	14,100	1.44%
Rancho Rd	W of Airport Rd	6,200	9,100	46.77%
Victor Ave	N of Rancho Rd	3,600	5,100	41.67%

Source: 2023-2045 Transportation Element (Appendix 3-1)

Street Classification System

City streets are classified as arterials, collectors and local streets as defined below. In addition, Caltrans facilities within Redding include two additional classifications: freeways and expressways.

Arterial Streets. Arterials provide the principal network for citywide travel by all modes of travel, including walking, bicycling, motor vehicle and transit, and provide regional connections. Most commercial land uses in Redding are accessed directly via arterial streets. Arterial streets in Redding generally have one or two

motor vehicle travel lanes per direction, and sidewalks on both sides. Bicycle facilities on arterial streets should consist of buffered bicycle lanes or separated bikeway facilities wherever feasible, recognizing that this will be difficult to achieve on currently developed roadways without substantial modifications in lane configurations, striping, sidewalk modifications, right-of-way limitations, and/or other improvements. Arterial streets are further subdivided into types of arterials, to reflect the land use and neighborhood context specific to each type. The ultimate, ideal design of these roadways include the following attributes:

- Principal Arterials in Redding will typically provide two to three automobile lanes per direction by 2045, with wide sidewalks and bulbouts at crossings to provide for low-stress pedestrian travel. Protected bikeways should be provided where feasible on principal arterials. Measures to enhance transit service are also encouraged, including queue jump lanes and bus stop amenities. Right-of-ways necessary to accommodate pedestrian, bicycle, and transit services, projected traffic, and emergency access/evacuation needs will generally range from 84 feet to 135 feet.
- Minor Arterials generally will provide one to two automobile lane per direction by 2045, plus a center left-turn lane or median, and wide sidewalks on both sides, and bulbouts at crossings, to allow for low-stress pedestrian travel. Protected bikeways should be provided where feasible on minor arterials. Right-of-ways will generally range from 84 feet to 96 feet.

Sufficient rights-of way for the City's identified principal and minor arterial streets and intersections should be obtained in advance of need where appropriate to accommodate the diverse need of these facilities beyond the needs of 2045. The proposed General Plan Transportation Element encourages certain streets to be constructed to address current needs for ingress/egress during emergencies such as wildfire and flooding events which include additional lanes than needed to accommodate projected 2045 traffic. Figure 5.16-1, *Redding Circulation System*, shows the planned buildout for the City's transportation network.

- Collector Streets. Collectors provide connections for all modes of travel within and between residential areas and activity centers, as well as providing direct access to land uses. Collectors also provide connections between arterial and local streets. Collector streets in Redding have one motor vehicle travel lanes per direction, with sidewalks on both sides at buildout. Protected bikeways or buffered bicycle lanes should be provided wherever feasible on collector street segments. Right-of-ways will generally range from 60 feet to 96 feet.
- Local Streets. Local streets provide direct access to abutting properties by all modes of travel. City streets that are not designated as arterials or collectors are local streets. Bicycle facilities on local streets generally consist of shared travel lanes between motorists and bicyclists. Local streets typically provide sidewalks on both sides, and allow on-street parking. Local streets should be designed to encourage low travel speeds and provide "low-stress" travel routes for bicyclists and pedestrians. Right-of-ways will generally range from 28 feet to 60 feet.
- Freeways. Travelers use freeways for longer trips by motor vehicle, including regional travel as well as crosstown trips within the Redding urban area. Freeways in Redding typically provide 2 to 3 lanes per direction, with grade-separated interchanges. Motor vehicle travel speeds on freeways typically range from 55 to 70 mph.

- **Expressways.** Travelers use expressways for regional trips and longer trips within Redding, primarily via motor vehicle, typically with 2 to 3 motor vehicle lanes per direction. Direct access to adjacent properties from an expressway is typically restricted or not allowed. State Route (SR) 273 is classified as an expressway on segments north and south of downtown Redding. Protected bikeways or multi-use paths should be provided where feasible adjacent to expressway segments. Right-of-ways will generally range from 110 feet to 150 feet.

Bicycle Facilities

The following information about the City's existing bikeway facilities is derived from Appendix A of the Redding Active Transportation Plan.

Overview of Bikeway Classifications

Jurisdictions within California organize bicycle facilities into the following classifications; these serve as a common terminology across the state making it easier to understand the degree to which space on a street or within a general right-of-way is being uniquely designated for people bicycling.

- Class I Bikeway (Bike Path)- Provides a completely separated right-of-way for the exclusive use of people bicycling and walking. The number and frequency of cross streets carrying motorists is minimized to the extent possible.
- Class II Bikeway (Bike Lane)- Provides a striped lane for one-way bicycle travel on a street or highway.
- Class III Bikeway (Bike Route)- Provides for shared use with people walking or motor vehicle traffic.
- Class IV Bikeway (Separated Bikeway)- A bikeway for the exclusive use of people biking that includes separation between the bikeway and the through vehicular traffic. The separation may include, but is not limited to, grade separation, flexible posts, inflexible physical barriers (e.g., concrete median), on- street parking, or a combination of treatments.

Existing Bikeway Network

The existing bikeway network is comprised of a combination of Class I, Class II and Class III bicycling facilities; these are displayed citywide in Figure 5.16-2, *Bicycle Network in Redding*. The Sacramento River Trail is the most extensive Class I facility within the City of Redding providing connectivity east-west along the Sacramento River as well as a few connections north- south across it. It also provides a connection to recreational areas outside and west of the City of Redding. Additional shared use paths are also present in smaller, more isolated locations providing connections from neighborhoods to local retail centers or from one neighborhood to an adjacent neighborhood. For example, the shared use path that runs parallel to Buena Ventura Boulevard.

Class II bicycle facilities (bicycle lanes) have been implemented on portions of key corridors such as Bonnie View Road, Victor Avenue, Cypress Avenue, Pine Street, California Street, Canby Road, and Bechelli Lane. Many of the remaining streets providing consistent east-west and north-south connectivity across the City

are currently Class III bicycle facilities (bicycle route) meaning designated as a bicycle route but a space where people bicycling are sharing the travel lane with motorists.

Bicycle Support Facilities and Amenities

Bicycling support facilities and amenities include bicycle parking, bicycle shops, and repair stations (e.g., a place to put air in a low tire or fix a flat tire). In total there are 66 locations with bicycle racks, as inventoried in the Redding ATP. Many are concentrated in the Downtown area and/or near shopping or commercial centers. At the local farmers market on Saturdays each week, there is also a bicycle valet service that helps encourage people to ride their bikes to/from the market. There are a total of five bicycle shops across the City, which are: The Bike Shop, Sports LTD, Chain Gang, Bikes Etc., Village Cycle, and Cyclopedia. There is one confirmed fix-it repair station within the City.

Pedestrian Facilities

The following information about the City's existing pedestrian facilities is derived from Appendix A of the Redding Active Transportation Plan.

Pedestrian facilities generally include, but are not necessarily limited to, sidewalks, trails, multiuse paths, curb ramps, crosswalks, crossing aids (e.g., pedestrian crosswalk indicators), traffic control devices aimed at facilitating pedestrian crossings (e.g., flashing beacons at crosswalks), grade separated crossings, and other strategies to encourage and improve conditions for walking.

Existing Pedestrian Network

The existing pedestrian network in the City of Redding is made up of shared use paths and sidewalks. The City has strong sidewalk coverage in the Downtown core area, adjacent to and within many of the retail centers, and within most of the residential neighborhoods. Figure 5.16-3, *Pedestrian Facilities in Redding*, illustrates the existing sidewalk coverage and connectivity of the current shared use paths for the City.

There are a number of parks and trails throughout the City that serve as attractive destinations for people walking and can also serve as useful connections to other destinations. The Sacramento River Trail is one example where people may use the trail as a destination in of itself to recreate and they may also use it as a means for reaching another a destination. Other notable pedestrian destinations within the City, beyond the retail and commercial areas, include the Sundial Bridge, Enterprise Community Park, and Turtle Bay Park. These and other potential common destinations for people walking, such as schools.

Transit Facilities

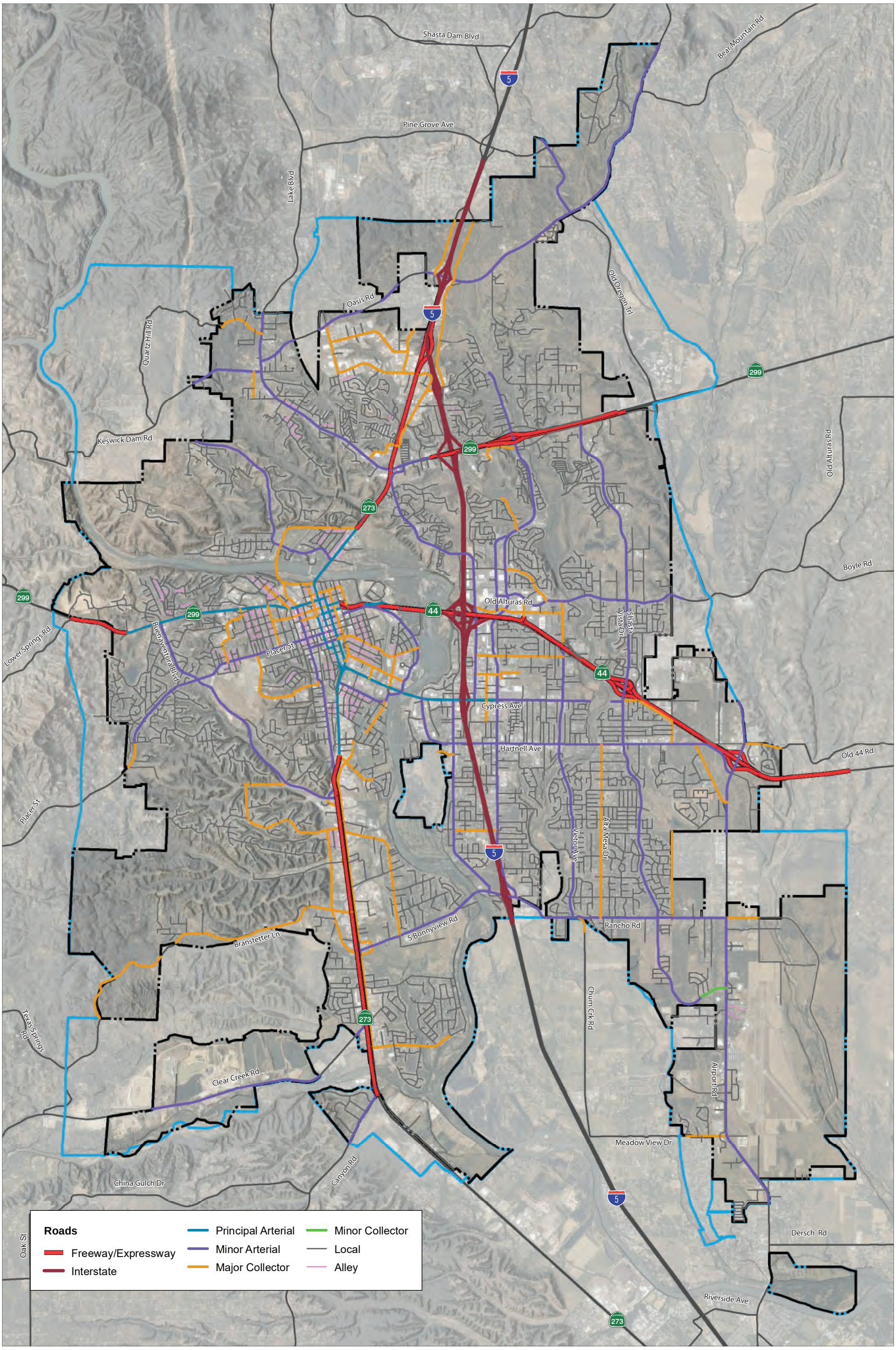
The following information about the City's existing transit facilities is derived from Appendix A of the Redding Active Transportation Plan.

The Redding Area Bus Authority (RABA) provides a fixed route and demand responsive transit services to the City of Redding and the broader urbanized area of Shasta County. The RABA fixed route service consists of eleven local routes and four express and commuter routes. RABA has three transit centers: the Downtown Transit Center, the Masonic Transfer Center, and the Canby Transfer Center. These three transit centers have the highest volume of passenger activities with over 500 boardings and alightings per day allowing riders to transfer to another route or walk to nearby regional destinations. According to the most recent RABA 2014 Short Range Transit Plan (SRTP), ridership of fixed route service has steadily grown serving over 800,000 individual rides for the fiscal year 2012/2013. This represents a 23% increase in riders from the fiscal year 2009/2010 to the fiscal year 2012/2013.

Figure 5.16-4, *Redding Area Bus Authority Routes, Stops, and Service Area*, shows the existing transit service in the City of Redding and SOI. The maps highlight the RABA service routes, bus stop locations, and service area. All local routes operate for approximately 12 hours per day Monday through Friday, with more limited-service hours on Saturday. Bus service is not provided on Sundays. All of the RABA local routes within the City of Redding operate on one-hour headways. The system relies heavily on transfers with most routes stopping at two transfer centers. The RABA 2014 SRTP notes that nearly two-thirds of riders surveyed use more than one bus to complete their one-way trip.

This page intentionally left blank.

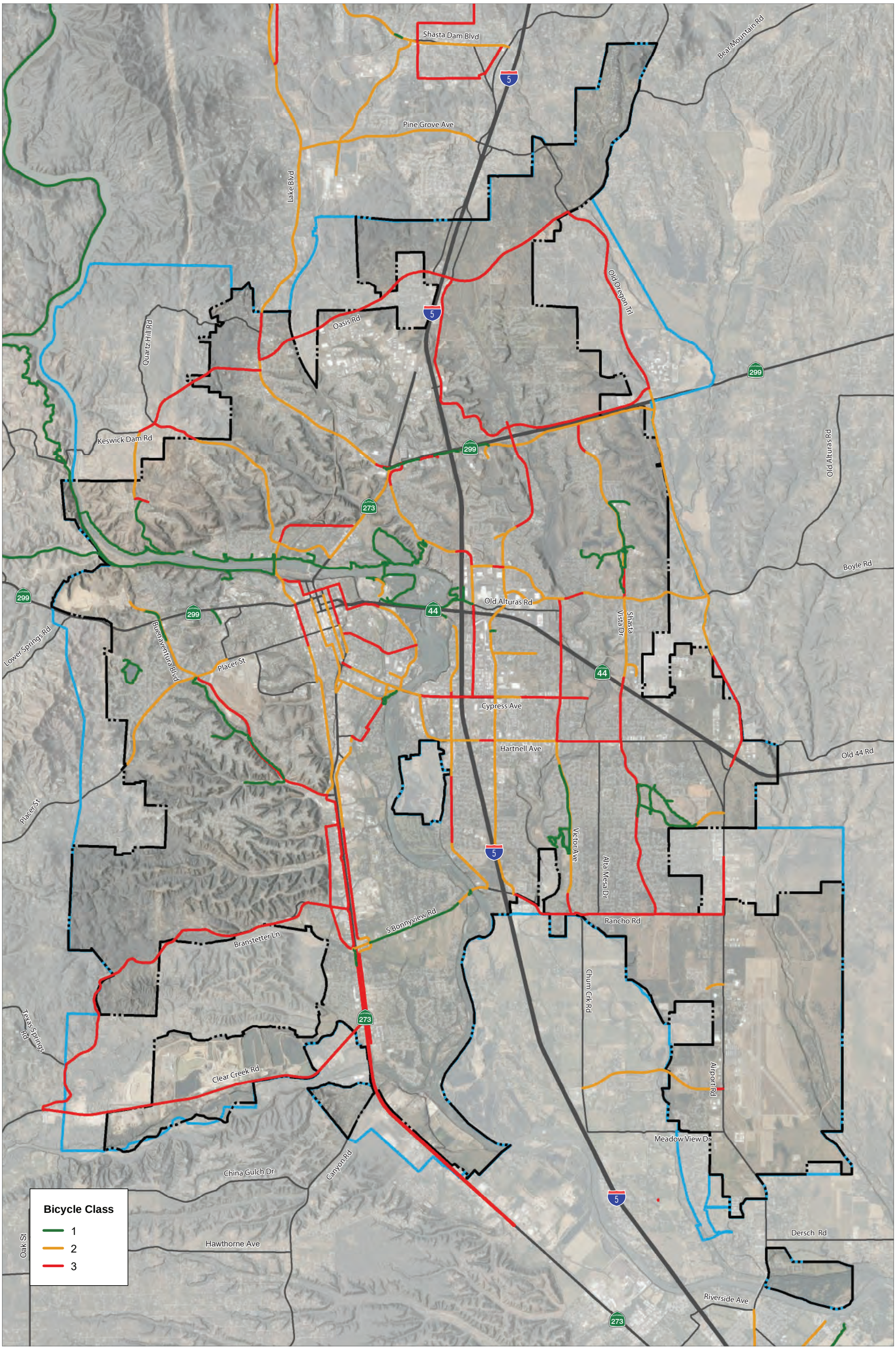
5.16 TRANSPORTATION



Source: Generated using ArcMap, 2023; City of Redding GIS 2017, 2021, 2022, and 2023.

Figure 5.16-1
Redding Circulation System

5.16 TRANSPORTATION



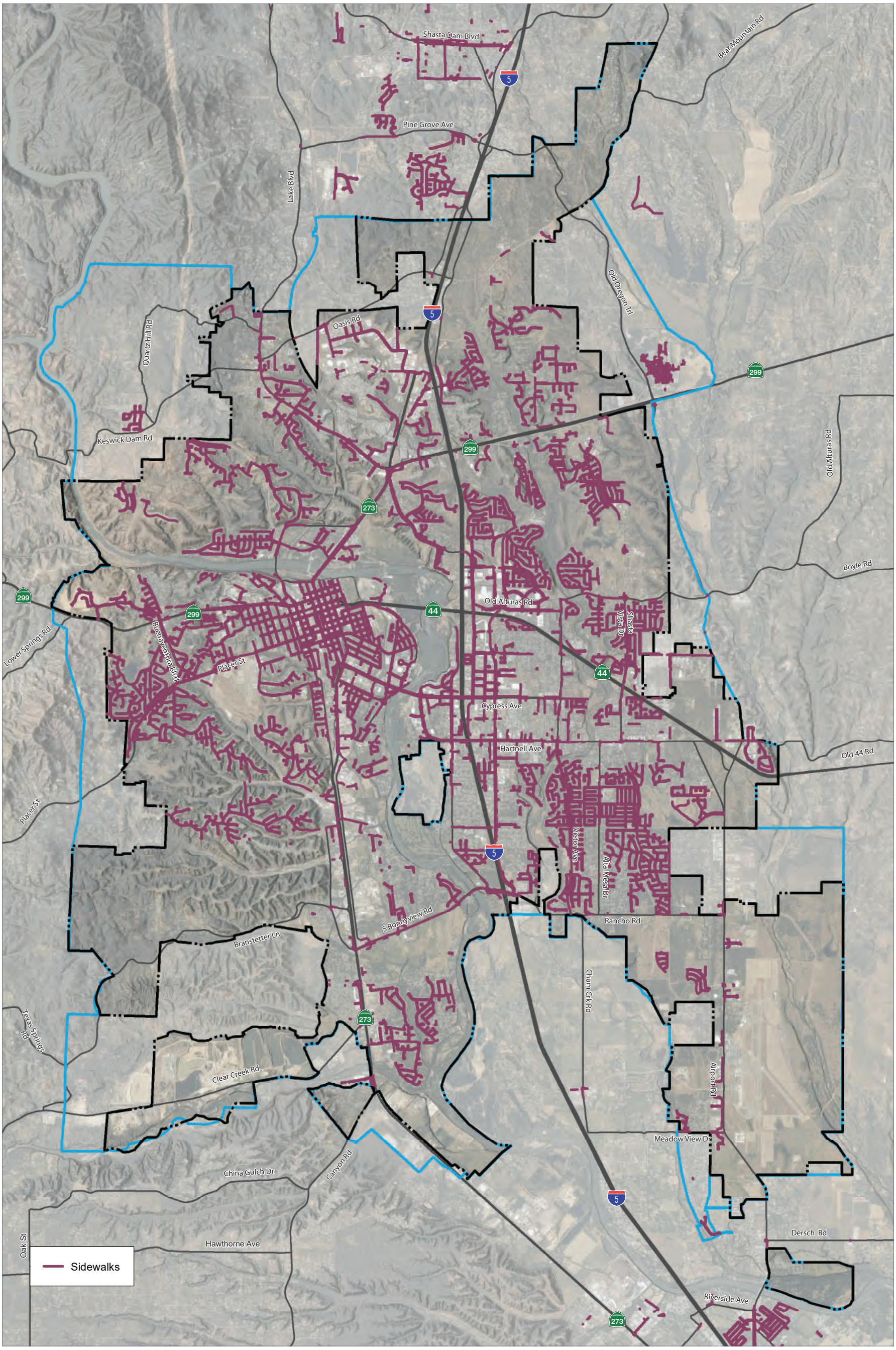
Source: Generated using ArcMap, 2023; City of Redding GIS 2017, 2020.

0 2
Scale (Miles)

Redding City Limit
Redding SOI

Figure 5.16-2
Bicycle Network in Redding

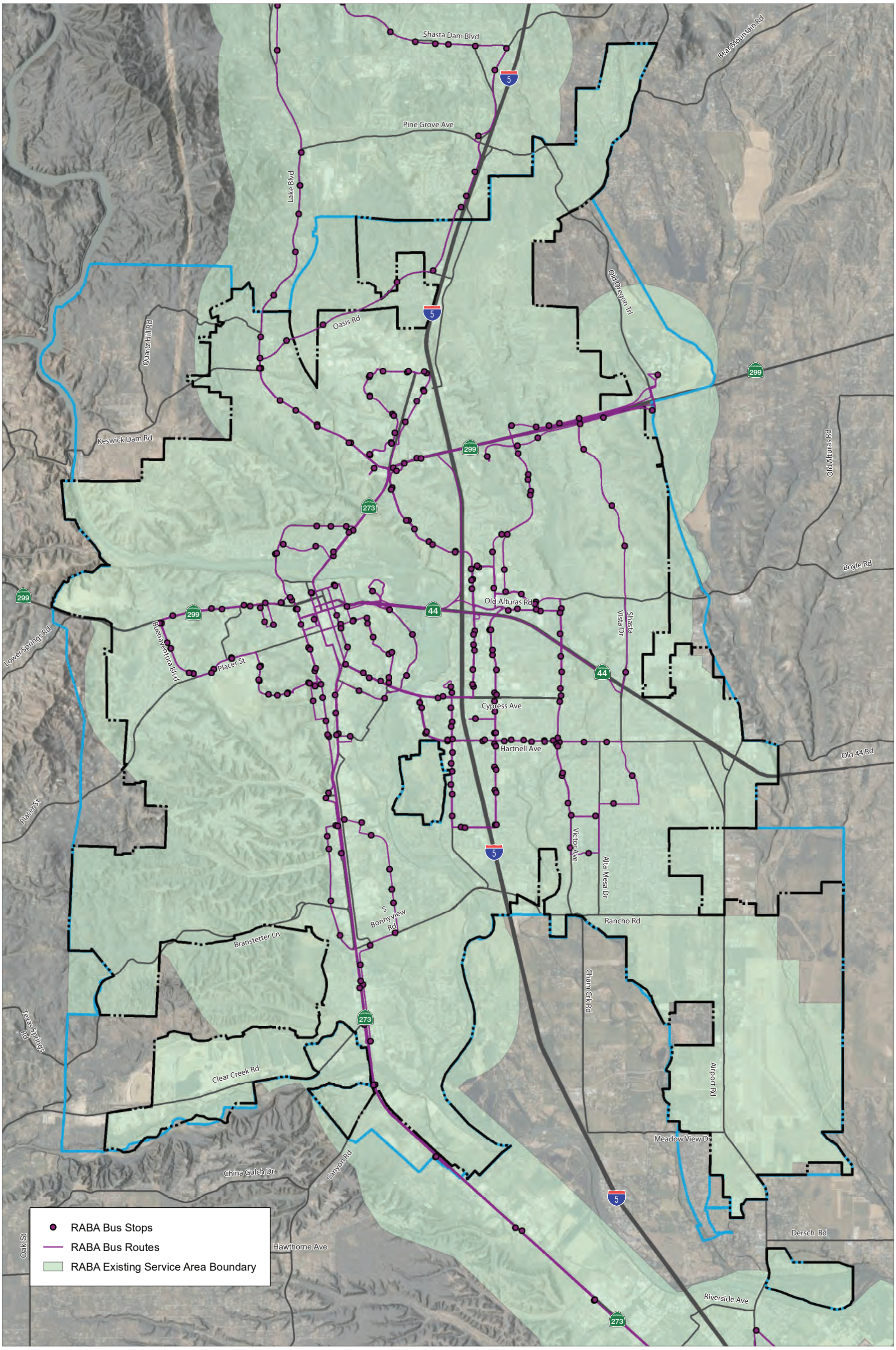
5.16 TRANSPORTATION



Source: Generated using ArcMap, 2023; City of Redding GIS 2017, 2021, and 2022.

Figure 5.16-3
Pedestrian Facilities in Redding

5.16 TRANSPORTATION



Source: Generated using ArcMap, 2023; City of Redding GIS 2017, 2021, and 2022.

Figure 5.16-4
Redding Area Bus Authority Routes, Stops, and Service Area

5.16.2 THRESHOLDS OF SIGNIFICANCE

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

T-1 Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

T-2 Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b).

T-3 Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

T-4 Result in inadequate emergency access.

T-5 In combination with past, present, and reasonably foreseeable projects, result in cumulative impacts with respect to transportation.

5.16.3 PROPOSED GENERAL PLAN POLICIES

The following goals and policies of the 2023-2045 General Plan are relevant to transportation impacts.

Public Facilities and Services Element

- Policy PF1J: Strive to ensure that the considerable public investment made in existing and new utility and street infrastructure is reliable and meets the existing and projected service demands.

Public Safety Element

- Policy PS4G: Consider establishing a program to construct and maintain fire-access roads in ravine areas considered to have a very high fire danger to enhance the ability to suppress wildland fires. These roads need not be surfaced and may also function as part of the City's trail system. Erosion and impacts to native vegetation and natural features should be minimized.
- Policy PS4K: Enforce subdivision regulations that generally limit cul-de-sac lengths to no greater than 600 feet and strive to ensure that sufficient emergency-vehicle turnaround areas are provided.
- Policy PS4L: Apply as appropriate, subdivision regulations requiring each residential development having 50 or more dwelling units and each commercial development employing 150 or more people to have at least two connected points of public access as may be determined necessary by the Fire Marshal.
- Policy PS4M: Seek to construct emergency-vehicle access routes to open-space areas at optimal locations within projects during the development process, as funding or law allows. As funding and physical conditions allow, construct such access routes in existing developments where warranted.

- Policy PS4N: Strive to ensure new subdivisions have adequate fire protection measures such as multi-access for firefighting apparatus, noncombustible building construction, appropriate defensible space, street widths and grade to accommodate emergency vehicles and evacuees simultaneously.
- Policy PS11C: Consider implementing an emergency evacuation plan and consistently educate residents on:
  - Access: Evacuation routes laid out for residents to use in case of emergency.
  - Signage: Signage, wayfinding, and designated evacuation routes.
  - Communication: Timely notices that may arrive through multiple communication avenues.
  - Assistance: Available assistance programs to aid resident evacuation during emergency.

Transportation Element

- Policy T1A: Strive to ensure that where complete streets infrastructure is constructed, it improves transportation choices for pedestrians, bicyclists, motorists, and public transportation riders and that users of all ages and abilities are considered in the planning, design, approval, construction, and operation of new streets, and the alteration and maintenance phases of existing streets by:
  - Including infrastructure that promotes a safe means of travel for all users along the right of way, such as sidewalks, shared-use paths, bicycle lanes (including protected bicycle lanes or buffered bicycle lanes where feasible) or paved shoulders.
  - Providing pedestrian and bike connections from developments to adjacent main streets, open space areas, parks, transit stops, schools, commercial and employment centers, and other activity centers as opportunities arise.
  - Designing new development to incorporate street connectivity for all users.
  - Including new or alteration of existing infrastructure that facilitates safe crossing of the right-of-way for all users, such as: accessible curb ramps, high-visibility crosswalks, pedestrian refuge islands, smaller curb radii, corner bulb-outs, pedestrian signals, and bicycle detection at traffic signals where warranted.
  - Incorporating features that improve the comfort, convenience, and safety of users such as pedestrian-oriented/wayfinding signs, pedestrian-scale lighting, benches and other street furniture, bicycle parking facilities, comfortable and attractive public transportation stops and facilities, street trees, landscape, and planting strips.
- Policy T1B: Seek funding to establish a systematic complete street retrofit program that will effectively alter existing appropriately identified streets into complete streets.
- Policy T1C: Update the Redding Active Transportation Plan every four to seven years to ensure successful implementation of the City's planned bicycle and pedestrian networks by undertaking the following:

- Work to identify and prioritize physical improvements that would make bicycle and pedestrian travel safer along current key bicycling and walking routes.
- Pursue an implementation strategy to construct needed improvements.
- Undertake improvements as part of street projects where reasonable and feasible.

Policy T1D: Consider requiring that development projects dedicate street rights-of-way and construct both on- and off-site improvements as appropriate to provide access and street connectivity for users of all ages and abilities, mitigate the effects of vehicle miles traveled (VMT) attributable to the project, and not degrade peak-hour LOS below the following adopted thresholds nor conflict with multi-modal performance standards. The City Council may, at its sole discretion, determine that the degradation of LOS is appropriate given the extraordinary circumstances of the project being proposed. The traffic analysis used to establish mitigation or improvement measures shall be based on the regional travel demand model or other City-approved methods. At the option of the City and as may be provided by City ordinance, improvements may be deferred by the City upon approval of a Deferred Improvement Plan which identifies improvements needed, costs, funding sources, and other pertinent data required by the City.

- Policy T1E: Strive to complete the planned build-out street network as illustrated on the Circulation Plan map, and ensure that the accompanying design standards, programs, and procedures include complete streets implementation as a main focus by undertaking the following measures.
  - Review as necessary the City's design guidelines and standard cross-sections for streets, intersections (including roundabouts and traffic circles), pedestrian facilities, bicycle facilities, and transit facilities and revise as necessary to be consistent with National Association of City Transportation Officials (NACTO) and its guidelines regarding complete streets.
  - Consider establishing performance measures to evaluate multimodal travel conditions for pedestrians and bicyclists, such as Level of Traffic Stress (LTS) criteria, to guide development of the street network.
  - Collaborate with the Redding Area Bus Authority (RABA) and other service providers to incorporate infrastructure to assist users in employing multiple modes of transportation in a single trip in order to increase transportation access and flexibility. Examples include but are not limited to, provisions for bicycle and wheelchair access on public transportation, secure bicycle racks at transit stops, and public transportation access to trails and recreational locations.
  - Consider the development of a Complete Streets Design Manual that can serve as a guide for public and private development projects that propose new streets or modifications of existing streets.
- Policy T1F: Strive to complete the Planned Pedestrian Improvements identified in the Redding Active Transportation Plan, and support the provision of an attractive, safe, and continuous system of sidewalks and other pedestrian facilities by undertaking the following measures where appropriate:
  - Seek funding for the design and/or, construction, of the sidewalk, path, and crossing improvements identified in the Active Transportation Plan. Focus on securing funds to match federal and State grant program opportunities.

- Where feasible and appropriate, seek to provide pedestrian-oriented features, such as benches, enhanced landscape, and trash receptacles, in commercial areas, including the Downtown and Redding Riverfront Specific Plan areas.
- Require new developments provide sidewalks or other pedestrian-dedicated facilities on both sides of new public streets contained within the development. Exceptions may be appropriate where the topography is difficult, proposed lots are of a rural or semi-rural nature, or where the development plan illustrates that pedestrians will be accommodated by alternative means.
- Work with local organizations and neighborhood groups to develop a plan to determine where curbs, gutters, and sidewalks are needed on unimproved local streets and how to pay for the improvements; establishing sidewalk continuity wherever feasible is a priority.
- Pursue funding for the continued replacement and repair of sidewalks that have deteriorated due to age and tree-root invasion.
- Work to develop and seek funding to implement a program to identify, prioritize, and construct the retrofitting of existing intersections that do not currently have accessibility ramps and accommodations at the street corners.
- Strive to ensure that all new or renovated pedestrian facilities be of a sufficient width to ensure pedestrian comfort and safety and to accommodate the special needs of persons with physical disabilities wherever feasible.

- Policy T1G: Strive to complete the Build-Out Bikeway Network identified in the Redding Active Transportation Plan, and support related measures to make bicycling a safe, accessible, comfortable, and sustainable transportation mode by:
  - Working to secure funding to construct the bikeway network improvements identified in the Active Transportation Plan.
  - Pursuing the installation of protected bicycle lanes (Class IV separated bikeway treatments) where feasible on arterial streets.
  - Seeking to incorporate appropriate bicycle facilities in the design of interchanges, intersections, and other street-improvement/maintenance projects.
  - As funding allows, making improvements to streets, signs, and traffic signals as needed to improve bicycle travel, and keep bikeways free of overhanging shrubbery, debris, and other obstacles.
  - Supporting to the extent possible the efforts of public transit providers including the Redding Area Bus Authority (RABA) to provide bicycle racks on all buses within the system.
  - As appropriate, supporting the requirement that new development provides bicycle facilities or pay in-lieu fees based on the fair share of that development's impacts on the bikeway system and needs identified on the Comprehensive Bikeway Plan.

- Policy T1H: Strive to achieve the level of service described in this Element for motor vehicle traffic on roadway segments and at intersections during weekday peak-hours, except where achieving the LOS standard would conflict with complete streets goals and standards or the City Council determines that extraordinary circumstances exist to require deviation from the LOS standard by requiring new development to provide improvements, pay in-lieu fees and/or pay development impact fees as approved by the City Council and based on the fair share of that development's contribution of improvements needed to achieve the following peak-hour LOS standard/thresholds:

  Level of Service "C" on all City roadways and intersections, except at those specific locations/roadway segments identified within this Element, where a LOS "D" is appropriate including the Downtown Specific Plan area, streets within the state highway system and interchanges and river-crossing street corridors whose capacity is affected by adjacent intersections.

- Policy T2A: Support the provision of a connected network of low-stress walk and bikeways to connect major activity centers, including the provision of appropriate low-stress walk and bikeway access to Downtown Redding and the Redding Transit Center by considering implementation of the measures identified below. Low-stress bikeways should generally consist of separated bikeways (Class IV bikeways), sometimes referred to as "protected bicycle lanes", on arterial or collector streets; bicycle boulevard treatments on local streets; or multi-use paths.

  - Work to identify and prioritize routes for a connected network oflow-stress walk and bikeways, identifying barriers to low-stress travel with plans to address them. and Incorporate maps and plans into future updates of the Redding Active Transportation Plan. Pursue funding to construct the network.
  - Work to identify networks for walking and biking to connect with key travel nodes, and activity centers, including transit nodes and strategic growth areas. Consider accessibility to all neighborhoods and housing, striving to ensure access to a connected network of low-stress walk and bikeways within one-half-mile radius to all residents. Key travel nodes and activity nodes include Downtown Redding, Redding Transit Center, transit nodes (where multiple transit lines intersect), schools, City Hall, County Government Center, Shasta College, Simpson University, major parks and recreation centers, employment centers/business parks, neighborhood commercial nodes and regional commercial centers.
  - As funding permits, develop design standards for the low-stress walk and bikeway network that establishes a "kit of parts" set of standards for the three low-stress facility types: 1) separated bike lanes on arterial and collector streets, 2) neighborhood greenways, and 3) off-street paths and trails. An implementation strategy to construct needed improvements to the network should be established.
  - Work with the Cities of Anderson and Shasta Lake, and Shasta County to identify low-stress walk, bike routes that connect to the downtown core strategic-growth areas of the cities and towns of Shasta County.

- Support to the extent feasible and as funding allows operation of amenities and programming to enable daily transportation by people biking and walking, including bikeshare services, the Shasta Bike Depot at the Redding Transit Center, secure bike parking, short-term bike parking racks, and similar secure bike parking and e-bike charging stations to meet existing and future needs for the encouragement and education of those who travel via walking or biking.
- Work with the local school districts to develop specific transportation plans associated with schools and the surrounding neighborhoods to address conflicts with; traffic, pedestrian movements, safety during school hours, and bicycle facilities to and from schools. This may include a plan to implement slower speed school zones while children are present and flashing beacons to identify when these school zones are in effect.

- Policy T2B: Support provision of continuous greenbelt trails within and between parks, and along the Sacramento River connecting Redding to the City of Shasta Lake, the City of Anderson, and Cottonwood. Efforts may include:
  - Striving to provide trail access to all residents within a one-half mile radius to all residents and connect trails to all parks which should be equipped with safe and secure bike parking and electric charging stations for bikes and vehicles.
  - Striving to connect trails to all schools, parks, and other large recreation destinations such as the Sacramento River Parkway, Downtown, the Civic Auditorium, Waterworks Park, and the YMCA, as well as civic buildings such as the Courthouse, Library, Shasta County government building on Court Street, and City Hall.
- Policy T3A: Support the provision of enhanced transit service that is timely, cost-effective, responsive to growth patterns, and meet the diverse needs of existing and future transit demand. by:
  - Working with the Shasta Regional Transportation Agency (SRTA) and public transit providers including the Redding Area Bus Authority (RABA) on an ongoing basis to plan and implement additional public transit services.
  - Supporting to the extent feasible and as funding allows the continuation and expansion of private commercial or nonprofit bus operations to provide additional regional transit opportunities for residents.
  - Promoting coordination of public transit, intercity rail, bicycle share program, intercity bus, and air transportation services to enhance the transportation options available for residents and visitors to the Redding community.
  - Supporting to the extent feasible and as funding allows provision of intercity bus service.
  - Developing policies and procedures to implement shared mobility devices to help enhance public transit options. These micro-transit shared mobility type devices could include scooters and e-bikes, but may be expanded as technology develops.

- Policy T3B: Provide physical measures to enhance transit service by considering to undertake the following:
  - Require new development to install and maintain passenger amenities at designated bus stops when relevant to accommodating project trips or mitigating VMT as appropriate.
  - Provide bus facilities along arterial streets as indicated in an applicable transit development plan. Determine the precise locations during the development plan review or at the time of major street improvement or reconstruction.
  - Work with RABA to provide safe, attractive, well-lit, comfortable, and protected waiting areas for bus passengers.
- Policy T4A: Support measures that help reduce VMT below regional averages on a "residential per capita" and "per employee" basis by:
  - Encouraging employers, colleges, and schools to provide incentives and facilities (e.g., showers) for employees and students utilizing alternatives to the single-occupant automobile, such as carpools, vanpools, buses, bicycling, and walking.
  - Encouraging employers, including government agencies, to allow telecommuting and flex time and to promote staggered shifts or base work hours that do not coincide with peak-period traffic to reduce peak-hour trips.
- Policy T5A: Support efforts to eliminate traffic fatalities and serious injuries attributable to collisions on City streets by considering the following measures:
  - Develop a "Vision Zero" strategy to reduce traffic fatalities and serious injuries to zero. The aim of "Vision Zero" is to eliminate all traffic fatalities and severe injuries, while increasing safe, healthy, and equitable mobility for all.
  - Implement safety improvements consistent with those recommended by the Redding Local Roadway Safety Plan (LRSP) as funding allows.
  - Monitor collision data and develop countermeasures to address identified collision patterns as feasible.
  - Identify and prioritize intersections and other locations where collisions have occurred or that present safety challenges for pedestrians, bicyclists, or other users, including, but not limited to, intersections within one mile of schools; consider gathering additional data through methods such as walkability/bikeability audits.
  - Restrict speed limits where feasible within the confines of State law, particularly in residential neighborhoods, Downtown, and other areas of the City where pedestrian and bicycle travel are strongly encouraged to reduce the potential for pedestrian injuries and fatalities.

- As funding is identified, implement measures to reduce motor vehicle speeds where applicable. Such measures may include but are not limited to; installation of traffic circles and/or narrower lane widths (10 to 11 feet).
- Consider installing automated speed enforcement of motorized vehicles on high-risk road segments and at high-risk intersections/traffic circles and installing automated traffic cameras on high-risk road segments and at high-risk intersections/traffic circles.

- Policy T5B: Promote safety in neighborhoods by developing the local transportation network in a manner that does not create conflicts between vehicles and residents Efforts may include:
  - Develop and implement as feasible, neighborhood protection plans when traffic studies or monitoring confirm excessive traffic volumes, substantial through traffic, speeding, or vehicle collisions in specific residential areas.
  - Emphasize the use of landscape and other visual cues to slow through traffic; the installation of physical measures such as: delineators, traffic circles, and speed tables should be designed to enhance the visual aspects of the subdivision.
  - Establish street design standards and review criteria that will result in neighborhood streets that discourage cut through traffic and keep travel speeds low. The design standards may consider such things as excessive length and width and lack of connecting streets to adjacent neighborhoods and arterial streets. Encourage new subdivisions to utilize a grid street layout where feasible and to have multiple points of access to enhance access and reduce funneling traffic into one intersection.
  - Strongly encourage new neighborhoods to incorporate detached sidewalks and to establish landscape "parkways" between the curb and sidewalk. Continuous and consistent tree planting to form canopy closure is encouraged.
  - Route through traffic around the perimeters of neighborhoods where possible.
- Policy T6A: Strive to retain alleys in the Downtown area to create shared spaces for bicycling and walking, and convenient service access, to local businesses.
- Policy T6B: Work to identify and seek funding for motorized and low-stress non-motorized transportation linkages to connect Downtown Redding. Destinations outside of Downtown that would require additional connections include Park Marina, Turtle Bay, and Redding Civic Auditorium areas.
- Policy T6C: Any new uses Downtown that would typically require a Traffic Study may be exempted unless it is determined that the proposed development would substantially increase traffic at intersections and roadways within this area of the City. If a traffic study is determined to be required the study should identify measures to maintain high-quality access and mobility in the area with a priority toward active transportation modes. New discretionary land use permit requests within the Downtown area, which generate net new PM peak-hour vehicle trips, should participate in enhancing access and mobility for transit, bicycle, and pedestrian modes. These enhancements may include, but are not limited to:

- Enhancing sidewalks to create a high-quality pedestrian environment, including wider sidewalks and improved crosswalks, native and drought-resistant landscaping, buffers between sidewalks and vehicle travel lanes, enhanced pedestrian lighting, wayfinding signage, shade trees, and canopies, increased availability of benches, provisions for café-style seating, and usage of monument elements and other forms of public art.
- Improving bicycle facilities to include attractive and secure bicycle parking, installation of bike lockers in appropriate locations, and provision of bicycle lanes, bike paths, and wayfinding signage along appropriate roadways.
- Supporting the development of a Downtown Business Improvement District or similar mechanism to help fund ongoing maintenance of the streetscape enhancements.

- Policy T7A: Strive to maintain adequate on-street and public off- street parking areas, including electric vehicle charging stations, to meet ongoing parking demands by considering the following measures:
  - Pursue funding options and strategies for the construction and maintenance of shared parking facilities/structures Downtown.
  - Seek funding to provide electric charging stations at parking lots and rest areas for cars, trucks, and bicycles throughout the City.
  - Encourage and facilitate the provision of electric-vehicle charging facilities in new parking lots and multi-family residential developments.
  - Strive to install secure bicycle parking with electric charging stations and large enough for cargo bikes in the Downtown area and at City parks, civic buildings, and other community centers.
- Policy T7B: Endeavor to ensure that required parking provisions for private development supports efforts to encourage multimodal travel and reduce VMT by:
  - Pursuing maximum and minimum standards for automobile parking spaces in transit corridors and Downtown to promote use of alternate modes of travel as may be appropriate.
  - Pursuing minimum standards for bicycle parking, including both long-term and short-term bicycle parking spaces.
- Policy T7C: Generally, prohibit on-street automobile parking on arterial streets if there is not adequate space for bike lanes and parking lanes outside the Downtown area to reduce congestion and conflicts.
- Policy T7D: Work to ensure the provision of adequate curbside or off-street space where applicable to accommodate passenger pick-up/drop-off activity by transportation network companies (TNC), and delivery services.
- Policy T8A: Work closely with Caltrans and the Shasta Regional Transportation Agency (SRTA) to ensure that State facilities located within the City—including SR 299, SR 44, SR 273, Interstate 5, and intersections/interchanges that involve those facilities—are constructed in a manner consistent with the goals and policies of this element to the extent feasible.

- Policy T9A: Continue to plan and develop the Redding Municipal Airport as addressed in the Economic Development and Public Facilities and Services Elements to maximize its contributions to business efficiency, economic development, and recreational opportunities within the region.
- Policy T9B: Support Benton Airpark as a public-use, general aviation airport and commercial- reliever facility for the Redding Municipal Airport.
- Policy T10A: Encourage the Union Pacific Railroad (UPRR) Amtrak, the State of California, the San Joaquin Joint Powers Authority, and the Capital Corridor Joint Powers Authority to increase passenger service by expanding rail schedules to include a greater number of stops and range of connection times and by providing safe, comfortable and seamless station facilities that connect to the adjacent RABA Downtown Transit Center and the bike share program.
- Policy T10B: Work with UPRR, the State of California, and other stakeholders to identify any surplus right-of-way that may be suitable for parking or other facilities associated with a future light-rail system.
- Policy T10C: Seek the cooperation of UPRR in establishing a rail-side facility for freight-container unloading to augment goods-transportation opportunities.
- Policy 10D: Strive to protect existing rail alignments and facilities through zoning from encroachment by new potentially incompatible land uses to the extent feasible.
- Policy T10E: Support efforts as funding allows to improve safety at locations where rail and other transportation facilities interface.
- Policy T10F: Strive to provide for additional grade-separated railroad crossings at South Bonnyview Road and in the Downtown area.

Community Design and Development Element

- Policy CDD10D: Encourage development in the City to include inviting, attractive, accessible, and walkable urban mixed-use neighborhoods combining residential, commercial, recreational, open space, and employment to maximize the use of underused urban lots.
- Policy CDD10I: Provide safe and comprehensive transportation facilities with appropriate accessibility standards, consistent with approved transit plans and policies. Pursue incorporation of bicycle and pedestrian routes, public transit stops, and bus shelters into the design of new developments and redevelopment of older projects to help residents access services, commerce, employment, education, and recreation consistent with approved transit plans and policies.
- Policy CDD11A: Encourage developers to create new residential developments in infill priority areas that are available to a broad segment of the community The developments should be pedestrian and bicycle friendly, to make efficient use of infrastructure and land available with densities that will help facilitate the provision and use of public transit where it is available.
- Policy CDD17A: Allow a variety of residential street widths and designs to be incorporated into new residential developments based on the function of the various streets. Pavement width should generally

be limited to the minimum necessary to adequately meet circulation demands and emergency vehicle access.

- Policy CDD17B: Encourage new neighborhoods to incorporate detached sidewalks and to establish landscaped "parkways" between curb and sidewalk. Continuous and consistent tree planting to form canopy closure is encouraged.
- Policy CDD17C: To minimize speed and cut-through traffic, consider the use of visual design techniques such as:
  - Narrowing at intersections by creating bulb-outs and median refuges.
  - Diversion of traffic.
  - Landscaping and neighborhood greenways.
  - Utilizing pedestrian level streetlights.
  - Modifying straight, long, and wide sections.

5.16.4 IMPACT DISCUSSION

TRANS-1	The proposed project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities [Threshold T-1]

Local programs, plans, ordinances, and policies that address the City's transportation system are described in Section 5.16.1.1, *Regulatory Framework*, and include the Regional Transportation Plan (RTP) and Sustainable Communities Strategy (SCS) for the Shasta Region, the Redding ATP, the RABA Short Range Transit Plan, Title 11, Vehicles and Traffic of the Redding Municipal Code, and the Redding Complete Streets Policy.

The proposed Transportation Element focuses on developing a transportation system that meets the needs of all segments of the population through a complete streets approach. This includes increasing options for alternative transportation (public transit, walking, and bicycling); ensuring that pedestrian and bicycle systems connect residential neighborhoods to public facilities and services, schools, parks, and shopping areas; and other means to develop a multi-modal transportation system that meets the needs of all members of the community. As shown in Figures 10 through 12 of the proposed Transportation Element, all planned bicycle and pedestrian improvements would be consistent with the Redding ATP. The proposed roadway improvements would also be consistent with the improvements identified in the 2018 RTP/SCS.

The City's Community Design and Development Element also supports alternative transportation by promoting infill and mixed-use development, increasing residential densities along major traffic corridors and near employment opportunities and shopping, and encouraging circulation improvements that promote community connectivity. The goals and policies of the proposed Elements are therefore consistent

with the regional goals and strategies expressed in the 2018 RTP/SCS. Discretionary projects are reviewed on a case-by-case basis according to the Redding Traffic Guidelines to determine compliance with the City's Vehicle Congestion Management Program. When necessary, mitigation measures that reduce the number of single-occupant motor vehicle trips are imposed to confirm compliance with the measures. Implementation of the 2023-2045 General Plan would have a beneficial effect on the City's transportation system by enhancing safety on the roadway system and promoting alternative travel modes, including transit, pedestrian, and bicycle circulation systems. There would be no impact.

Level of Significance Before Mitigation: Impact TRANS-1 would be less than significant.

Mitigation Measures

No mitigation measures are required.

TRANS-2: Implementation of the proposed project would not generate VMT levels inconsistent with CEQA Guidelines section 15064.3, subdivision (b) regarding policies to reduce VMT. [Threshold T-2]

Impact TRANS-2 evaluates whether the project would conflict or be inconsistent with CEQA Guidelines Section 15064.3(b), which describes specific considerations for analyzing transportation impacts as amended on July 1, 2020 pursuant to SB 375. CEQA Guidelines Section 15064.3(b) states that vehicle miles traveled (VMT) is "generally" the most appropriate measure of transportation impacts.

No particular methodology or metric is mandated by Section 15064.3(b) and the methodology or metric is left to the lead agency, bearing in mind the criteria the legislature had in mind for determining the significance of transportation impacts in SB-743. These were expressed in Public Resource Code section 21099(b)(1), which states: "[t]hose criteria shall promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses."

The assessment of VMT impacts for this EIR under Impact TRANS-2 was conducted by GHD utilizing the Shasta County activity-based travel demand model (ShastaSIM) that was developed and maintained by SRTA. ShastaSIM is an advanced activity-based tour model that simulates the travel behavior of all residents in Shasta County over the course of a typical 24-hour weekday. ShastaSIM represents these travel activities as a series of "trip-legs" or "tours" connecting activities each person engages in, such as going to work, shopping or attending school. The current model version (ShastaSIM 1.2) was adopted on October 9, 2018. The ShastaSIM model reports VMT and VMT per Resident (commonly referred to as "VMT per Capita") as a measure of effectiveness and the calculations of VMT reflect a combined VMT for residential, work and school trips (although labeled "Household-Based VMT" in model documentation).

In order to evaluate potential VMT impacts with implementation of the 2023-2045 General Plan, the 2018 TDM was adjusted to reflect actual year 2020 conditions based on development that had occurred in the City since the 2018 TDM was prepared. Therefore, for purposes of the following VMT analysis, year 2020 is

considered the baseline condition. Similarly, for assessing year 2045 conditions under the 2023-2045 General Plan, the 2040 TDM was adjusted to reflect potential development in Redding and its SOI through the year 2045. The results are shown on Table 5.16-3, *Redding 2020 and 2045 VMT Summary.*

Significance Threshold

In December 2018, the Governor's Office of Planning and Research (OPR) released its final Technical Advisory on Evaluating Transportation Impacts in CEQA. For residential and office projects, OPR recommends that a reduction of 15% or more in the regional rate of VMT should be the target for land use projects such as residential, office, and retail. The 15% figure originated in the Air Resources Board's California's 2017 Climate Change Scoping Plan as the average statewide reduction in light-duty VMT that would be needed to meet the State's greenhouse gas reduction goals. CARB has subsequently issued targets for individual MPO regions.

While some of the GHG reductions are based on land use proximity (e.g. placing jobs near housing and services in the land use diagram) much of the VMT reduction relies on the use of transit, and in particular high quality transit. Although transit in the City is improving, high-quality transit as defined by the state (15 minute headways during peak hour) is not yet available in the City meaning that for much of the City the personal vehicle is the only effective mode of transportation. The OPR guidance also notes that VMT is largely a regional impact and that participation in regional programs may be an appropriate method of reducing impacts.

Based on the OPR's 15% reduction recommendation (which is conservative given the above referenced allowable 4% reduction established by Shasta RTA in the 2018 RTP/SCS), Impact TRANS-2 would be considered potentially significant if the forecasted rate of VMT per Resident for the City of Redding and its Sphere of Influence (SOI) under Year 2045 conditions with implementation of the proposed Project were to exceed 85 percent of the baseline (year 2020) regional rate of VMT per Resident for Shasta County. Based on the baseline countywide rate of VMT per Resident (18.3) as shown in Table 5.16-3, Impact TRANS-2 would be considered significant if the rate of VMT per Resident attributable to Redding and its SOI were to exceed 15.6 VMT per Resident.

TABLE 5.16-3 REDDING 2020 AND 2045 VMT SUMMARY

Jurisdiction	Population	Employment	Total VMT				VMT per Resident Threshold[1]	Above Threshold ?
			II Trips VMT	IX and IX Trips VMT	Total	VMT per Resident		
2020 Baseline								
Redding	106,816	50,778	1,142,736	308,584	1,451,321	13.7	-	-
Countywide	191,905	73,585	2,838,772	678,140	3,516,912	18.3	-	-
General Plan 2045								
Redding	124,544	59,712	1,366,124	449,599	1,815,723	14.7	15.6	No
Redding and SOI	137,377	65,360	1,546,876	559,273	2,106,149	15.6	15.6	No
Countywide	225,478	86,976	3,374,575	877,300	4,251,875	18.9	-	-

Source: GHD 2022

[1] VMT per Resident threshold is 85 percent of the 2020 Baseline Countywide average (18.3 miles x 0.85 = 15.6 miles)

Findings

This analysis found that the forecasted rate of VMT per Resident under Year 2045 conditions with the proposed 2023-2045 General Plan is 14.7 VMT per Resident within the City limits, and 15.6 VMT per Resident within the City and SOI, which would not exceed the threshold. This finding is consistent with the 2018 RTP/SCS which noted that Redding has the lowest rate of VMT per capita in Shasta County, and the shortest average trip lengths in the County, reflecting the proximity of homes, jobs and services within Redding. This impact is less than significant.

Level of Significance Before Mitigation: TRANS-2 would be less than significant.

Mitigation Measures

No mitigation measures are required.

TRANS-3: The project would not substantially increase hazards due to a geometric design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). [Threshold T-3]

Roadway hazards are typically assessed at the project level. Potential hazards associated with future development projects would be analyzed and evaluated in detail through the project-specific environmental review process or during project application review. Prior to the construction of streets, highways, alleys, traffic signals, and related public improvements the City of Redding Public Works Department reviews and needs to approve plans according to construction standards and specifications. Additionally, the Redding Local Road Safety Plan will continue to help to guide improvements to the local roadway system based on existing gaps needs.

While growth within the Planning Area would result in changes to the existing transportation network, the proposed 2023-2045 Transportation Element contains policies that require local planning and development decisions to consider impacts to transportation facilities. The following General Plan policies would support the design of a transportation system that is safe for all modes of travel. The following policies could directly and indirectly result in improving the transportation network:

- Policy T1I: Work with the public, stakeholders, and other jurisdictions and agencies to promote, design, and construct an effective transportation system that serves users of all ages and abilities.
- Policy T1G: Pursue financing for components of the transportation system, and strive to ensure that the transportation capital improvement program and other budgetary tools include funding for Complete Streets infrastructure by:
  - Update the transportation capital improvement program (CIP) as necessary and pursue grant funds and other funding sources to augment City resources.
  - Striving to provide appropriate improvements to improve multimodal accessibility with routine street maintenance and improvements such as pavement overlays, sidewalk repair, and ADA curb ramp installation.
- Policy T5A: Support efforts to eliminate traffic fatalities and serious injuries attributable to collisions on City streets.
- Policy T10E: Support efforts as funding to improve safety at locations where rail and other transportation facilities interface.

Implementation of these policies would promote the design of improvements to the transportation network that are safe for all modes of travel. Compliance with State regulations on roadway and facility design, materials, and signage would further minimize this impact. Implementation of proposed project would not result in conflicts with adopted policies, plans, or actions or otherwise increase hazards due to a design feature that may have a significant impact on the environment and impacts would be less than significant.

Level of Significance Before Mitigation: Impact TRANS-3 would be less than significant.

Mitigation Measures

No mitigation measures are required.

TRANS-4: The project would not result in inadequate emergency access. [Threshold T-4]

Future potential development which could occur during the buildout of the proposed 2023-2045 General Plan would alter land use patterns and increase travel demand on the transportation network that may influence emergency access. Like roadway hazards, emergency access is typically assessed at the project level, and potential impacts to emergency access associated with future development projects would be

analyzed and evaluated in detail through the environmental review process or during project application review. Prior to the construction of streets, highways, alleys, traffic signals, and related public improvements, the City of Redding Public Works Department reviews and needs to approve plans according to construction standards and specifications to ensure adequate emergency access. This may include applying for an encroachment permit and other requirements outlined in the Temp Traffic Control Plan Guidelines for projects that involve working in the City of Redding right of way.

While growth within the Planning Area would result in changes to land use and the existing transportation network, the proposed 2023-2045 Public Safety Element contains policies that require local planning and development decisions to consider improvements to transportation efficiency, mobility, and access including developing and updating emergency response plans. The following describes the policies that directly and indirectly result in providing emergency access:

- Policy PS4G: Consider establishing a program to construct and maintain fire-access roads in ravine areas considered to have a very high fire danger to enhance the ability to suppress wildland fires. These roads need not be surfaced and may also function as part of the City's trail system. Erosion and impacts to native vegetation and natural features shall be minimized.
- Policy PS4K: Enforce subdivision regulations that generally limit cul-de-sac lengths to no greater than 600 feet and strive to ensure that sufficient emergency-vehicle turnaround areas are provided.
- Policy PS4L: Apply as appropriate, subdivision regulations requiring each residential development having 50 or more dwelling units and each commercial development employing 150 or more people to have at least two connected points of public access as may be determined necessary by the Fire Marshal.
- Policy PS4M: Seek to construct emergency-vehicle access routes to open-space areas at optimal locations within projects during the development process, as funding or law allows. As funding and physical conditions allow, construct such access routes in existing developments where warranted.
- Policy PS4N: Strive to ensure new subdivisions have adequate fire protection measures such as multi-access for firefighting apparatus, noncombustible building construction, appropriate defensible space, street widths and grade to accommodate emergency vehicles and evacuees simultaneously.

Implementation of these policies would address emergency access by considering access routes, developing and updating emergency response plans, and incorporating emergency access considerations in the design of future street improvements. Implementation of the 2023-2045 General Plan would not result in inadequate emergency access that may have a significant impact on the environment and impacts would be less than significant. No mitigation measures are required.

Level of Significance Before Mitigation: Impact TRANS-4 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.16.5 CUMULATIVE IMPACTS

TRANS-5	Implementation of the proposed project would not, in combination with past, present, and reasonably foreseeable projects, result in a cumulative impact with respect to transportation.

Future potential development under the proposed 2023-2045 General Plan would contribute to an increase in VMT in the City and SOI as shown in Table 5.16-3. Buildout of the proposed 2023-2045 General Plan is assumed over a 25-year project horizon. Implementation of the proposed 2023-2045 General Plan by the horizon year of 2045 would result in a net increase of people and employees in the Planning Area.

As described under impact discussion TRANS-2, implementation of the proposed project would result in a rate of VMT per Resident for the City and SOI that would be approximately 15 percent lower than the existing Countywide rate of VMT per Resident.

Similarly, the 2018 RTP/SCS noted that Redding has the lowest rate of VMT per capita in Shasta County, and the shortest average trip lengths in the County, reflecting the proximity of homes, jobs and services within Redding.

As a result, future development within the City and SOI under the proposed 2023-45 by the horizon year of 2045 is not anticipated to contribute to increases in the regional average rate of VMT per Resident, and therefore the project contribution to regional VMT impacts would be less than significant.

Level of Significance Before Mitigation: Impact TRANS-5 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.16.6 REFERENCES

California Governor's Office of Planning and Research (OPR). 2018, December. Technical Advisory on Evaluating Transportation Impacts in CEQA. https://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf.

Redding, City of. 2009, January. Traffic Impact Analysis Guidelines. https://www.cityofredding.org/home/showdocument?id=936

_____.2012, August. City of Redding Complete Streets Policy. https://www.srta.ca.gov/DocumentCenter/View/3240/Redding_CompleteStreetsPolicy

_____. 2017, December 5. Redding City Council Resolution No. 2017-113.

_____. 2018a, April. Redding River Crossing Specific Plan. https://files.ceqanet.opr.ca.gov/39013-4/attachment/SXlW13qFjDLBsUZk-prH3eG7mHvKXm7178REifvTmJvDEKdKep1UfaIH-9ba2WPUnMowbsBW7usKYOe20.

_____. 2018b, April. City of Redding Active Transportation Plan. https://www.cityofredding.org/home/showpublisheddocument/25179/637522648511130000

_____. 2018c, April. City of Redding Active Transportation Plan, Appendices. https://www.cityofredding.org/home/showpublisheddocument/24020/637285241993370000

_____. 2022a, July. Citywide Transportation Impact Fee. https://www.cityofredding.org/home/showpublisheddocument/24116/637965037523570000

_____. 2022b, July. City of Redding Impact Fees. https://www.cityofredding.org/home/showpublisheddocument/28035/637965037777330000

_____. 2022c, February 15. Redding Local Road Safety Plan. http://reddingcityca.iqm2.com/Citizens/FileOpen.aspx?Type=1&ID=3263&Inline=True

_____. 2023, February. City of Redding Local Hazard Mitigation Plan 2022-2027. https://www.cityofredding.org/home/showpublisheddocument/28877/638131951485400000

Shasta Regional Transportation Agency (SRTA). 2018, October 9. Regional Transportation Plan & Sustainable Communities Strategy for the Shasta Region. https://www.srta.ca.gov/DocumentCenter/View/4285/2018-Regional-Transportation-Plan--Sustainable-Communities-Strategy-adopted-Oct-9-2018?bidId=

_____. 2021. Ways and Means Report. https://www.srta.ca.gov/DocumentCenter/View/5691/Ways-and-Means-Report-Winter-2021-105MB-pdf

5.17 UTILITIES AND SERVICE SYSTEMS

This section of the Draft Environmental Impact Report (DEIR) discusses the current conditions for utility providers, including water, wastewater, stormwater, and solid waste. Electricity and natural gas are discussed in Section 5.6, *Energy*.

The analysis in this section was informed by correspondence with the Redding Water Utility Department, Redding Wastewater Utility Department, and Redding Solid Waste Department:

- Service Provider Questionnaires, May 24, 2023. A complete copy of the departments' responses is included as Appendix 5.15-1 to this EIR.

5.17.1 WASTEWATER TREATMENT AND COLLECTION

5.17.1.1 ENVIRONMENTAL SETTING

Regulatory Framework

Federal Regulations

The federal government regulates wastewater treatment and planning through the Federal Water Pollution Control Act of 1972, more commonly known as the Clean Water Act (CWA), as well as through the National Pollutant Discharge Elimination System (NPDES) permit program, both of which are discussed in further detail below.

Clean Water Act

The CWA regulates the discharge of pollutants into watersheds throughout the nation. It is the primary federal law governing water pollution. Under the CWA, the U.S. Environmental Protection Agency (US EPA) implements pollution control programs and sets wastewater standards. The objective of the CWA is to restore and maintain the chemical, physical, and biological integrity of the nation's waters by preventing point and nonpoint pollution sources, providing assistance to publicly owned treatment works for the improvement of wastewater treatment, and maintaining the integrity of wetlands.

National Pollutant Discharge Elimination System

The NPDES permit program was established in the CWA to regulate municipal and industrial discharges to surface waters of the United States. Federal NPDES permit regulations have been established for broad categories of discharges, including point-source municipal waste discharges and nonpoint-source stormwater runoff. NPDES permits generally identify effluent and receiving water limits on allowable concentrations and/or mass emissions of pollutants contained in the discharge; prohibitions on discharges not specifically allowed under the permit; and provisions that describe required actions by the discharger,

including industrial pretreatment, pollution prevention, self-monitoring, and other activities. Wastewater discharge is regulated under the NPDES permit program for direct discharges into receiving waters and by the National Pretreatment Program for indirect discharges to a sewage treatment plant.

State Regulations

State Water Resources Control Board: Statewide General Waste Discharge Requirements

The General Waste Discharge Requirements specify that all federal and state agencies, municipalities, counties, districts, and other public entities that own or operate sanitary sewer systems greater than one mile in length that collect and/or convey untreated or partially treated wastewater to a publicly owned treatment facility in the State of California need to develop a Sewer Master Plan. The plan evaluates existing sewer collection systems and provides a framework for undertaking the construction of new and replacement facilities to maintain proper levels of service. The master plan includes inflow and infiltration studies to analyze flow monitoring and water use data, a capacity assurance plan to analyze the existing system with existing land use and unit flow factors, a condition assessment and sewer system rehabilitation plan, and a financial plan with recommended capital improvements and financial models.

Senate Bill 244- Planning for Disadvantaged Communities

Government Code (GC) Section 56430, as amended by Senate Bill (SB) 244, now requires Local Agency Formation Commissions to include in the Municipal Services Review a description of the "location and characteristics of any disadvantaged unincorporated communities within or contiguous to the sphere of influence." (Gov. Code, § 56430(a)(2).) SB 244 generally requires cities and counties to address the infrastructure needs of unincorporated disadvantaged communities in city and county general plans. For cities and counties, SB 244 requires that, before the due date for adoption of the next housing element after January 1, 2012, the general plan land use element must be updated to:

- Identify unincorporated disadvantaged communities.
- Analyze for each identified community the water, wastewater, stormwater drainage, and structural fire protection needs.
- Identify financial funding alternatives for the extension of services to identified communities.

Local Regulations

2000-2020 Redding General Plan

Community Development and Design Element

- **Goal CDD1**: Encourage urban growth to occur within the City and provide a development pattern that establishes an orderly urban service area.

- Policy CDD1F: Generally oppose development of community septic systems or temporary sewage disposal facilities within the Sphere of Influence.

Public Facilities and Services Element

- Goal PF1: Ensure that adequate public services and facilities are available to support development in an efficient and orderly manner.
  - Policy PF1A: Require that all new development, including major modifications to existing development, construct necessary on-site infrastructure to serve the project in accordance with City standards.
  - Policy PF1B: Require that all new development, including major modifications to existing development, construct or provide a fair share contribution toward the construction of any off-site improvements necessary to offset project impacts and/or support the project.
  - Policy PF1C: When reviewing applications for land use designation changes (i.e. zone change, General Plan Amendment, Specific Plan), conduct a thorough analysis of the impacts of the proposed changes on all aspects of the City's infrastructure system, and require mitigation as appropriate.
  - Policy PF1D: Require that the provision of streets, sewer, electric, water, drainage, and other needed infrastructure be coordinated in a logical manner between adjacent developments so as to reduce design, construction and maintenance costs.
  - Policy PF1E: Require that infrastructure be designed and constructed to meet ultimate capacity needs, pursuant to a master plan, so as to avoid the need for costly retrofitting.
  - Policy PF1F: Utilize reimbursement agreements, where appropriate, when upgraded or oversized facilities are installed by an individual developer and the cost of the facilities exceeds the development's proportional share of responsibility.
  - Policy PF1G: Direct growth toward areas which already have infrastructure capacity available by providing incentives for quality infill development and services.
  - Policy PF1H: Encourage clustering of development to maximize the use and efficiency of infrastructure facilities.
  - Policy PF1I: Regularly update and adopt the City's Capital Improvement Program (CIP) to prioritize funding for public works projects in accordance with the General Plan.
  - Policy PF1J: Recognize the considerable public investment made in existing utility and street infrastructure by ensuring that funding for maintaining its integrity, reliability, and service levels is on par with investment in new facilities.
- Goal PF6: Maintain an adequate level of service in the City’s sewage collection and treatment systems to meet existing and future needs.

- Policy PF6A: Establish the following thresholds for sewer facilities:
  - Program planned expansion activities when a trunk line, interceptor line, or lift station reaches 75 percent of capacity.
  - Program planned expansion activities, when an existing wastewater treatment plant reaches 75 percent capacity based on dry weather flows on an ongoing basis.
- Policy PF6B: Monitor operation of the sewage collection and treatment system to determine when upgrading or expansion of the system is necessary to serve development demands.
- Policy PF6C: Develop and implement a regular program for replacing and upgrading deteriorated and undersized sewer lines to reduce inflow and infiltration into the system.
- Policy PF6E: Develop a market and the ability to deliver reclaimed water for appropriate uses.

- Goal PF20: Achieve and maintain adopted facility and service standards through the use of equitable funding methods and innovative strategies.
  - Policy PF20A: Determine the demand for new public facilities created by new development as compared to the demand for new facilities created by the community as a whole. Based on the results, determine the "fair share" of the financial contributions that are appropriate for both the community at large and new development.
  - Policy PF20B: Prepare an updated impact fee ordinance that requires new development to pay its "fair share" of the cost to build needed public facility improvements. Facilities to be considered include, but are not limited to: public safety, parks, streets and intersections, water treatment and distribution, sewage collection and wastewater treatment, storm drainage, transit, and electric facilities.
  - Policy PF20C: Where appropriate, distribute the responsibility to pay for new public facilities between existing and future development based on their respective demands on the system.
  - Policy PF20D: Identify and pursue alternative funding sources that can be used for capital improvement project construction, staffing and ongoing maintenance of public improvements. Expand the search for grant funding.
  - Policy PF20E: Require the preparation of a fiscal impact analysis for all specific plans or significant general plan land use amendments and annexations. The analysis will examine the fiscal impacts on the City and other service providers that result from large scale development. The fiscal analysis shall project a positive fiscal impact form new

development or include mechanisms to fund projected fiscal deficits. Exceptions may be made when new development generates significant public benefits (e.g., low-income housing, primary-wage-earner employment) and when alternative sources of funding can be obtained to offset foregone revenues.

Wastewater Connection Fees

The City of Redding charges new developments a Wastewater Connection Fee; the fee is $6,207 per household equivalent as of July 1, 2022 (Redding 2022a).

Redding Municipal Code

Chapter 14.16, Sewers, of the Redding Municipal Code provides regulations to set forth the uniform requirements for contributions to the City's wastewater collection facilities and wastewater treatment facilities by all users thereof. These regulations enable the City to comply with applicable state and federal laws required by the Clean Water Act. The objectives of this Chapter are:

- To provide revenue for funding maintenance, operation, replacement, improvement, and extension of the City's publicly owned treatment works (POTW);
- To provide for regulation and control of sewer connections;
- To prevent the introduction of pollutants into the City's sewer collection system that may interfere with the POTW;
- To provide for the protection and well-being of personnel associated with wastewater transmission and treatment and the general public;
- To enable the City to comply with its National Pollutant Discharge Elimination System permit conditions, sludge use and disposal requirements, and any other federal or state laws to which the POTW is subject.

City of Redding 2022 Wastewater Utility Master Plan

The 2022 Wastewater Utility Master Plan addresses the City's wastewater collection and treatment system needs for existing conditions, as well as for planning periods of 2027, 2032, and Ultimate Buildout. The Master Plan addresses both collection system and wastewater treatment facilities for the Clear Creek and Stillwater service areas (Redding 2022b).

Existing Conditions

Wastewater Treatment

Clear Creek Wastewater Treatment Plant

The Clear Creek Wastewater Treatment Plant (WWTP) opened in 1966 and was substantially upgraded in 1978, 1990, 1996, and as recently as 2014. The Clear Creek Treatment plant is located at 2220 Metz Road. Operators treat influent wastewater to high-quality standards, ensuring that stringent water quality criteria are met and that public health and the environment are protected. The Clear Creek WWTP is operated and maintained safely and in compliance with National Pollutant Discharge Elimination System (NPDES) permit limits and best management practices (BMPs) (Redding 2022c). The average dry weather design flow is 9.4 million gallons/day (mgd) and the peak wet weather flow is 40+ mgd (Redding 2022c).

Stillwater Wastewater Treatment Plant

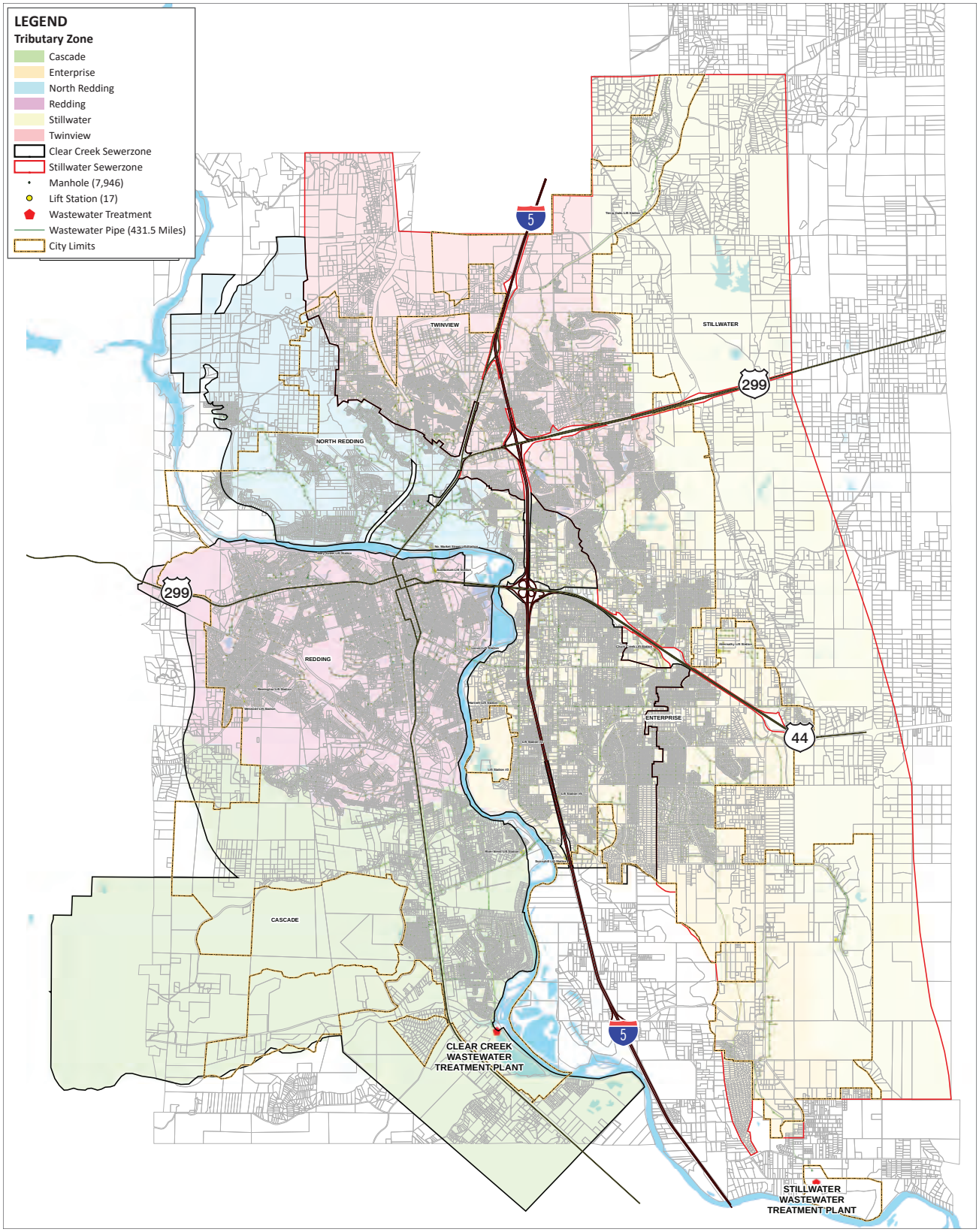
The Stillwater WWTP was opened in 1992 and a plant expansion was completed in 2014. Stillwater Treatment Plant is located at 6475 Airport Road. In 2020, numerous upgrades and equipment replacements were completed including the replacement of the disinfection dosing equipment, and toxic gas scrubber, as well as the installing a new odor control biofilter. Operators treat influent to high-quality standards, ensuring that stringent water quality criteria are met and that public health and the environment are protected. The Stillwater WWTP is safely operated and maintained in compliance with NPDES permit limits and BMPs (Redding 2022d). The average dry weather design flow is 4 mgd and the peak wet weather flow is 14.4 mgd (Redding 2022d).

Wastewater Collection

The Collection Division maintains 18 public sewer lift stations, 442 miles (2,333333,676 feet) of public sewer lines, and 8,167167 manholes. Each year, more than 408 miles (4,154,240 feet) of sewer lines are cleaned, and more than 173 miles (913,440 feet) of sewer lines are TV/video inspected each year (Redding 2022e). The Collection Division's goal is to maintain the current system and plan for the future needs of the community, while continually striving to reduce sewer line blockages and eliminate sanitary sewer overflows. The Collection Division staff uses a variety of technology to monitor and repair the system. The public sewer system does not include the sewer laterals that connect homes and businesses to the public system; those laterals are private facilities and must be maintained by the property owner (Redding 2022e).

Figure 5.17-1, *City of Redding Wastewater Treatment and Collection,* shows the locations of the sewer lines, the Clear Creek and Stillwater WWTPs and sewer zones, and sewer manholes.

5.17 UTILITIES AND SERVICE SYSTEMS



Source: City of Reddding, 2015.

0 1.75
Scale (Miles)

Figure 5.17-1
City of Redding Wastewater Treatment and Collection

This page intentionally left blank.

5.17.1.2 THRESHOLDS OF SIGNIFICANCE

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

UTIL-1 Require or result in the relocation or construction of new or expanded wastewater treatment facilities, the construction or relocation of which could cause significant environmental effects.

UTIL-2 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.

UTIL-3 In combination with past, present, and reasonably foreseeable projects, result in a cumulative impact with respect to wastewater facilities.

5.17.1.3 PROPOSED GENERAL PLAN POLICIES

The following policies of the 2023-2045 General Plan Update are relevant to wastewater treatment and collection.

Community Development and Design Element

- Policy CDD1F: Generally oppose development of community septic systems, wastewater package plants, and/or temporary sewage disposal facilities within the Primary and Secondary Growth areas for developments within the jurisdiction of Shasta County. Exceptions include situations where public health and safety concerns, with existing development, need to be addressed.

Environmental Justice Element

- Policy EJ5F: Increase citizen awareness and implementation of water and energy efficiency, weatherization, disaster risk reduction, climate change adaptation and mitigation, wildfire smoke protection, and safety from extreme heat through public engagement, incentives, and assistance with a special focus on underserved residents and areas with vulnerable populations.
- Policy EJ6A: Work proactively with residents as appropriate to ensure existing and new public facilities, infrastructure, services are addressed in a manner that reflects the community's needs and shifting priorities of future demands in an equitable manner, to the extent feasible.
- Policy EJ6B: Coordinate with water, sewer, solid waste, electricity, police, and fire service providers to provide continuation of efficient and effective service, delivery, operations, and maintenance. Identify and prevent potential system vulnerabilities and coordinate with partnering agencies that provide public facilities to establish response teams or contingency plans in case of failure or emergency.

Public Facilities and Services Element

- Policy PF1A: Require all new development, including major modifications to existing development, construct necessary on-site infrastructure to serve the project in accordance with the City standards.
- Policy PF1B: Consider requiring all new development, including major modifications to existing development, construct or provide a fair share contribution toward the construction of any off-site improvements necessary to offset project impacts and/or support the project ensuring that established service levels are maintained.
- Policy PF1C: When reviewing applications for land use designation changes (i.e. zone change, General Plan Amendment, Specific Plan), the City may require that a thorough analysis of the impacts of the proposed changes on the City's infrastructure system be provided and that mitigation be required as appropriate.

- Policy PF1D: Require that the provision of streets, sewer, electric, water, drainage, and other needed infrastructure be coordinated in a logical manner between adjacent developments so as to reduce design, construction and maintenance costs.
- Policy PF1E: Work toward requiring that infrastructure be designed and constructed to meet ultimate capacity needs, pursuant to a master plan, so as to avoid the need for expensive retrofitting to the extent feasible.
- Policy PF5A: Adhere to the following thresholds for sewer facilities to the extent feasible:
    - Program planned expansion activities, when a trunk line, interceptor line, or lift station reaches 75 percent of capacity.
    - Program planned expansion activities, when an existing wastewater treatment plant reaches 75 percent capacity based on dry weather flows on an ongoing basis.
    - Periodically review and update the Wastewater Utility Masterplan to guide long-range planning, design, and development of the wastewater system infrastructure.
- Policy PF5B: Monitor the operation of the sewage collection and treatment system to determine when upgrading or expansion of the system is necessary to serve development demands.
- Policy PF5C: Work to develop and implement a regular program for replacing and upgrading deteriorated and undersized sewer lines to reduce inflow and infiltration into the system.
- Policy PF5D: Dispose wastewater biosolids through appropriate techniques consistent with standard industry practices as permitted by the California Regional Water Quality Control Board and other approving/ regulatory bodies.
- Policy PF5E: Consider investigating the feasibility of utilizing reclaimed water through environmentally sustainable practices. Work to develop a market and the ability to deliver reclaimed water for identified uses as appropriate.
- Policy PF14A: Through nexus studies determine the demand for new public facilities created by new development as compared to the demand for new facilities created by the community as a whole. Based on the results, determine the "fair share" of the financial contributions that are appropriate for both the community at large and new development.
- Policy PF14B: Update as necessary the ordinance for development impact fees that obligates new development to pay its "fair share" of the cost to build needed public facility improvements.
- Policy PF14C: Where appropriate, distribute the responsibility to pay for new public facilities between existing and future development based on their respective demands on the system.
- Policy PF14D: Strive to identify and pursue alternative funding sources that can be used for: capital improvement project construction, staffing and ongoing maintenance of public improvements. Expand the search for grant funding.

- Policy PF14E: As appropriate, request the preparation of a fiscal impact analysis for all specific plans or significant general plan land use amendments and annexations. The analysis will examine the fiscal impacts on the City and other service providers that result from large scale development. The fiscal analysis shall project a positive fiscal impact form new development or include mechanisms to fund projected fiscal deficits. Exceptions may be made when new development generates significant public benefits (e.g., low-income housing, primary-wage-earner employment) and when alternative sources of funding can be obtained to offset foregone revenues.

5.17.1.4 IMPACT DISCUSSION

UTIL-1	Sewer and wastewater treatment systems have adequate capacity to meet project requirements, and would not result in the need for new or expanded wastewater treatment facilities. [Thresholds UTIL-1 and UTIL-2]

Under the proposed project, existing land use classifications and configurations would remain unaffected. As such, implementation of the proposed project would not require or result in the construction of new wastewater treatment facilities or expansion of existing facilities. As the City continues to grow, as described in Table 3-2, *2045 General Plan Planning Horizon Forecast*, in Chapter 3, *Project Description,* the City would ensure that all new development is provided wastewater services and all environmental impacts associated with the expansion or development of wastewater treatment facilities, if applicable, is evaluated. Planning and construction of new or expanded wastewater facilities to accommodate new development is an on-going process for any area where future growth is anticipated.

In correspondence with the City of Redding Public Work's Department, it was noted that the department currently meets the wastewater treatment and collection demands of its service area. The department notes that depending on the area of growth, a modeling assessment of the projected flows and an evaluation of the loading at the respective treatment plants would be required in order to determine what infrastructure improvements would be needed. The department recommends continuing to conduct a Utility Master Plan update every 10 years to evaluate the collection system and treatment facilities for future needs. In addition the Department notes the importance of designing a rate structure and impact fee program sufficient revenue for future projects as growth occurs (Appendix 5.15-1).

As stated in the 2022 Wastewater Utility Master Plan, improvements would be made to the City's wastewater collection and treatment system for both the Clear Creek and Stillwater service areas. Improvements include, but are not limited to, upgrading old pipelines, increasing the diameter size of pipes, and increasing the capacities of collection facilities (Redding 2022b). As such, these improvements could increase the City's ability to collect and treat increased wastewater generated under the proposed project.

Moreover, the proposed 2023-2045 General Plan Update includes the following policies from the Public Facilities Element that require all new development to be served by the City's wastewater system and provide standards for assessing the impacts from future development:

- Policy PF1A: Require that all new development, including major modifications to existing development, construct necessary on-site infrastructure to serve the project in accordance with the City standards.
- Policy PF1B: Consider requiring all new development, including major modifications to existing development, construct or provide a fair share contribution toward the construction of any off-site improvements necessary to offset project impacts and/or support the project ensuring that established service levels are maintained.
- Policy PF1C: When reviewing applications for land use designation changes (i.e. zone change, General Plan Amendment, Specific Plan), the City may require that a thorough analysis of the impacts of the proposed changes on the City's infrastructure system, and require mitigation as appropriate.
- Policy PF1D: Require that the provision of streets, sewer, electric, water, drainage, and other needed infrastructure be coordinated in a logical manner between adjacent developments so as to reduce design, construction and maintenance costs.
- Policy PF1E: Work toward requiring that infrastructure be designed and constructed to meet ultimate capacity needs, pursuant to a master plan, so as to avoid the need for expensive retrofitting to the extent feasible.
- Policy PF5A: Adhere to the following thresholds for sewer facilities to the extent feasible:
    - Program planned expansion activities, when a trunk line, interceptor line, or lift station reaches 75 percent of capacity.
    - Program planned expansion activities, when an existing wastewater treatment plant reaches 75 percent capacity based on dry weather flows on an ongoing basis.
    - Periodically review and update the Wastewater Utility Masterplan to guide long-range planning, design, and development of the wastewater system infrastructure.
- Policy PF5B: Monitor the operation of the sewage collection and treatment system to determine when upgrading or expansion of the system is necessary to serve development demands.
- Policy PF5C: Work to develop and implement a regular program for replacing and upgrading deteriorated and undersized sewer lines to reduce inflow and infiltration into the system.
- Policy PF5D: Dispose wastewater biosolids through appropriate techniques consistent with standard industry practices as permitted by the California Regional Water Quality Control Board and other approving/ regulatory bodies.
- Policy PF5E: Consider investigating the feasibility of utilizing reclaimed water through environmentally sustainable practices. Work to develop a market and the ability to deliver reclaimed water for identified uses as appropriate.

This EIR is a programmatic document and does not evaluate the environmental impacts of any project-specific development. Any new or expanded wastewater facilities, if needed, would be considered a project-specific development and would come under the direct regulatory authority of the Regional Water Quality Control Board. Additionally, such projects would be analyzed in accordance with CEQA.

In conjunction with applicable state regulatory requirements and the proposed General Plan Update polices, implementation of the proposed project would be adequately served by wastewater treatment facilities by ensuring sufficient capacity is available to serve the proposed project's demand. Therefore, impacts would be less than significant.

Level of Significance Before Mitigation: Impact UTIL-1 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.17.1.5 CUMULATIVE IMPACTS

UTIL-2	Implementation of the proposed project would not 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 [Threshold UTIL-3].

Development allowed by the 2023-2045 General Plan would generate increased amounts of wastewater in the City. However, several policies included in the 2023-2045 General Plan would ensure that the City's wastewater treatment system will have adequate capacity to meet future demand. These include the following policies that aim to sufficiently fund the City's wastewater treatment system:

- Policy PF14A: Through nexus studies determine the demand for new public facilities created by new development as compared to the demand for new facilities created by the community as a whole. Based on the results, determine the "fair share" of the financial contributions that are appropriate for both the community at large and new development.
- Policy PF14B: Update as necessary the ordinance for Development Impact Fees that obligates new development to pay its "fair share" of the cost to build needed public facility improvements.
- Policy PF14C: Where appropriate, distribute the responsibility to pay for new public facilities between existing and future development based on their respective demands on the system.
- Policy PF14D: Strive to identify and pursue alternative funding sources that can be used for capital improvement project construction, staffing and ongoing maintenance of public improvements. Endeavor to expand the search for grant funding.

- Policy PF14E: As appropriate, request the preparation of a fiscal impact analysis for all specific plans or significant general plan land use amendments and annexations. The analysis will examine the fiscal impacts on the City and other service providers that result from large scale development. The fiscal analysis shall project a positive fiscal impact form new development or include mechanisms to fund projected fiscal deficits. Exceptions may be made when new development generates significant public benefits (e.g., low-income housing, primary-wage-earner employment) and when alternative sources of funding can be obtained to offset foregone revenues.

As noted in impact UTIL-1, the City of Redding Public Work's Department is currently meeting the wastewater treatment and collection demands of its service area. However, if growth occurs, a modeling assessment of projected flows and loading at the respective treatment plants would be needed. In addition, as with the project-level analysis, any new or expanded wastewater facilities would be subject to project-specific review under CEQA and the direct regulatory authority of the RWQCB, and would require a Report of Waste Discharge to be filed and issuance of new or modified WDRs by the RWQCB.

The processes and requirements described in this section will ensure that the cumulative impacts related to wastewater would be less than significant.

Level of Significance Before Mitigation: Impact UTIL-2 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.17.2 WATER SUPPLY AND DISTRIBUTION SYSTEMS

5.17.2.1 ENVIRONMENTAL SETTING

Regulatory Framework

State Regulations

California Water Code

To assist with water suppliers, cities, and counties in integrating water and land use planning, the state passes Senate Bill (SB) 610, which is codified in the California Water Code Section 10910. The lead agency preparing a CEQA document shall identify any water system whose service area includes a project site and any water system adjacent to a project site that is, or may become, a public water system that may supply water for a project. If the lead agency is not able to identify any public water system that may supply water for a project, then the lead agency shall prepare a water assessment.

Urban Water Management Planning Act

In accordance with California Water Code, §10610-10656 and §10608 every urban water supplier that either provides over 3,000 acre-feet of water annually or serves more than 3,000 urban connections is required to submit an Urban Water Management Plan (UWMP). The Plan is prepared by urban water suppliers every five years to support the suppliers' long-term resource planning to ensure that adequate water supplies are available to meet the existing and future water needs.

California Green Building Standards Code

Part 11 of the Title 24 Building Energy Efficiency Standards is referred to as the California Green Building Standards Code (CALGreen Code). The CALGreen Code is intended to encourage more sustainable and environmentally-friendly building practices, conserve natural resources, and promote the use of energy-efficient materials and equipment. Since 2011, the CALGreen Code has been mandatory for all new residential and non-residential buildings constructed in the state. Mandatory measures related to water conservation include water-conserving plumbing fixture and appliance requirements, including flow rate maximums, compliance with state and local water-efficient landscape standards for outdoor potable water use in landscape areas, and recycled water systems, where available. The CALGreen Code was most recently updated in 2022 and became effective January 1, 2023.

State Model Landscape Ordinance

The California Water Conservation in Landscaping Act, also known as the State Landscape Model Ordinance, was amended pursuant to Assembly Bill (AB) 2717 and AB 1881. AB 2717 required the Department of Water Resources (DWR) to adopt a model local water efficient landscape ordinance that each local agency may adopt and requires local agencies to adopt a water efficient landscape ordinance. AB 1881 required cities and counties to adopt landscape water conservation ordinances by January 31, 2010, or to adopt a different ordinance that was at least as effective in conserving water as the California Updated Model Water Efficient Landscape Ordinance (MWELO).

DWR updated the MWELO in 2015, consistent with the Governor's Executive Order B-29-15. The updated MWELO requires cities and counties to adopt landscape water conservation ordinance by February 1, 2016, or to adopt a different ordinance that is at least as effective in conserving water as the updated Model Ordinance. Residential, commercial, industrial, and institutional projects that include landscaped areas of 500 square feet or more must be MWELO-compliant (23 Cal. Code Regs. §§ 490 *et seq.*).

Assembly Bill 1668 (AB 1668) and Senate Bill 606 (SB 606)- Water Management Planning

AB 1668 and SB 606 build on Governor Brown's ongoing efforts to make water conservation a way of life in California and create a new foundation for long-term improvements in water conservation and drought planning. SB 606 and AB 1668 establish guidelines for efficient water use and a framework for the

implementation and oversight of the new standards. These two bills strengthen the state's water resiliency in the face of future droughts with provisions that include:

- Establishing water use objectives and long-term standards for efficient water use that apply to urban retail water suppliers comprised of indoor residential water use, outdoor residential water use, commercial, industrial and institutional (CII) irrigation with dedicated meters, water loss, and other unique local uses.
- Providing incentives for water suppliers to recycle water.
- Identifying small water suppliers and rural communities that may be at risk of drought and water shortage vulnerability and provide recommendations for drought planning.
- Requiring both urban and agricultural water suppliers to set annual water budgets and prepare for drought.

Local Regulations

2000-2020 Redding General Plan

Public Facilities and Services Element

- **Goal PF1**: Ensure that adequate public services and facilities are available to support development in an efficient and orderly manner.
    - **Policy PF1**: Require that all new development, including major modifications to existing development, construct necessary on-site infrastructure to serve the project in accordance with City standards.
    - **Policy PF1B**: Require that all new development, including major modifications to existing development, construct or provide a fair share contribution toward the construction of any off-site improvements necessary to offset project impacts and/or support the project.
    - **Policy PF1C**: When reviewing applications for land use designation changes (i.e. zone change, General Plan Amendment, Specific Plan), conduct a thorough analysis of the impacts of the proposed changes on all aspects of the City's infrastructure system, and require mitigation as appropriate.
    - **Policy PF1D**: Require that the provision of streets, sewer, electric, water, drainage, and other needed infrastructure be coordinated in a logical manner between adjacent developments so as to reduce design, construction and maintenance costs.
    - **Policy PF1E**: Require that infrastructure be designed and constructed to meet ultimate capacity needs, pursuant to a master plan, so as to avoid the need for costly retrofitting.

- Policy PF1F: Utilize reimbursement agreements, where appropriate, when upgraded or oversized facilities are installed by an individual developer and the cost of the facilities exceeds the development's proportional share of responsibility.
- Policy PF1G: Direct growth toward areas which already have infrastructure capacity available by providing incentives for quality infill development.
- Policy PF1H: Encourage clustering of development to maximize the use and efficiency of infrastructure facilities.
- Policy PF1I: Regularly update and adopt the City's Capital Improvement Program (CIP) to prioritize funding for public works projects in accordance with the General Plan.
- Policy PF1J: Recognize the considerable public investment made in existing utility and street infrastructure by ensuring that funding for maintaining its integrity, reliability, and service levels is on par with investment in new facilities.

- Goal PF5: Maintain an adequate level of service in the City's water system to meet existing and future needs.
  - Policy PF5A: Establish the following thresholds for water services and facilities:
    - Program planned expansion activities, when demand at an existing treatment plant reaches within 10 percent plant capacity.
    - Reservoir capacity should be maintained at 20 percent of maximum day demand.
    - Develop additional water supplies from wells at least two years prior to a projected water deficit.
  - Policy PF5B: Develop and maintain a regular program for systematically replacing deteriorated or deficient water pipes.
  - Policy PF5C: Require water distribution systems to be interconnected ("looped") wherever feasible to facilitate the reliable delivery of water anywhere in the City.
  - Policy PF5D: Immediately begin the process to acquire additional allocations from the U.S. Bureau of Reclamation.
  - Policy PF5E: Be actively involved in surface water adjudication which could have a negative impact on the City's water rights and/or allocation.
  - Policy PF5F: Periodically update the City's Master Water Plan to reflect changes to the General Plan General Plan Diagram, water use pattern changes, regulatory changes, or other circumstances.
- Goal PF20: Achieve and maintain adopted facility and service standards through the use of equitable funding methods and innovative strategies.

- Policy PF20A: Determine the demand for new public facilities created by new development as compared to the demand for new facilities created by the community as a whole. Based on the results, determine the "fair share" of the financial contributions that are appropriate for both the community at large and new development.
- Policy PF20B: Prepare an updated impact fee ordinance that requires new development to pay its "fair share" of the cost to build needed public facility improvements. Facilities to be considered include, but are not limited to: public safety, parks, streets and intersections, water treatment and distribution, sewage collection and wastewater treatment, storm drainage, transit, and electric facilities.
- Policy PF20C: Where appropriate, distribute the responsibility to pay for new public facilities between existing and future development based on their respective demands on the system.
- Policy PF20D: Identify and pursue alternative funding sources that can be used for: capital improvement project construction, staffing and ongoing maintenance of public improvements. Expand the search for grant funding.
- Policy PF20E: Require the preparation of a fiscal impact analysis for all specific plans or significant general plan land use amendments and annexations. The analysis will examine the fiscal impacts on the City and other service providers that result from large scale development. The fiscal analysis shall project a positive fiscal impact form new development or include mechanisms to fund projected fiscal deficits. Exceptions may be made when new development generates significant public benefits (e.g., low-income housing, primary-wage-earner employment) and when alternative sources of funding can be obtained to offset foregone revenues.

2020 Urban Water Management Plan

The purpose of the Urban Water Management Plan (UWMP) is to maintain efficient use of water supplies, continue to promote conservation programs and policies, ensure that sufficient water supplies are available for future beneficial use, and provide a mechanism for response during water drought conditions. The City recognizes the importance of maintaining a high-quality reliable water supply. Although water is a renewable resource, it is limited. A long-term reliable supply of water is essential to protect the local and state economy. The main focus for the City is to provide high quality water, maximize the efficient use of water, and promote conservation (Redding 2021).

Redding Municipal Code

City ordinances regarding water service are set forth in City Municipal Code Chapter 14.08, Water. The City's Water Shortage Contingency Plan (WSCP) is set forth in Municipal Code Chapter 14.09, Water Shortage Contingency Plan. The WSCP consists of six stages. Stage 1 consists of Year-Round Water Conservation

Measures (Voluntary Water Conservation Practices and Best Management Practices). Stages 2 through 4 are moderate, medium, and severe water shortage conditions, respectively. Stage 5 is critical water shortage conditions and Stage 6 is emergency water shortage conditions.

Water Connection Fees

The City of Redding charges new developments a Water Connection Fee; the fee is $5,231 per household equivalent as of July 1, 2022 (Redding 2022a).

Existing Conditions

Water Providers

The City of Redding is served by three different water providers including the City of Redding Water Utility, which serves the largest portion of the Planning Area; Bella Vista Water District, which serves a portion in the northeast Planning Area in addition to the unincorporated area of Bella Vista; and Centerville Community Services District which provides water service to a southwestern portion of the Planning Area and the unincorporated Centerville community.

Redding Water Utility

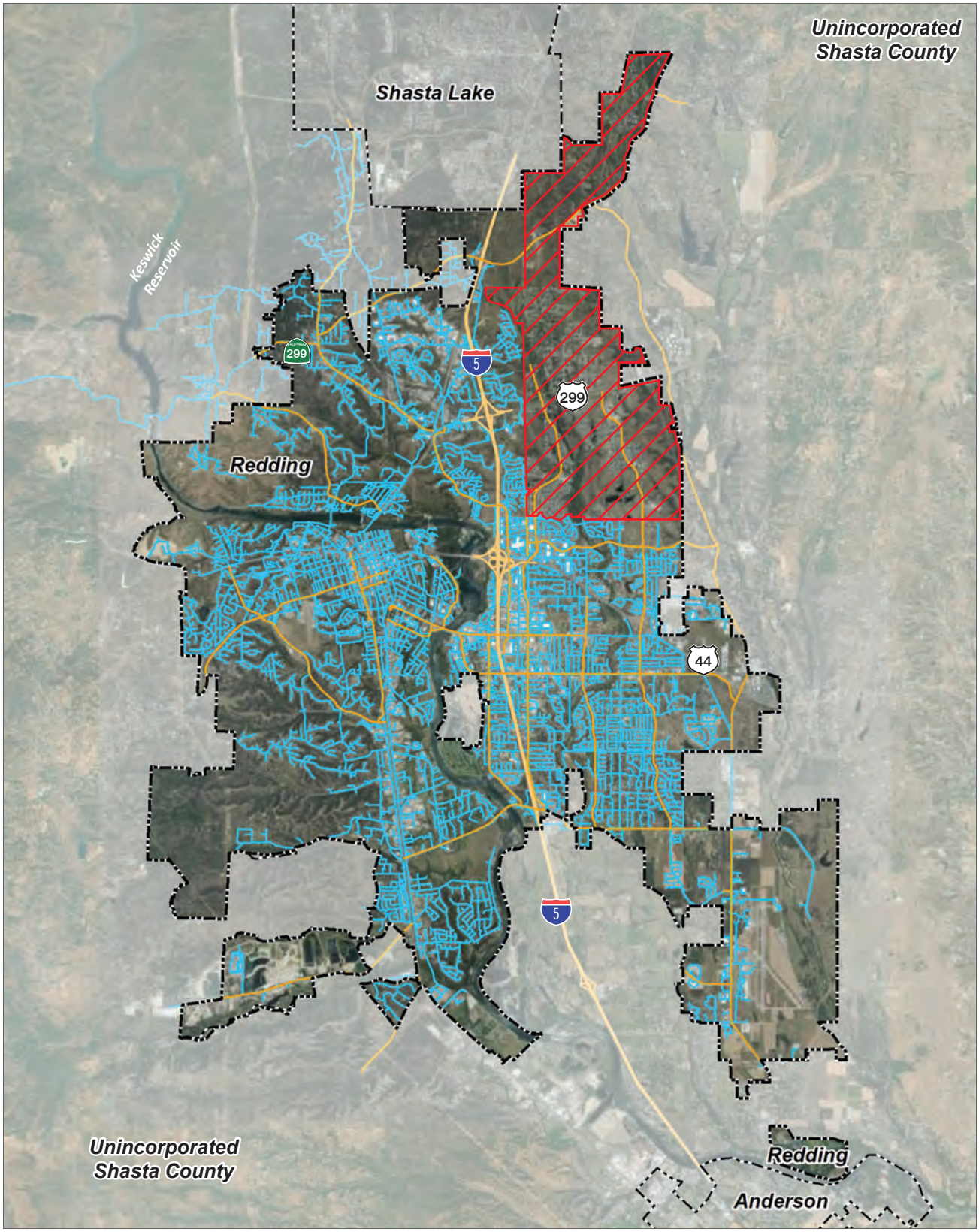
Water Sources

The City of Redding Water Utility has two major sources of drinking water: surface water and groundwater. The Sacramento River and Whiskeytown Lake provide the City's customers with 74 percent of the water they use, which is approximately 7.25 billion gallons per year (Redding 2022f). The remaining 26 percent, or 2.51 billion gallons per year, is groundwater which comes from 16 wells drilled into the Redding Groundwater Basin. Figure 5.17-2, *Water Pipes,* shows the existing water pipes in the city.

Surface Water

The City's main contract with the United States Bureau of Reclamation (USBR) allows a maximum annual diversion of 21,000 acre-feet (af) or 18.7 million gallons per day (mgd) (Redding 2022f). In addition, the City also has a smaller contract with the USBR for water to serve the Buckeye area–the northwest portion of the City's service area. This contract allows for a maximum annual diversion of 6,110,140 af or 5.4 mgd, from Whiskeytown Lake (Redding 2022f). All surface water is treated at one of two water treatment facilities owned by the City of Redding.

5.17 UTILITIES AND SERVICE SYSTEMS



Source: City of Reddding, 2021.

0 1.5
Scale (Miles)

City Boundaries
Water Pipes
Bella Vista Water District
(Data Unavailable)

Figure 5.17-2
Water Pipes

This page intentionally left blank.

Groundwater

The City's 16 wells are located in the southwest and southeast portion of the City's service area–the Cascade and Enterprise zones. There are four wells in the Cascade Zone and 12 wells in the Enterprise Zone. These wells pump water from an underground aquifer and are used primarily during summer when the demand is high. Water pumped from the groundwater basin is of good quality and only minimal disinfection and treatment is necessary before the water enters our distribution system (Redding 2022f).

Water Treatment Plants

The City has two water treatment plants—Foothill and Buckeye Water Treatment Plants. Foothill Water Treatment Plant has a treatment capacity of 24 mgd and Buckeye Water Treatment Plant has a treatment capacity of 14 mgd (Redding 2022f). The Foothill Water Treatment Plant is located at 3105 Foothill Boulevard. The Buckeye Water Treatment Plant is located at 11501 Benson Drive.

Projected Water Supply and Demand

Table 5.17-1, *City of Redding Projected Water Supply and Demand,* shows the projected water supply and demand in the City from 2025 through 2045. As shown in Table 5.17-1, the City's water supplies exceed the water demands from 2025 through 2045.

TABLE 5.17-1 CITY OF REDDING PROJECTED WATER SUPPLY AND DEMAND

Water Supply[1]

Water Supply	Additional Detail	2025	2030	2035	2040	2045
Purchased or Imported Water	USBR	8,844	8,844	8,844	8,844	8,844
Groundwater (not desalinated)		4,236	4,334	4,334	4,334	4,334
Transfers	ACID	1,303	1,303	1,303	1,303	1,303
Total Water Supply (mg)		**14,383**	**14,481**	**14,481**	**14,481**	**14,481**
Total Water Demand (mg)[2]		**8,797**	**8,797**	**9,181**	**9,382**	**9,587**
Difference		*5,586*	*5,684*	*5,300*	*5,099*	*4,894*

Source: Redding 2021 (Table 4-2 and Table 6-9 of 2020 UWMP).

Notes:

USBR = United States Bureau of Reclamation.

ACID = Anderson-Cottonwood Irrigation District.

Units of measure in the 2020 UWMP are million gallons (mg).

[1] Water supply assumes reasonably available volume.

[2] Recycled water demands are not included; water demand includes losses and sales/transfers/exchanges to other agencies.

Table 5.17-2, *Single Dry Year Supply and Demand (Redding Water Utility)*, and Table 5.17-3, *Multiple Dry Years Supply and Demand (Redding Water Utility),* show the City's water supplies and demands over the 2025-2045 period in single-dry-year and multiple dry years, respectively. As shown in Table 5.17-2 and Table 5.17-3, the City's water supplies exceed the demand.

TABLE 5.17-2 SINGLE DRY YEAR SUPPLY AND DEMAND (REDDING WATER UTILITY)

	2025	2030	2035	2040	2045
Supply Totals	14,057	14,357	14,357	14,357	14,357
Demand Totals	7,858	8,023	8,192	8,364	8,539
Difference	*6,199*	*6,334*	*6,165*	*5,993*	*5,818*

Source: Redding 2021 (Table 7-3).
Units of measure in the 2020 UWMP are million gallons (mg).

TABLE 5.17-3 MULTIPLE DRY YEARS SUPPLY AND DEMAND (REDDING WATER UTILITY)

		2025	2030	2035	2040	2045
First Year	Supply Totals	12,157	12,357	12,357	12,357	12,357
	Demand Totals	7,858	8,023	8,192	8,364	8,539
	Difference	*4,299*	*4,334*	*4,165*	*3,993*	*3,818*
Second Year	Supply Totals	12,157	12,357	12,357	12,357	12,357
	Demand Totals	7,858	8,023	8,192	8,364	8,539
	Difference	*4,299*	*4,334*	*4,165*	*3,993*	*3,818*
Third Year	Supply Totals	12,157	12,357	12,357	12,357	12,357
	Demand Totals	7,858	8,023	8,192	8,364	8,539
	Difference	*4,299*	*4,334*	*4,165*	*3,993*	*3,818*
Fourth Year	Supply Totals	12,157	12,357	12,357	12,357	12,357
	Demand Totals	7,858	8,023	8,192	8,364	8,539
	Difference	*4,299*	*4,334*	*4,165*	*3,993*	*3,818*
Fifth Year	Supply Totals	12,157	12,357	12,357	12,357	12,357
	Demand Totals	7,858	8,023	8,192	8,364	8,539
	Difference	*4,299*	*4,334*	*4,165*	*3,993*	*3,818*

Source: Redding 2021 (Table 7-4).
Units of measure in the 2020 UWMP are million gallons (mg).

Bella Vista Water District

Water Sources

Bella Vista Water District's (BVWD's) water supply is a combination of a long-term renewable water service contract with the United States Bureau of Reclamation, groundwater, and a long-term transfer agreement with the Anderson-Cottonwood Irrigation District. The District also occasionally enters into short-term water transfer agreements; typically, this only occurs during years when its Central Valley Project (CVP) contract supplies are severely reduced. The District also has interties with several local agencies in which emergency transfers of water can be made (BVWD 2021).

The primary water source for the Bella Vista Water District has historically been the CVP, but due to uncertain water supply and perhaps chronic shortages due to regulatory constraints that have revised CVP operations, reduced CVP yield, and supply allocation, the district is seeking alternative water sources to augment supply. BVWD's contract with Reclamation allows deliveries to the District of up to 24,578 acre-feet (AF) of water annually. Their contract Anderson-Cotton Irrigation District supplies an additional 1,536 AF of water annually. In total, a volume of 11,268 AF of water supplies was available to the District in 2020 (BVWD 2021).

Water Demand

The District's 2020 UWMP reported a total of 6,273 active connections for 2020. Water uses include agriculture, residential, rural, and public/institutional. Average water use between 2016 and 2020 was 9,762 AF and the District projects that demand will rise to 10,843 AF of water by 2045. The District's single year projected supply and demand comparison is shown in Table 5.17-4*, Single Dry Year Supply and Demand (Bella Vista Water District)*. Table 5.17-5, *Multiple Dry Years Supply and Demand (Bella Vista Water District),* shows the District's water supplies and demands over the 2025-2045 period in multiple dry years. As shown in Table 5.17-5, demand would exceed the District's water supply in years 3 and 5.

TABLE 5.17-4 SINGLE DRY YEAR SUPPLY AND DEMAND (BELLA VISTA WATER DISTRICT)

	2025	2030	2035	2040	2045
Supply Totals	10,309	11,309	11,309	11,309	11,309
Demand Totals	9,969	10,181	10,397	10,616	10,843
Difference	*340*	*1,128*	*912*	*693*	*466*

Source: BVWD 2021 (Table 7-5).
Units of measure in the 2020 UWMP are in acre-feet-year (AFY).

TABLE 5.17-5 MULTIPLE DRY YEARS SUPPLY AND DEMAND (BELLA VISTA WATER DISTRICT)

		2025	2030	2035	2040	2045
First Year	Supply Totals	22,020	22,020	22,020	22,020	22,020
	Demand Totals	9,969	10,181	10,397	10,616	10,843
	Difference	*12,051*	*11,839*	*11,623*	*11,404*	*11,177*

Second Year	Supply Totals	10,609	11,609	11,609	11,609	11,609
	Demand Totals	10,011	10,224	10,441	10,661	10,889
	Difference	*598*	*1,385*	*1,168*	*948*	*720*
Third Year	Supply Totals	8,459	9,359	9,359	9,359	9,359
	Demand Totals	10,053	10,267	10,485	10,705	10,934
	Difference	*(1,594)*	*(908)*	*(1,126)*	*(1,346)*	*(1,575)*
Fourth Year	Supply Totals	10,109	10,909	10,909	10,909	10,909
	Demand Totals	10,095	10,310	10,529	10,750	10,980
	Difference	*14*	*599*	*380*	*159*	*(71)*
Fifth Year	Supply Totals	7,486	8,286	8,286	8,286	8,286
	Demand Totals	10,138	10,353	10,573	10,795	11,026
	Difference	*(2,652)*	*(2,067)*	*(2,287)*	*(2,509)*	*(2,740)*

Source: BVWD 2021 (Table 7-6).
Units of measure in the 2020 UWMP are acre-feet-year (AFY).
Parentheses indicate negative values

Centerville Community Services District

The purpose of the Centerville Community Services District (CCSD), as set forth in the formation petition, is to supply the inhabitants with water for domestic, irrigation, sanitation, and industrial uses, recreation, as well as provide protection against fire. The District receives its water from Whiskeytown Lake through contracts with the US Bureau of Reclamation as part of the Central Valley Project system (CCSD 2023a). In March of 2023, the District announced that it had secured 100 percent of its water supplies after it was announced that the CVP had increased its water supply allocations (CCSD 2023b).

5.17.2.2 THRESHOLDS OF SIGNIFICANCE

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

UTIL-4 Require or result in the relocation or construction of new or expanded water facilities, the construction or relocation of which could cause significant environmental effects.

UTIL-5 Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years.

UTIL-6 In combination with past, present, and reasonably foreseeable projects, result in a cumulative impact with respect to water supply.

5.17.2.3 PROPOSED GENERAL PLAN POLICIES

The following goals and policies of the 2023-2045 General Plan Update are relevant to water supply and distribution systems.

Community Design and Development Element

- Policy CDD2E: Maintain adequate capacity for urban growth and coordinate with service providers to ensure to the extent feasible that all public utility facilities and services required by development are available. The City shall undertake assessments of its facilities and services as necessary and may help facilitate the creation of assessment districts, where appropriate. Where public facilities are to be provided to development by a separate water or community services district, the City shall work to coordinate planning activities with such agencies and obtain a "will-serve" letter, to ensure that the development in accordance with this General Plan can be accommodated.

Community Health, Wellness, and Environmental Justice Element

- Policy EJ5F: Increase citizen awareness and implementation of water and energy efficiency, weatherization, disaster risk reduction, climate change adaptation and mitigation, wildfire smoke protection, and safety from extreme heat through public engagement, incentives, and assistance with a special focus on underserved residents and areas with vulnerable populations.
- Policy EJ6A: Work proactively with residents as appropriate, so that existing and new public facilities, infrastructure, services are addressed in a manner that reflects the community's needs and shifting priorities of future demands in an equitable manner to the extent feasible.
- Policy EJ6B: Coordinate with water, sewer, waste management, electricity, police, and fire service providers to provide continuation of efficient and effective service, delivery, operations, and maintenance. Identify and prevent potential system vulnerabilities and coordinate with partnering

agencies that provide public facilities to establish response teams or contingency plans in case of failure or emergency.

Public Facilities and Services Element

- Policy PF1A: Require all new development, including major modifications to existing development, construct necessary on-site infrastructure to serve the project in accordance with the City standards.
- Policy PF1B: Consider requiring all new development, including major modifications to existing development, construct or provide a fair share contribution toward the construction of any off-site improvements necessary to offset project impacts and/or support the project ensuring that established service levels are maintained.
- Policy PF1C: When reviewing applications for land use designation changes (i.e. zone change, General Plan Amendment, Specific Plan), the City may require that a thorough analysis of the impacts of the proposed changes on the City's infrastructure system to be provided, and that mitigation be required as appropriate.
- Policy PF1D: Require that the provision of streets, sewer, electric, water, drainage, and other needed infrastructure be coordinated in a logical manner between adjacent developments so as to reduce design, construction and maintenance costs.
- Policy PF1E: Work towards requiring that infrastructure be designed and constructed to meet ultimate capacity needs, pursuant to a master plan, so as to avoid the need for expensive retrofitting to the extent feasible.
- Policy PF3D: Endeavor to implement the California Building Code and any local ordinances to protect life, control fire losses and fire protection costs through the use of automatic suppression systems. Adequate water supplies to construct fire suppression infrastructure as necessary should be available.
- Policy PF4A: Adhere to the following thresholds for water services and facilities to the extent feasible:
    - Program planned expansion activities, when demand at an existing treatment plant reaches within 10 percent plant capacity.
    - Reservoir capacity should be maintained at 20 percent of maximum day demand.
    - Develop additional water supplies from wells at least two years prior to a projected water deficit.
- Policy PF4B: Work to develop and maintain a regular program for systematically replacing deteriorated or deficient water pipes. Seek funding as appropriate.
- Policy PF4C: Consider requiring water distribution systems to be interconnected ("looped") wherever feasible to facilitate the reliable delivery of water anywhere in the City.

- Policy PF4D: Consider being actively involved in surface water adjudication which could have a negative impact on the City's water rights and/or allocation.
- Policy PF4E: As reasonably necessary update the City's Water Master Plan to reflect changes to the General Plan General Plan Diagram, water use pattern changes, supply, regulatory changes, or other circumstances.
- Policy PF4F: Strive to maintain, to the extent feasible adequate water supply during emergencies.
- Policy PF4G: Consider implementation of water conservation strategies and programs and provide incentives to developments that adopt efficiency measures for water use. Continue to require the use of water-efficient landscaping including drought-tolerant and native plants in all new development.
- Policy PF4H: Collaborate with appropriate agencies to provide education and outreach campaigns on the importance of water conservation where feasible.
- Policy PF14A: Through nexus studies determine the demand for new public facilities created by new development as compared to the demand for new facilities created by the community as a whole. Based on the results, determine the "fair share" of the financial contributions that are appropriate for both the community at large and new development.
- Policy PF14B: Update as necessary the ordinance for Development Impact Fees that obligates new development to pay its "fair share" of the cost to build needed public facility improvements.
- Policy PF14C: Where appropriate, distribute the responsibility to pay for new public facilities between existing and future development based on their respective demands on the system.
- Policy PF14D: Strive to identify and pursue alternative funding sources that can be used for capital improvement project construction, staffing and ongoing maintenance of public improvements. Expand the search for grant funding.
- Policy PF14E: As appropriate, request the preparation of a fiscal impact analysis for all specific plans or significant general plan land use amendments and annexations. The analysis will examine the fiscal impacts on the City and other service providers that result from large scale development. The fiscal analysis shall project a positive fiscal impact form new development or include mechanisms to fund projected fiscal deficits. Exceptions may be made when new development generates significant public benefits (e.g., low-income housing, primary-wage-earner employment) and when alternative sources of funding can be obtained to offset foregone revenues.

Public Safety Element

- Policy PS4H: Work with local community services districts (i.e. water districts) to ensure that district systems are developed, maintained, and monitored to provide minimum fire-flow, rates, and peak-load capacity for fire suppression.

- Policy PS4J: Utilize techniques, as determined appropriate by the Fire Marshal, to reduce fire damage in those areas with a high wildland fire potential.

5.17.2.4 IMPACT DISCUSSION

UTIL-3	Water supply and delivery systems are adequate to meet project requirements. [Thresholds U-4 and U-5]

Under the proposed project, existing land use classifications and configurations would remain unaffected. As such, implementation of the proposed project would not require or result in the construction of new water treatment facilities or expansion of existing facilities. As the City continues to grow, as described in Table 3-2 in Chapter 3, *Project Description,* the City would ensure that all new development is provided water services and all environmental impacts associated with the expansion or development of wastewater treatment facilities, if applicable, is evaluated. Planning and construction of new or expanded water facilities to accommodate new development is an on-going process for any area where future growth is anticipated.

As indicated in Table 5.18-1, Table 5.18-2, and Table 5.18-3, the City's water supplies would exceed the demand under normal, single-dry, and multiple dry years from 2025 through 2045. Therefore, the City's water supplies could accommodate the proposed project as no land use changes would occur. However, as noted above, Centerville CSD and BVWD, which serve portions of the Planning Area, are reliant on water supply from the Central Valley Project which has been experiencing chronic shortages due to the recent draught. BVWD noted in response to the NOP for the proposed project, that the District's water was severely constrained and that any potential development within the District must consider a source of water other than the District's CVP contract to be assured water. Centerville CSD serves a very limited portion of west Redding and did not indicate concerns with supplying water to new development within the City of Redding.

In correspondence with the City of Redding Public Work's Department, it was noted that the Department currently meets its water supply, treatment and distribution demands for its service area. The department notes that surface water supplies are adequate for the proposed project's planned horizon year. However, additional groundwater may be needed to increase water supply thus new groundwater wells and storage tank(s) are included in the Utility Master Plan. The department recommends continuing to conduct a Utility Master Plan update every 10 years to evaluate the distribution system and treatment facilities for future needs. In addition, the Department notes the importance of designing a rate structure and impact fee program to ensure sufficient revenue for future projects as growth occurs (Appendix 5.15-1). With respect to future water service for those areas of the City that are within the BVWD, City staff indicates that agreement(s) are currently being negotiated that would allow the City to provide groundwater to the District to offset new development as conditions require. Adequate system interties are available for this purpose.

The proposed 2023-2045 General Plan Update includes policies from the Public Facilities and Services Element that require that all new development to construct or provide a fair share contribution toward the

construction of any off-site improvements (Policies PF1A and PF1B); direct the City to program planned expansion activities, when demand at an existing treatment plant reaches within 10 percent plant capacity, maintain reservoir capacity at 20 percent of maximum day demand, and develop additional water supplies from wells at least two years prior to a projected water deficit (Policy PF4A); require the City to consider implementation of water conservation strategies and programs and provide incentives to developments that adopt efficiency measures for water use (Policy PF4G); and require the City to periodically update the City's Water Master Plan to reflect changes to the General Plan General Plan Diagram, water use pattern changes, supply, regulatory changes, or other circumstances (Policy PF4E).

Moreover, if water system improvements are needed, additional project-specific environmental analysis would be completed pursuant to CEQA. Therefore, the proposed project would have a less than significant impact on water supplies and facilities.

Level of Significance Before Mitigation: UTIL-3 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.17.2.5 CUMULATIVE IMPACTS

UTIL-4	Implementation of the proposed project would not, in combination with past, present, and reasonably foreseeable projects, result in a cumulative impact with respect to water supply [Threshold UTIL-6].

Overall, cumulative water demands would neither exceed planned levels of supply nor require an expansion of the water distribution system beyond what is currently planned in the City's 2020 UWMP. However, due to current shortages faced by BVWD and Centerville CSD, these districts may lack the capacity to meet future demand for development in the Planning Area that is in their service areas. Policies in the proposed General Plan such as the following will ensure that no development occurs unless and until water is available.

> CDD2C- Evaluate public-service impacts as part of environmental review for proposed development projects and require applicants to obtain "will-serve" letters from service providers prior to the approval of a discretionary permit or a building permit.
>
> CDD2E- Maintain adequate capacity for urban growth and coordinate with service providers to ensure to the extent feasible that all public utility facilities and services required by development are available. The City shall undertake assessments of its facilities and services as necessary and may help facilitate the creation of assessment districts, where appropriate. Where public facilities are to be provided to development by a separate water or community services district, the City

shall work to coordinate planning activities with such agencies and obtain a "will-serve" letter, to ensure that the development in accordance with this General Plan can be accommodated.

Water from surface water is regulated to a specific "place of use" that is difficult to modify. Groundwater is available in the region in sufficient quantities to meet the cumulative demand for the proposed General Plan, except for new development in the Centerville CSD and BVWD service areas. Additional policies, such as Policy PF4A that requires advance water planning, will encourage collaboration between water providers and the City. Because policies in the General Plan require a will serve letter for water from the City, Centerville CSD or BVWD, before development can be approved, and since the City has documented adequate surface water and groundwater to meet the needs of development shown in this General Plan, cumulative impacts with respect to water supply under the proposed project would be less than significant and no mitigation measures are required.

Level of Significance Before Mitigation: UTIL-4 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.17.3 STORMWATER SYSTEMS

5.17.3.1 ENVIRONMENTAL SETTING

Regulatory Framework

Federal Regulations

Clean Water Act

The Clean Water Act (CWA) establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. The basis of the CWA was enacted in 1948 and was called the Federal Water Pollution Control Act, but the Act was significantly reorganized and expanded in 1972. "Clean Water Act" because the Act's common name with amendments in 1972.

Under the CWA, the EPA has implemented pollution-control programs, such as setting wastewater standards for industry. EPA has also developed national water quality criteria recommendations for pollutants in surface waters.

The CWA made it unlawful to discharge any pollutants from a point source into navigable waters unless a permit was obtained.

National Pollutant Discharge Elimination System

The State Water Resources Control Board (SWRCB) regulates water quality in California to protect the environment and public health and to properly allocate water resources. One of the main ways that the CWA and SWRCB can ensure that stormwater will not contain pollutants is through the National Pollutant Discharge Elimination System (NPDES) permit. The NPDES regulates stormwater discharges from three main sources: Municipal Separate Storm Sewer Systems (MS4), construction activities, and industrial activities. All three sources require different NPDES permits to regulate and enforce mitigation measures within specific physical boundaries before stormwater is discharged to prevent harmful pollutants from running off into local, State, and Federal surface waters such as lakes, streams and rivers.

MS4 Permits

MS4 Permits are NPDES permits issued by the EPA, by way of the SWRCB, and authorize governmental entities to discharge stormwater collected by their storm sewer systems to waters of the United States.

Local Regulations

2000-2020 Redding General Plan

Public Facilities and Services Element

- Goal PF1: Ensure that adequate public services and facilities are available to support development in an efficient and orderly manner.
    - Policy PF1: Require that all new development, including major modifications to existing development, construct necessary on-site infrastructure to serve the project in accordance with City standards.
    - Policy PF1B: Require that all new development, including major modifications to existing development, construct or provide a fair share contribution toward the construction of any off-site improvements necessary to offset project impacts and/or support the project.
    - Policy PF1C: When reviewing applications for land use designation changes (i.e. zone change, General Plan Amendment, Specific Plan), conduct a thorough analysis of the impacts of the proposed changes on all aspects of the City's infrastructure system, and require mitigation as appropriate.
    - Policy PF1D: Require that the provision of streets, sewer, electric, water, drainage, and other needed infrastructure be coordinated in a logical manner between adjacent developments so as to reduce design, construction and maintenance costs.
    - Policy PF1E: Require that infrastructure be designed and constructed to meet ultimate capacity needs, pursuant to a master plan, so as to avoid the need for costly retrofitting.

- Policy PF1F: Utilize reimbursement agreements, where appropriate, when upgraded or oversized facilities are installed by an individual developer and the cost of the facilities exceeds the development's proportional share of responsibility.
- Policy PF1G: Direct growth toward areas which already have infrastructure capacity available by providing incentives for quality infill development.
- Policy PF1H: Encourage clustering of development to maximize the use and efficiency of infrastructure facilities.
- Policy PF1I: Regularly update and adopt the City's Capital Improvement Program (CIP) to prioritize funding for public works projects in accordance with the General Plan.
- Policy PF1J: Recognize the considerable public investment made in existing utility and street infrastructure by ensuring that funding for maintaining its integrity, reliability, and service levels is on par with investment in new facilities.

- Goal PF9: Avoid increases in existing 100-Year Flood Levels.
  - Policy PF9A: Establish the following thresholds for stormwater drainage facilities: < Design drainage facilities to convey a 100-year storm.
  - Until adequate regional stormwater facilities are in place, utilize a policy of "no net increase in runoff" for development projects in all drainage basins where existing development is within the 100-year floodplain.
  - Policy PF9B: Select and pursue the acquisition of sites considered appropriate for regional stormwater detention/retention facilities within the incorporated area.
  - Policy PF9C: Construct regional stormwater detention/retention basins at locations that will minimize current flooding risk.
  - Policy PF9D: Encourage Shasta County and the City of Shasta Lake to participate in the City's regional systems and/or develop a system of regional detention facilities that will complement the City's system.
  - Policy PF9E: Encourage project designs that minimize drainage concentrations and coverage by impermeable surfaces.
  - Policy PF9F: Maintain all drainage facilities, including detention basins and both natural and manmade channels, to ensure that their full carrying capacity is not impaired.

Redding Municipal Code

Chapter 14.18, Storm Drainage Utility, states that the purpose of the storm drainage utility division is to:

1. Provide for the effective management and financing of a storm drainage system within the City;

2. Provide a mechanism for mitigating the damaging effects of uncontrolled and unplanned stormwater runoff;
3. Improve the public health, safety, and welfare by providing for the safe and efficient capture and conveyance of stormwater runoff and the correction of stormwater problems;
4. Authorize the establishment and implementation of a master plan for storm drainage, including design, coordination, construction, management, operation, maintenance, inspection, and enforcement;
5. Establish reasonable storm drainage service changes based upon each property's contribution of stormwater runoff to the system and use and benefit of services and facilities; and
6. Encourage and facilitate urban water resources management techniques, including detention of stormwater runoff, minimization of the need to construct storm drains, and the enhancement of the environment.

The purpose of Chapter 14.19, Stormwater Quality Management and Discharge Control, is to protect and promote the health, safety, and general welfare of the City's citizens by controlling non-stormwater discharges to the City's stormwater conveyance system and by reducing pollutants in stormwater discharges to the maximum extent practicable. Chapter 14.19 is also intended to assist in the protection and enhancement of water quality of watercourses and water bodies in a manner pursuant to and consistent with the Federal Clean Water Act (33 U.S.C. §1251 et seq.) and Porter-Cologne Water Quality Control Act, and to provide the City with the legal authority to fully implement and enforce provisions set under the National Pollutant Discharge Elimination System General Permit No. CAS000004 for Stormwater Discharges from Small Municipal Storm Sewer Systems, Water Quality Order No. 2013-0001-DWQ.

City of Redding Stormwater Resource Plan

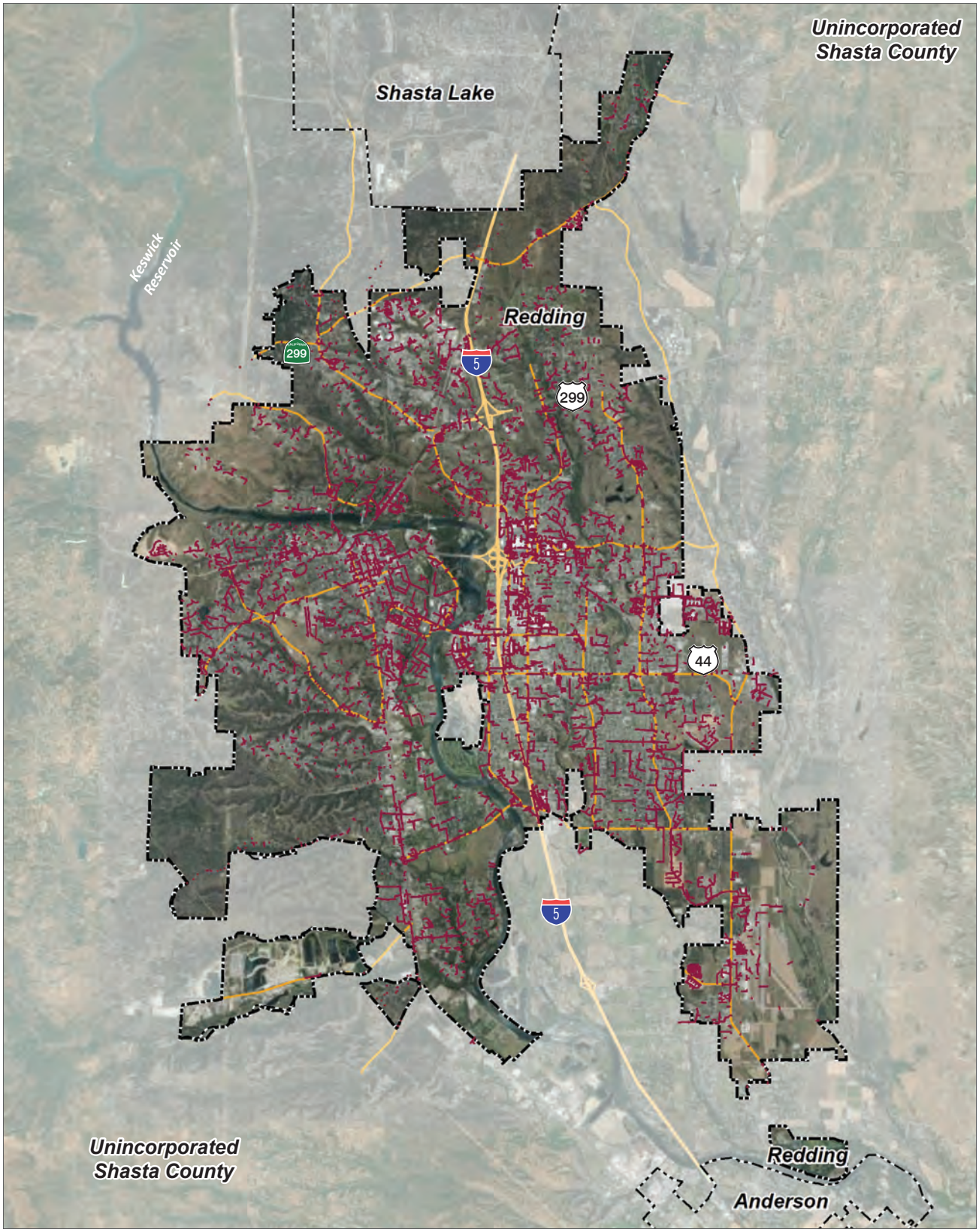
The Stormwater Resource Plan was developed for the City as a framework for ongoing identification and prioritization of stormwater and dry weather runoff capture projects that provide multiple benefits, including water quality, water supply, flood management, environmental, and community (Redding 2018).

Existing Conditions

The Storm Drain Utility is responsible for installing, monitoring, maintaining, and cleaning the storm drainage system of the City of Redding. The City of Redding storm drains are intended to collect and convey only uncontaminated storm water. Anything that is spilled, dumped, or deposited where it will be washing into the storm drain is prohibited (Redding 2022g). Figure 5.17-3, *Stormwater Pipes,* shows the existing stormwater pipes in the City.

This page intentionally left blank.

5.17 UTILITIES AND SERVICE SYSTEMS



Source: City of Reddding, 2022.

0 1.5
Scale (Miles)

City Boundaries
Stormwater Pipes

Figure 5.17-3
Stormwater Pipes

This page intentionally left blank.

5.17.3.2 THRESHOLDS OF SIGNIFICANCE

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

UTIL-7 Require or result in the relocation or construction of new or expanded stormwater facilities, the construction or relocation of which could cause significant environmental effects.

UTIL-8 In combination with past, present, and reasonably foreseeable projects, result in a cumulative impact with respect to stormwater facilities.

5.17.3.3 PROPOSED GENERAL PLAN POLICIES

The following goals and policies of the 2023-2045 General Plan Update are relevant to stormwater collection systems.

Community Design and Development Element

- Policy CDD5A: Consider the development of a stormwater detention master plan and development standards that would:
    - Identify adequate locations for feasible regional and neighborhood detention and related facilities, which also may consider the use of parks and public right-of-way for stormwater detention.
    - Ensure that public facilities and infrastructure are designed pursuant to approved State regulatory requirements.
    - Establish design and construction standards, landscape, and maintenance guidelines.
    - Identify opportunities for recreation as a combined use with detention facilities.
    - Facilitate ground water recharge.

Environmental Justice Element

- Policy EJ5F: Increase citizen awareness and implementation of water and energy efficiency, weatherization, disaster risk reduction, climate change adaptation and mitigation, wildfire smoke protection, and safety from extreme heat through public engagement, incentives, and assistance with a special focus on underserved residents and areas with vulnerable populations.
- Policy EJ6A: Work proactively with residents as appropriate, so that existing and new public facilities, infrastructure, services are addressed in a manner that reflects the community's needs and shifting priorities of future demands in an equitable manner, to the extent feasible.
- Policy EJ6B: Coordinate with water, sewer, waste management, electricity, police, and fire service providers to provide continuation of efficient and effective service, delivery, operations, and

maintenance. Identify and prevent potential system vulnerabilities and coordinate with partnering agencies that provide public facilities to establish response teams or contingency plans in case of failure or emergency.

Public Facilities and Services Element

- **Policy PF1A**: Require all new development, including major modifications to existing development, construct necessary on-site infrastructure to serve the project in accordance with the City standards.
- **Policy PF1B**: Consider requiring all new development, including major modifications to existing development, construct or provide a fair share contribution toward the construction of any off-site improvements necessary to offset project impacts and/or support the project ensuring that established service levels are maintained.
- **Policy PF1C:** When reviewing applications for land use designation changes (i.e. zone change, General Plan Amendment, Specific Plan), the City may require that a thorough analysis of the impacts of the proposed changes on all aspects of the City's infrastructure system, and require mitigation as appropriate.
- **Policy PF1D:** Require that the provision of streets, sewer, electric, water, drainage, and other needed infrastructure be coordinated in a logical manner between adjacent developments so as to reduce design, construction and maintenance costs.
- **Policy PF1E:** Work toward requiring that infrastructure be designed and constructed to meet ultimate capacity needs, pursuant to a master plan, so as to avoid the need for expensive retrofitting to the extent feasible.
- **Policy PF8A**: Adhere to the following thresholds for stormwater drainage facilities to the extent feasible:
    - Design drainage facilities to convey a 100-year storm.
    - Until adequate stormwater facilities are in place, utilize a policy of "no net increase in runoff" for development projects in all drainage basins.
- **Policy PF8B**: Work toward constructing stormwater detention/retention basins at strategic locations to minimize current flooding risk. Select and pursue the acquisition of sites considered appropriate for such facilities.
- **Policy PF8C**: Encourage Shasta County and the City of Shasta Lake to participate in the City's regional systems and/or develop a system of regional detention facilities that will complement the City’s system.
- **Policy PF8D**: Encourage project designs that minimize drainage concentrations and coverage by impermeable surfaces.

- Policy PF8E: As resources allow, maintain all drainage facilities, including detention basins and both natural and manmade channels, to ensure that their full carrying capacity is not impaired.
- Policy PF8F: Encourage the use of green infrastructure design and Low Impact Development techniques for stormwater facilities.
- Policy PF14A: Through nexus studies determine the demand for new public facilities created by new development as compared to the demand for new facilities created by the community as a whole. Based on the results, determine the "fair share" of the financial contributions that are appropriate for both the community at large and new development.
- Policy PF14B: Update as necessary the ordinance for Development Impact Fees that obligates new development to pay its "fair share" of the cost to build needed public facility improvements.
- Policy PF14C: Where appropriate, distribute the responsibility to pay for new public facilities between existing and future development based on their respective demands on the system.
- Policy PF14D: Strive to identify and pursue alternative funding sources that can be used for: capital improvement project construction, staffing and ongoing maintenance of public improvements. Expand the search for grant funding.
- Policy PF14E: As appropriate, request the preparation of a fiscal impact analysis for all specific plans or significant general plan land use amendments and annexations. The analysis will examine the fiscal impacts on the City and other service providers that result from large scale development. The fiscal analysis shall project a positive fiscal impact form new development or include mechanisms to fund projected fiscal deficits. Exceptions may be made when new development generates significant public benefits (e.g., low-income housing, primary-wage-earner employment) and when alternative sources of funding can be obtained to offset foregone revenues.

5.17.3.4 IMPACT DISCUSSION

UTIL-5	Existing and/or proposed storm drainage systems are adequate to serve the drainage requirements of the proposed project. [Threshold U-7]

Under the proposed project, existing land use classifications and configurations would remain unaffected. As such, implementation of the proposed project would not require or result in the construction of new storm drainage systems or expansion of existing systems. As the City continues to grow, as described in Table 3-3, in Chapter 3, *Project Description,* the City would ensure that all new development is within the capacity of the storm drainage system, and all environmental impacts associated with the expansion or development of storm drain systems, if applicable, is evaluated. Planning and construction of new or expanded storm drain systems to accommodate new development is an on-going process for any area where future growth is anticipated.

Compliance with Chapter 14.18, Storm Drainage Utility, and Chapter 14.19, Stormwater Quality Management and Discharge Control, of the Redding Municipal Code, would ensure that the City's storm drain system is adequate to capture stormwater and that the City's stormwater conveyance system would reduce pollutants in stormwater discharges. The City's Stormwater Resource Plan would provide ongoing identification and prioritization of stormwater capture projects which would ensure the City's storm drains are in adequate condition.

Additionally, the proposed General Plan Update includes the following policies from the Community Development and Design Element and Public Facilities and Services Element that would serve to minimize potential adverse impacts related to stormwater:

- Policy CDD5A: Consider the development of a stormwater detention master plan and development standards that would:
    - Identify adequate locations for feasible regional and neighborhood detention and related facilities, which also may consider the use of parks and public right-of-way for stormwater detention.
    - Ensure that public facilities and infrastructure are designed pursuant to approved State regulatory requirements.
    - Establish design and construction standards, landscape, and maintenance guidelines.
    - Identify opportunities for recreation as a combined use with detention facilities.
    - Facilitate ground water recharge.
- Policy PF1B: Consider requiring all new development, including major modifications to existing development, construct or provide a fair share contribution toward the construction of any off-site improvements necessary to offset project impacts and/or support the project ensuring that established service levels are maintained.
- Policy PF8A: Adhere to the following thresholds for stormwater drainage facilities to the extent feasible:
    - Design drainage facilities to convey a 100-year storm.
    - Until adequate stormwater facilities are in place, utilize a policy of "no net increase in runoff" for development projects in all drainage basins.
- Policy PF8B: Work toward constructing stormwater detention/retention basins at strategic locations to minimize current flooding risk. Select and pursue the acquisition of sites considered appropriate for such facilities.
- Policy PF8C: Encourage Shasta County and the City of Shasta Lake to participate in the City's regional systems and/or develop a system of regional detention facilities that will complement the City’s system.

- Policy PF8D: Encourage project designs that minimize drainage concentrations and coverage by impermeable surfaces.
- Policy PF8E: As resources allow, maintain all drainage facilities, including detention basins and both natural and manmade channels, to ensure that their full carrying capacity is not impaired.
- Policy PF8F: Encourage the use of green infrastructure design and Low Impact Development techniques for stormwater facilities.

Moreover, if storm drain improvements are needed, additional project-specific environmental analysis would be completed pursuant to CEQA.

Therefore, the proposed project would have a less than significant impact on storm drain facilities.

Level of Significance Before Mitigation: UTIL-5 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.17.3.5 CUMULATIVE IMPACTS

UTIL-6	Implementation of the proposed project would not, in combination with past, present, and reasonably foreseeable projects, result in a cumulative impact with respect to stormwater facilities [Threshold UTIL-8].

As discussed previously, development within the Planning Area would require conformance with State and local policies that would reduce hydrology and infrastructure construction impacts to less-than-significant levels. Any new development within the city would be subject on a project-by-project basis to independent project review as well as compliance with City policies and ordinances, design guidelines, zoning codes, and other applicable City requirements that reduce impacts related to hydrology and stormwater drainage facilities. More specifically, potential changes related to stormwater flows, drainage, impervious surfaces, and flooding would be minimized by the implementation of stormwater control measures, retention, infiltration, and LID measures, and review by the City's Public Works Department to integrate measures to reduce potential stormwater drainage and flooding impacts.

In combination with past, present, and reasonably foreseeable projects, proposed development and redevelopment within the EIR Study Area would not result in a cumulatively considerable impact to stormwater infrastructure and cumulative impacts would be less than significant and no mitigation.

Level of Significance Before Mitigation: UTIL-6 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.17.4 SOLID WASTE

5.17.4.1 ENVIRONMENTAL SETTING

Regulatory Framework

Federal Regulations

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA), an amendment to the Solid Waste Disposal Act of 1965, was enacted in 1976 to address the huge volumes of municipal and industrial solid waste generated nationwide. The RCRA gives the United States Environmental Protection Agency (EPA) the authority to control hazardous waste from "cradle to grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. The RCRA also sets forth a framework for the management of nonhazardous solid wastes.

The federal Hazardous and Solid Waste Amendments are the 1984 amendments to the RCRA that focused on waste minimization and phasing out land disposal of hazardous waste as well as corrective action for releases. Some of the other mandates of this law include increased enforcement authority for the EPA, more stringent hazardous waste management standards, and a comprehensive underground storage tank program. Amendments to the RCRA in 1986 enabled the EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances.

State Regulations

California Integrated Waste Management Act

The California Integrated Waste Management Act of 1989 (Public Resources Code Sections 42900-42927) requires all California cities and counties to reduce the volume of waste deposited in landfills by 50 percent by the year 2000 and continue to remain at 50 percent or higher for each subsequent year. The purpose of this Act is to reduce, recycle, and reuse solid waste generated in the state to the maximum extent feasible.

The Act requires each California city and county to prepare, adopt, and submit to the California Department of Resources Recycling and Recovery (CalRecycle) a source reduction and recycling element (SRRE) that demonstrates how the jurisdiction will meet the Act's mandated diversion goals. Each jurisdiction's SRRE must include specific components, as defined in Public Resources Code Sections 41003 and 41303. In addition, the SRRE must include a program for management of solid waste generated in the jurisdiction that

is consistent with the following hierarchy: (1) source reduction, (2) recycling and composting, and (3) environmentally safe transportation and land disposal. Included in this hierarchy is the requirement to emphasize and maximize the use of all feasible source reduction, recycling, and composting options to reduce the amount of solid waste that must be disposed of by transformation and land disposal.

California Solid Waste Reuse and Recycling Access Act of 1991

This Act was passed by the State legislature and instructs the California Integrated Waste Management Board (now known as "CalRecycle") to draft a "model ordinance" for the disposal of construction waste associated with development projects. This Act also requires local agencies to ensure that development projects have adequate areas for the collection and loading of recyclable materials.

Assembly Bill 341- Commercial Recycling Act

In 2011, AB 341 (Chapter 476, Statutes of 2011) was passed that sets a State policy goal of not less than 75 percent of solid waste that is generated to be source reduced, recycled, or composted by the year 2020. CalRecycle was required to submit a report to the legislature by January 1, 2014, outlining the strategy that will be used to achieve this policy goal. This Bill affects local governments in that each jurisdiction is required to implement a commercial solid waste recycling program that consists of education, outreach, and monitoring of businesses. An annual report of the progress of such efforts is required by law. CalRecycle is responsible for reviewing each jurisdiction's commercial recycling program.

Assembly Bill 1826- Mandatory Organics Recycling Act

Assembly Bill 1826 (AB 1826; California Public Resources Code Sections 42649.8 et seq.) requires recycling of organic matter by businesses, and multifamily residences of five or more units, generating such wastes in amounts over certain thresholds. Organic waste means food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed in with food waste. Multifamily residences are not required to have a food waste diversion program. The City has implemented SB 1826 except for the food waste portion. The City has performed outreach and education, however the process and solution is an ongoing effort. Recycling and organics service recovery services are available. Food waste will be added into the City's processes as a recyclable organic Summer/Fall of 2023.

Senate Bill 1383- California's Short-Lived Climate Pollutant Reduction Act

California's Short-Lived Climate Pollutant Reduction law, often called SB 1383, establishes methane reduction targets for California. SB 1383 regulations went into effect on January 1, 2022. The regulations aim to divert 50% of organic waste from landfills below 2014 levels by 2020 and 75% by 2025. CalRecycle is implementing the regulations and has established an additional target that not less than 20% of currently disposed edible food is recovered for human consumption by 2025. SB 1383 also requires that jurisdictions conduct education and outreach on organics recycling to all residents, businesses (including those that

generate edible food that can be donated), haulers, solid waste facilities, local food banks, and other food recovery organizations. Redding is on track to be in full compliance of SB 1383 by spring of 2024.

CALGreen Building Code

The purpose of CALGreen is to improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices related to materials conservation and resource efficiency. The provisions of this Code apply to the planning, design, operation, construction, use, and occupancy of every newly constructed building or structure, unless otherwise indicated in this Code, through the State of California.

Section 5.408, Construction Waste Reduction Disposal and Recycling, mandates that, in the absence of a more stringent local ordinance, a minimum of 50 percent of non-hazardous construction and demolition debris must be recycled or salvaged. CalGreen requires an applicant to have a Waste Management Plan, for onsite sorting or construction debris, which is submitted to the City for approval.

The Waste Management Plan does the following:

- Identifies the materials to be diverted from disposal by recycling, reuse on a project or salvage for future use or sale.
- Specifies if materials will be sorted on-site or mixed for transportation to a diversion facility.
- Identifies the diversion facilities where the material collected can be taken.
- Identifies construction methods employed to reduce the amount of waste generated.
- Specifies that the amount of materials diverted shall be calculated by weight or volume, but not by both.

Local Regulations

2000-2020 Redding General Plan

- **Goal PF8:** Provide for efficient collection and disposal of solid waste while maintaining an adequate waste disposal capacity.
    - **Policy PF8A**: Establish the following thresholds for solid waste collection and disposal facilities:
        - Pursue expansion of the City's solid waste transfer station when collection activities approach 85 percent of facility capacity or additional space is needed to accommodate desired separation and recycling activities.
    - **Policy PF8B**: Continue to require solid waste collection service for residential, commercial and industrial uses within the incorporated area.

- Policy PF8C: Continue to implement the City's Source Reduction and Recycling Element and expand identified programs, when feasible, in order to meet or exceed state mandated waste diversion goals.
- Policy PF8D: Promote recycling and other measures designed to reduce the generation of solid waste.
- Policy PF8E: Continue to work cooperatively with Shasta County to address regional issues related to solid waste disposal and waste reduction.

Redding Municipal Code

City of Redding ordinances governing storage, collection, and disposal of solid waste are set forth in Municipal Code Chapter 9.28, Solid Waste and Recycling. Requirements for enclosures for trash and recyclable materials are specified in Section 18.40.120, Trash Container Enclosures.

Existing Conditions

The City of Redding's Solid Waste Utility has been servicing Redding households and businesses since 1944 offering residential and commercial collection services (Redding 2022h). The City of Redding's Transfer Station and Material Recovery Facility (MRF) is located at 2255 Abernathy Lane in the City of Redding. The Redding Transfer Station and MRF has a maximum permitted throughput of 650 tons per day (CalRecycle 2019a).

All garbage is transferred to the West Central Landfill for disposal (Redding 2022h). The Solid Waste Utility operates the West Central Landfill on 14095 Clear Creek Road in Igo, California. West Central Landfill has an operational cease date of March 1, 2032, remaining capacity of 6,589,044 cubic yards, and a maximum daily throughput of 700 tons per day (CalRecycle 2019b).

5.17.4.2 THRESHOLDS OF SIGNIFICANCE

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

UTIL-9 Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.

UTIL-10 Comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

UTIL-11 In combination with past, present, and reasonably foreseeable projects, result in a cumulative impact with respect to solid waste facilities.

5.17.4.3 PROPOSED GENERAL PLAN POLICIES

The following policies of the 2023-2045 General Plan Update are relevant to solid waste collection.

Public Facilities and Services Element

- Policy PF1A: Require that all new development, including major modifications to existing development, construct necessary on-site infrastructure to serve the project in accordance with the City standards.
- Policy PF1B: Consider requiring all new development, including major modifications to existing development, construct or provide a fair share contribution toward the construction of any off-site improvements necessary to offset project impacts and/or support the project ensuring that established service levels are maintained.
- Policy PF1C: When reviewing applications for land use designation changes (i.e. zone change, General Plan Amendment, Specific Plan), the City may require that a thorough analysis of the impacts of the proposed changes on the City's infrastructure system be provided and that mitigation be required as appropriate.
- Policy PF1D: Require that the provision of streets, sewer, electric, water, drainage, and other needed infrastructure be coordinated in a logical manner between adjacent developments so as to reduce design, construction and maintenance costs.
- Policy PF1E: Work toward requiring that infrastructure be designed and constructed to meet ultimate capacity needs, pursuant to a master plan, so as to avoid the need for expensive retrofitting to the extent feasible.
- Policy PF7A: Adhere to the following thresholds for solid waste collection and disposal facilities to the extent feasible:
    - Pursue expansion of the City's solid waste transfer station when collection activities approach 85 percent of facility capacity or additional space is needed to accommodate desired separation and recycling activities.
- Policy PF7B: Continue to require solid waste collection service for residential, commercial and industrial uses within the incorporated area.
- Policy PF7C: Continue to implement the City's Source Reduction and Recycling Element and expand identified programs, when feasible, in order to meet or exceed state mandated waste diversion goals. Provide outreach and education to various customer bases to encourage participation in recycling and diversion programs.
- Policy PF7D: Strive to achieve zero waste to landfills through reuse, reduce and recycle strategies and/ or conversion technologies as appropriate. Collaborate with agencies to educate residents on the benefits of recycling and reducing solid waste.

- Policy PF7E: Continue to work cooperatively with Shasta County to address regional issues related to solid waste disposal and waste reduction.
- Policy PF7F: Strive to reduce the use of non-renewable, disposable, or toxic products in City operations.
- Policy PF7G: Collaborate with agencies to establish food recovery or donation services to reduce food waste in the City as appropriate. Explore recovery opportunities through composting or by disposition of organic waste at biofuel facilities.
- Policy PF7H: Work to develop and implement as funding allows, the use of organic waste for renewable energy generation through gasification, anaerobic digestion or similar methods.

5.17.4.4 IMPACT DISCUSSION

UTIL-7	Existing and/or proposed facilities would be able to accommodate project-generated solid waste. [Threshold U-9]

Solid waste generated under the proposed project would be disposed of at West Central Landfill. Under the proposed project, existing land use classifications and configurations would remain unaffected. Additionally, during construction, future development projects would comply with CALGreen requirements, specifically recycling and/or salvaging for reuse a minimum of 65 percent of nonhazardous construction and demolition waste generated during most "new construction" projects. Section 74-04.006, Amendments to CalGreen Building Standards Code, amends Section 5.408.1, Construction Waste Management, to include 2019 CalGreen requirements.

In correspondence with the City of Redding Public Work's Department, it was noted that future development facilities by the proposed project would require additional facilities and infrastructure to meet service demands. The Department states that elements in the Facility Expansion Plan would need to be built to increase capacity; the Materials Recovery Facility would need to be expanded to handle the increased volume and food waste processing equipment needed; and new truck parking and container storage on the West side of Abernathy would need to be built (Appendix 5.15-1).

The proposed Public Facilities and Services Element contains policies that require local planning and development decisions to consider impacts related solid waste and solid waste facilities. The following General Plan policies would serve to minimize potential adverse impacts related to solid waste:

- Policy PF1A: Require that all new development, including major modifications to existing development, construct necessary on-site infrastructure to serve the project in accordance with the City standards.
- Policy PF1B: Consider requiring all new development, including major modifications to existing development, construct or provide a fair share contribution toward the construction of any off-site

improvements necessary to offset project impacts and/or support the project ensuring that established service levels are maintained.

- Policy PF1C: When reviewing applications for land use designation changes (i.e. zone change, General Plan Amendment, Specific Plan), the City may require that a thorough analysis of the impacts of the proposed changes on the City's infrastructure system be provided and that mitigation be required as appropriate.
- Policy PF1D: Require that the provision of streets, sewer, electric, water, drainage, and other needed infrastructure be coordinated in a logical manner between adjacent developments so as to reduce design, construction and maintenance costs.
- Policy PF1E: Work toward requiring that infrastructure be designed and constructed to meet ultimate capacity needs, pursuant to a master plan, so as to avoid the need for expensive retrofitting to the extent feasible.
- Policy PF7A: Adhere to the following thresholds for solid waste collection and disposal facilities to the extent feasible:
    - Pursue expansion of the City's solid waste transfer station when collection activities approach 85 percent of facility capacity or additional space is needed to accommodate desired separation and recycling activities.

- Policy PF7B: Continue to require solid waste collection service for residential, commercial and industrial uses within the incorporated area.
- Policy PF7C: Continue to implement the City's Source Reduction and Recycling Element and expand identified programs, when feasible, in order to meet or exceed state mandated waste diversion goals. Provide outreach and education to various customer bases to encourage participation in recycling and diversion programs.
- Policy PF7D: Strive to achieve zero waste to landfills through reuse, reduce and recycle strategies and/ or conversion technologies as appropriate. Collaborate with agencies to educate residents on the benefits of recycling and reducing solid waste.
- Policy PF7E: Continue to work cooperatively with Shasta County to address regional issues related to solid waste disposal and waste reduction.
- Policy PF7F: Strive to reduce the use of non-renewable, disposable, or toxic products in City operations.
- Policy PF7G: Collaborate with agencies to establish food recovery or donation services to reduce food waste in the City as appropriate. Explore recovery opportunities through composting or by disposition of organic waste at biofuel facilities.
- Policy PF7H: Work to develop and implement as funding allows, the use of organic waste for renewable energy generation through gasification, anaerobic digestion or similar methods.

All new development proposed under the proposed project, such as the addition or expansion of solid waste facilities, if needed, would be subject to subsequent project-level CEQA review. Construction activities would be required to comply with all federal, state, and local management and reduction statutes and regulations related to solid waste. Therefore, impacts would be less than significant.

Level of Significance Before Mitigation: UTIL-7 would be less than significant.

Mitigation Measures

No mitigation measures are required.

UTIL-8	The proposed project would comply with federal, state, and local statutes and regulations related to solid waste. [Threshold UTIL-10]

The proposed project would comply with the CALGreen Building Code Standards, which requires that at least 65 percent of nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse. Furthermore, the proposed project would also comply with the requirements of AB 341 that mandates recycling for commercial land uses. Additionally, any organic waste generated in amounts over a certain threshold would be recycled in accordance with AB 1826. In addition SB 1383 requires every jurisdiction to provide organic waste collection services to all residents and businesses. The regulations aims to divert 75 percent of organic waste from landfills below 2014 levels by 20205. Compliance with this statue would reduce organic waste.

Therefore, the proposed project would comply with all applicable federal, State, and local solid waste regulations and impacts would be less than significant.

Level of Significance Before Mitigation: UTIL-8 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.17.4.5 CUMULATIVE IMPACTS

UTIL-9	Implementation of the proposed project would not, in combination with past, present, and reasonably foreseeable projects, result in a cumulative impact with respect to solid waste facilities [Threshold UTIL-11].

Growth within the Planning Area would contribute to an increase in the need for solid waste disposal service. As discussed above, the West Central Landfill currently has about a remaining capacity of 6,589,044

cubic yards. As a result, it can be concluded that there would be adequate capacity to support City increases in population and surrounding County population. In addition, the 2023-2045 General Plan includes several policies that prioritize zero-waste efforts and establish thresholds for waste collection and disposal facilities. Given the long-term remaining capacity of the West Central Landfill and Redding Solid Waste Transfer facility and priority for waste generated in Redding, the 2023-2045 General Plan would have a less than significant cumulative impact on solid waste.

Level of Significance Before Mitigation: UTIL-9 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.17.5 REFERENCES

Bella Vista Water District (BVWD). 2021, June. Urban Water Management Plan 2020 Update. https://bvwd.org/documents/503/BVWD_2020_UWMP_Final_2021-06-17.pdf

California Department of Resources Recycling and Recovery (CalRecycle). 2019a. SWIS Facility/Site Activity Details: City of Redding Transfer Station/MRF (45-AA-0059). https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/1059?siteID=3466

_____. 2019b. SWIS Facility/Site Activity Details: West Central Landfill (45-AA-0043). https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/1056?siteID=3463

Centerville Community Services District (CCSD). 2023a, May 7. "About Us". https://www.centervillecsd.org/about-us

_____. 2023b, March 28. "Centerville CSD now has 100% of its Water Supplies". https://www.centervillecsd.org/news-detail?item_id=27580

Redding, City of. 2018, October. City of Redding Stormwater Resource Plan. https://www.cityofredding.org/home/showpublisheddocument/20300/636772637292500000

_____. 2021, November. City of Redding 2020 Urban Water Management Plan. https://www.cityofredding.org/home/showpublisheddocument/26706/637752447877530000

_____. 2022a, July 1. 2022 Municipal Utilities Fee Schedule. https://www.cityofredding.org/home/showpublisheddocument/11228/637920977903470000

_____. 2022b, July. City of Redding Wastewater Utility Master Plan. https://www.cityofredding.org/home/showpublisheddocument/28362

_____. 2022c (accessed). Clear Creek Wastewater Treatment Plant. https://www.cityofredding.org/departments/public-works/public-works-utilities/wastewater-utility/clear-creek-wwtp

_____. 2022d (accessed). Stillwater Wastewater Treatment Plant. https://www.cityofredding.org/departments/public-works/public-works-utilities/wastewater-utility/stillwater-wwtp

_____. 2022e (accessed). Wastewater Collection. https://www.cityofredding.org/departments/public-works/public-works-utilities/wastewater-utility/collections

_____. 2022f (accessed). Our Water Supply. https://www.cityofredding.org/departments/public-works/public-works-utilities/water-utility/water-supply

_____. 2022g (accessed). Storm Drain Utility. https://www.cityofredding.org/departments/public-works/public-works-utilities/storm-drain-utility

_____. 2022h (accessed). Solid Waste Utility. https://www.cityofredding.org/departments/solid-waste

5.18 WILDFIRE

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential for implementation of the Redding General Plan Update to exacerbate wildfire risk or result in exposure of people or structures to significant wildfire risks in the city, its sphere of influence (SOI), and proposed Planning Area. Cumulative impacts related to wildfire are based on regional wildfire hazards in the northern California region associated with proximity to wildlands and are based on Fire Hazard Severity Zones (FHSZ) mapped by the California Department of Forestry and Fire Protection (CAL FIRE).

5.18.1 ENVIRONMENTAL SETTING

5.18.1.1 REGULATORY FRAMEWORK

Federal Regulations

Healthy Forests Restoration Act

The Healthy Forests Restoration Act (US Code Title 16, Chapter 84, Section 6501) was approved on December 3, 2003, to reduce wildfire risk to communities, municipal water supplies, and at-risk federal lands expediting projects designed to reduce hazardous fuels. This act provides regulations for the protection of watersheds, forests, and rangelands, such as the land surrounding Redding, from catastrophic wildfires across the landscape (Federal Register 2001). Measures include improving systems to detect insect and disease infestations in hardwood forests; providing forestry assistance to state, private, and tribal landowners; facilitating research on large-scale treatments to reduce pest infestations; and entering into contracts with private landowners to manage their forests.

National Fire Protection Association Standards

National Fire Protection Association (NFPA) codes, standards, recommended practices, and guides are developed through a consensus standards development process approved by the American National Standards Institute. NFPA standards are recommended (advisory) guidelines in fire protection but are not laws or "codes" unless adopted or referenced as such by the California Fire Code or local fire agency. Specific standards applicable to wildland fire hazards include, but are not limited to:

- NFPA 1141, Fire Protection Infrastructure for Land Development in Wildlands
- NFPA 1142, Water Supplies for Suburban and Rural Fire Fighting
- NFPA 1143, Wildland Fire Management
- NFPA 1144, Reducing Structure Ignition Hazards from Wildland Fire
- NFPA 1710, Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations

State Regulations

California Department of Forestry and Fire Protection

The California Department of Forestry and Fire Protection (CAL FIRE) is dedicated to the fire protection and stewardship of over 31 million acres of California's wildlands. CAL FIRE provides fire assessment and firefighting services for lands within State Responsibility Areas (SRAs), conducts educational and training programs, provides fire planning guidance and mapping, and reviews General Plan Safety Elements to ensure compliance with state fire safety requirements.

The Board of Forestry and Fire Protection is a government-appointed approval body within CAL FIRE. It is responsible for developing the general forest policy of the State, for determining the guidance policies of CAL FIRE, and for representing the State's interest in federal forestland in California. The Board of Forestry and Fire Protection also promulgates regulations and approves General Plan Safety Elements that are adopted by local governments for compliance with State statutes.

The California Office of the State Fire Marshal supports the mission of CAL FIRE by focusing on fire prevention. These responsibilities include regulating buildings in which people live, congregate, or are confined; controlling substances and products which may, in and of themselves, or by their misuse, cause injuries, death, and destruction by fire; providing statewide direction for fire prevention within wildland areas; regulating hazardous liquid pipelines; developing and renewing regulations and building standards; and providing training and education in fire protection methods and responsibilities. These are accomplished through major programs, including engineering, education, enforcement, and support from the Board of Forestry and Fire Protection. For jurisdictions within SRAs or Very High Fire Hazard Severity Zones, the Land Use Planning Program division of the Office of State Fire Marshal reviews Safety Elements during the update process to ensure consistency with California Government Code, Section 65302(g)(3).

Together, the Board of Forestry and Fire Protection, Office of State Fire Marshal, and CAL FIRE protect and enhance the forest resources of all wildland areas of California that are not under federal jurisdiction. The CAL FIRE Land Use Planning Program and the Resource Protection Committee of the California Board of Forestry and Fire Protection reviewed the Redding Public Health and Safety Element. The Redding Fire Department has a mutual aid agreement with CAL FIRE during the wildland fire season for wildland and structure fires within a one-mile fringe area surrounding the City.

Fire Hazard Severity Zones and Responsibility Areas

CAL FIRE designates Fire Hazard Severity Zones as authorized under California Government Code Sections 51175 et seq. CAL FIRE considers many factors when designating fire severity zones, including fire history, existing and potential vegetation fuel, flame length, blowing embers, terrain, and weather patterns for the area. CAL FIRE designates Fire Hazard Severity Zones within three types of areas depending on what level of government is financially responsible for fire protection:

- LRA – Local Responsibility Area: Incorporated communities are financially responsible for wildfire protection. There is one severity zone in the LRA, which is the Very High Fire Hazard Severity Zone.
- SRA – State Responsibility Area: CAL FIRE and contracted counties are financially responsible for wildfire protection. There are three hazard zones in SRAs: moderate, high, and very high.
- FRA – Federal Responsibility Area: Federal agencies, such as the USFS, National Park Service, BLM, United States Department of Defense, United States Fish and Wildlife Service, and Department of the Interior are responsible for wildfire protection.

2018 Strategic Fire Plan for California

CAL FIRE produced the 2018 Strategic Fire Plan for California, which contains goals, objectives, and policies to prepare for and mitigate the effects of fire on California's natural and built environments (CAL FIRE 2018). The 2018 Strategic Fire Plan for California focuses on fire prevention and suppression activities to protect lives, property, and ecosystems, in addition to providing natural resource management to maintain state forests as a resilient carbon sink to meet California's climate change goals. A key component of the 2018 Strategic Fire Plan for California is the collaboration between communities to ensure fire suppression and natural resource management is successful (CAL FIRE 2018).

2021 California's Wildfire and Forest Resilience Action Plan

The Governor's Forest Management Task Force developed the California's Wildfire and Forest Resilience Action Plan, which is a framework for establishing healthy and resilient forests that can withstand and adapt to wildfire, drought, and climate change. This plan accelerates efforts to restore the health and resilience of California's forests, grasslands, and natural places; improves the fire safety of communities; and sustains the economic vitality of rural forested areas. CAL FIRE, in partnership with the USFS, intends to scale up forest thinning and prescribed fire, integrate climate adaptation into the statewide network of regional forest and community fire resilience plans, improve the electricity grid resilience, and promote sustainable land use.

State Responsibility Area and Very High Fire Hazard Severity Zone Fire-Safe Regulations

California Code of Regulations Title 14, Division 1.5, Chapter 7, Subchapter 2, SRA/VHFHSZ Fire Safe Regulations, establishes minimum wildfire protection standards for construction and development within the SRA and Very High Fire Hazard Severity Zone. These standards include basic emergency access and perimeter wildfire protection measures, signing and building numbering, private water supply resources for emergency fire use, and vegetation modification. These regulations apply to all residential, commercial, and industrial buildings within the SRA, the siting of new mobile homes, all tentative and parcel maps, and applications for building permits approved before 1991 where these standards were not proposed. Fire Safe Regulations also include a minimum setback of 30 feet for all buildings from property lines and/or the center of a road. Section 1273.08, Dead-End Roads, of these standards provide regulations for the maximum lengths of single-access roadways requiring the following:

- Parcels zoned for less than 1 acre: 800 feet
- Parcels zoned for 1 to 4.99 acres: 1,320 feet
- Parcels zoned for 5 to 19.99 acres: 2,640 feet
- Parcels zoned for 20 acres or larger: 5,280 feet

Fire Safe Regulations, Section 1299.03, Fire Hazard Reduction Around Buildings and Structure Requirements, provides defensible space requirements for areas within 30 feet of a structure (Zone 1) and between 30 and 100 feet from a structure (Zone 2). In Zone 1, all dead and dying plants are required to be removed and any flammable vegetation that could catch fire must be removed. In Zone 2, horizontal and vertical spacing among shrubs and trees must be created and maintained.

Public Resources Code Section 4291

Public Resources Code Section 4291, Mountainous, Forest-, Brush- and Grass-Covered Lands, is intended for any person who owns, leases, controls, operates, or maintains a building or structure in a mountainous area, forest-covered lands, shrub-covered lands, grass-covered lands, or land that is covered with flammable material, regardless of whether the property is within an SRA or Very High Fire Hazard Severity Zone. This section requires defensible space to be maintained within 100 feet from each side of a structure. An ember-resistant zone is also required within 5 feet of a structure and more intense fuel reduction is required between 5 and 30 feet of a structure.

California Building Standards Code

The California Buildings Standards Code (California Code of Regulations Title 24) provides 12 different codes for construction and buildings in California. This code is updated every three years, with the most recent version effective as of January 1, 2023.

Building Design Standards

The California Building Code (CBC), Part 2 of 24 California Code of Regulations, identifies building design standards, including those for fire safety. It is effective statewide, but a local jurisdiction may adopt more restrictive standards based on local conditions under specific amendment rules prescribed by the State Building Standards Commission. Commercial and residential buildings are plan checked by local city and county building officials for compliance with the CBC and any applicable local edits. Typical fire safety requirements of the CBC include the installation of sprinklers in buildings and other facilities; the establishment of fire-resistance standards for fire doors, building materials, and particular types of construction in high fire hazard severity zones; requirements for smoke-detection systems; exiting requirements; and the clearance of debris.

Materials and Methods for Exterior Wildfire Exposure

Chapter 7A of the CBC, Materials and Methods for Exterior Wildfire Exposure, prescribes building materials and construction methods for new buildings in a Fire Hazard Severity Zone or Wildland Interface Fire Area. Chapter 7A contains requirements for roofing; attic ventilation; exterior walls; exterior windows and glazing; exterior doors; decking; protection of underfloor, appendages, and floor projections; and ancillary structures. Other requirements include vegetation management compliance, as prescribed in California Fire Code Section 4906 and Public Resources Code Section 4291.

California Fire Code

The California Fire Code is a series of building, property, and lifeline codes in the California Code of Regulations, Title 24, Chapter 9. The California Fire Code contains fire-safety-related building standards, such as construction standards, vehicular and emergency access, fire hydrants and fire flow, and sprinkler requirements. Specific chapters relevant to wildfire include Chapter 49, Requirements for Wildland-Urban Interface, and Chapter 7A of the California Building Code, Materials and Construction Methods for Exterior Wildfire Exposure.

Wildland-Urban Interface Areas

Chapter 49 of the California Fire Code, Requirements for Wildland Urban Interface Fire Areas, applies to any geographical area identified as a Fire Hazard Severity Zone by CAL FIRE. This section defines Fire Hazard Severity Zones and connects to the SRA Fire Safe Regulation requirements for defensible space, as well as parallels requirements for wildfire protection, buildings construction, and hazardous vegetation fuel management in other sections of the California Code of Regulations and the Public Resources Code.

Fire Risk Reduction Community

A Fire Risk Reduction Community is a Board of Forestry and Fire Protection designation for local agencies in the SRA or Very High Fire Hazard Severity Zone that meet the Board-defined best practices for local fire planning. The requirements for this designation are found in California Code of Regulations, Title 14, Division 1.5, Chapter 7, Subchapter 1, Article 3, Section 1268.01, Criteria for Local Agencies that are cities, city and county, or counties. Local agencies must meet the following requirements to obtain this designation:

- Adopt a local ordinance designating Very High Fire Hazard Severity Zones and submit it to the Board.
- Submit the findings for all tentative and parcel maps approved for areas in SRA or Very High Fire Hazard Severity Zone to the Board, as well as a list of subdivisions since January 1, 2013.
- The Safety Element of the General Plan has been submitted to the Board for review within the last eight years, and all recommendations have been adopted.

- After July 1, 2022, a progress report on implementation of the most recent fire safety recommendations from the Board upon subdivision review in a Fire Safety Survey for each community reviewed within the jurisdiction must be submitted.

The City of Redding has not received this designation.

California Public Utilities Commission

In 2007, wildfires in southern California were ignited by overhead utility power lines and aerial communication facilities near power lines. In response, the California Public Utilities Commission (CPUC) began considering and adopting regulations to protect the public from fire hazards posed by overhead power lines and nearby aerial communication facilities. The CPUC published a fire threat map—under Rulemaking 15-05-006, following procedures in Decision 17-01-009, revised by Decision 17-06-024—that adopted a work plan for the development of a utility high fire-threat district where enhanced fire safety regulations in Decision 17-12-024 apply (CPUC 2022a). The fire regulations require electrical utilities to (CPUC 2022b):

- Prioritize the correction of safety hazards.
- Correct nonimmediate fire risks in "Tier 2" (elevated fire threat) areas in the CPUC high fire-threat district within 12 months, and in "Tier 3" (extreme fire threat) areas within 6 months.
- Maintain increased clearances between vegetation and power lines in the high fire-threat district.
- Maintain stricter wire-to-wire clearances for new and reconstructed facilities in Tier 3 areas.
- Conduct annual inspections of overhead distribution facilities in rural areas of Tier 2 and Tier 3 areas.
- Prepare a fire prevention plan annually if overhead facilities exist in the high fire-threat district.

California Government Code

California Government Code Section 65302(g) and Section 65302.15 requires that safety elements be reviewed and revised as needed upon the revision of a Housing Element or Local Hazard Mitigation Plan (LHMP), but no less than every eight years, to ensure the goals, policies, actions, mapping, and background content are consistent with State regulations and reflect the best available information for wildfire risks, climate adaptation and resiliency, and emergency evacuation routes for certain residential areas. Communities with LHMP updates occurring after January 1, 2022, must also ensure their Safety Elements or LHMPs include an assessment of evacuation routes and their capacity, safety, and viability and evacuation locations under a range of emergency scenarios.

For wildfire and evacuation purposes, a Safety Element must include the following:

- Identify wildfire hazards with the latest fire severity zone maps from the Board of Forestry and Fire Protection, US Geological Survey, and other sources.

- Consider guidance given by the Office of Planning and Research's (OPR) Fire Hazard Planning document.
- Demonstrate that the jurisdiction or contract agency and associated codes satisfactorily address adequate water supply, egress requirements, vegetation management, street signage, land use policies, and other criteria to protect from wildfires.
- Establish in the Safety Element (and other elements that must be consistent with it) a set of comprehensive goals, policies, and feasible implementation measures for protection of the community from unreasonable risks of wildfire.
- Identify evacuation constraints of residential parcels in hazard-prone areas.

Governor's Office of Planning and Research Fire Hazard Technical Advisory

The OPR Fire Hazard Technical Advisory, first published in 2015 and updated in 2020, is a planning guide for addressing fire hazards, reducing risk, and increasing resilience across California's diverse communities and landscapes. The guide provides a range of goals, policies, and programs for fire hazard prevention and mitigation, disaster preparedness, and emergency response and recovery. The 2020 update to the Technical Advisory includes specific land use strategies to reduce fire risk to buildings, infrastructure, and communities.

Regional Regulations

CAL FIRE's Shasta Trinity Unit Strategic Plan

CAL FIRE prepares a California Strategic Plan to govern operations statewide. The California Strategic Plan is implemented through individual "unit plans" that are prepared for different regions for the state. CAL FIRE's fire suppression operations are organized into 21 units that geographically follow county lines. CAL FIRE has adopted a Shasta Trinity Unit Fire Plan that covers both Shasta and Trinity Counties. The unit plan sets forth the agency's priorities for the prevention, protection, and suppression of wildfires. The overall goal of the Shasta Trinity County Unit Fire Plan is to reduce total costs and losses from wildland fire in the unit by protecting assets at risk through focused pre-fire management prescriptions increasing initial attach success.

Shasta County Fire Safe Council

The Shasta County Fire Safe Council (SCFSC) was formed in May 2002 as part of a statewide effort to educate and encourage Californians to pro-actively prepare for wildfires. The mission of the SCFSC is to be a framework for coordination, communication, and support to decrease catastrophic wildfire throughout Shasta County. SCFSC's adopted Community Wildfire Protection Plan is intended to reduce wildfire risk to communities, municipal water supplies, structures, and other at-risk land uses through a collaborative process of planning and implementing programs with federal, state, tribal, and county partners. The Plan establishes a local definition and boundary for especially high risk areas where wildland vegetation and

communities, rural homes, and critical infrastructure intermix and allows grant funding from state and federal agencies to be given to the projects and treatment areas identified in the Plan.

Shasta County Emergency Operations Plan

The Shasta County Emergency Operations Plan (EOP) was last updated in 2014 and is an all-hazard plan that describes how Shasta County will organize and respond to emergencies and disasters in the community. The Shasta County EOP is based on the functions and principles of SEMS and identifies how the County fits into the overall SEMS structure. SEMS served as the model for the National Incident Management System and National Response Framework, and these systems are designed to be compatible through their use of the Incident Command System (Shasta County 2014). Among other hazards, the Shasta County EOP describes regional emergency response to scenarios involving wildfires.

2017 Shasta County and City of Anderson Multi-Hazard Mitigation Plan

The Shasta County and City of Anderson LHMP identifies the City's hazards, reviews and assesses past disaster occurrences, estimates the probability of future occurrences and sets goals to mitigate potential risks to reduce or eliminate long-term risk to people and property from natural and man-made hazards (Shasta County & City of Anderson 2017).

Shasta County Local Agency Formation Commission

Municipal Service reviews were added to the Local Agency Formation Commission's (LAFCO) mandate with the passage of the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000. A service review is a comprehensive study designed to better inform LAFCO, local agencies, and the community about the provision of municipal services. Service reviews attempt to capture and analyze information about the governance structures and efficiencies of service providers and to identify opportunities for greater coordination and cooperation between providers.

Local Regulations

2000-2020 Redding General Plan

The existing General Plan contains the following goals and policies related to wildfire:

Community Design and Development Element

- Goal CDD7: Retain the natural appearance of the steep hillside areas and ridge lines.
    - Policy CDD7B: Establish hillside development standards to: (1) decrease allowable residential densities as the slope of a development site increases; (2) limit site grading on steep slopes; (3) appropriate, so buildings are set into and step down the hill; and (4) minimize disturbance of native trees and other vegetation outside the building,

yard, and driveway areas, while providing appropriate levels of wildland fire protection. Require revegetation of disturbed areas.

Public Facilities and Services Element

- Goal PF4: Ensure adequate fire protection and emergency medical response for residents and businesses in the community.
    - Policy PF4A: Establish the following thresholds for fire protection services:
        - Maintain a community ISO rating of 3 or better.
        - Respond to 90 percent of all calls within 5 minutes of being dispatched.
    - Policy PF4B: Endeavor to maintain the minimum response time for fire calls through adequate staffing, proper distribution of fire stations and equipment, and use of automatic aid agreements.
    - Policy PF4B: Construct new and possibly relocate existing fire stations as needed to maintain service thresholds.
    - Policy PF4D: Utilize the following factors to determine the location and type of fire fighting equipment that is needed:
        - The concentration of structures in a given area.
        - The available water supply.
        - The availability of automatic aid.
        - The amount of area to be protected.
        - The kind of fires to be encountered.
        - Desired response times.
    - Policy PF4E: Implement ordinances to protect life, control fire losses and fire protection costs through the use of automatic suppression systems.
- Goal PF4: Ensure adequate fire protection and emergency medical response for residents and businesses in the community.
    - Policy PF3D: Implement the California Building Code and any local ordinances to protect life, control fire losses and fire protection costs through the use of automatic suppression systems. Adequate water supplies to construct fire suppression infrastructure as necessary should be available.

Health and Safety Element

- Goal HS4: Minimize the potential for loss of life, injury, and property damage resulting from urban and wildland fires.
    - Policy HS4A: Maintain an Insurance Service Office (ISO) rating of 3 or better.

- Policy HS4B: Require that all new development and redevelopment meet state and local standards for fire protection; encourage the upgrade of existing structures to current standards.
- Policy HS4C: Work with local water districts to ensure that district systems are developed, maintained, and monitored to provide minimum fire-flow, rates, and peak-load capacity for fire suppression.
- Policy HS4D: Require remote hillside developments to maintain sufficient water supplies on-site, when appropriate, to provide wildland fire protection. Water supplies may be stored in the form of ponds, storage tanks, or other features acceptable to the Fire Marshal.
- Policy HS4E: Utilize appropriate techniques, such as those illustrated in Figure 4-8, to reduce fire damage in those areas with a high wildland fire potential. The actual combination of these and/or other techniques required for a particular project will be determined by the Fire Marshal based on the level of hazard involved.
- Policy HS4F: Construct emergency-vehicle access routes to open-space areas at optimal locations within developments.
- Policy HS4G: Develop a comprehensive vegetation management and weed-abatement program for open-space areas, including those that are located in existing subdivisions and in new development areas.
- Policy HS4H: Consider establishing a program to construct and maintain fire-access roads in ravine areas considered to have a very high fire danger to enhance the ability to suppress wildland fires. These roads need not be surfaced and may also function as part of the City's trail system. Erosion and impacts to native vegetation and natural features shall be minimized.
- Policy HS4I: Amend subdivision regulations to ensure that cul-de-sac lengths are generally no greater than 600 feet and that sufficient emergency-vehicle turnaround areas are provided. Longer cul-de-sacs may be considered if fire-protection measures, such as residential fire sprinkler systems, are incorporated to ensure the safety of residents and emergency-response personnel.
- Policy HS4J: Generally require each residential development having 50 or more dwelling units and each commercial development employing 150 or more people to have at least two connected points of public access as may be determined necessary by the Fire Marshal.
- Policy HS4K: Maintain and augment mutual and automatic aid agreements with the California Department of Forestry & Fire Protection (CAL FIRE) and Shasta County.
- Policy HS4L: Continue to promote fire prevention through education and public-awareness programs.

Natural Resources Element

- **Goal NR8:** Preserve areas containing excessive slopes or 100-year floodplains as open space to prevent loss of life and property damage and to provide valuable habitat and recreational opportunities.
    - **Policy NR8B**: Strive to preserve land publicly dedicated as open space. Development in these areas, except as required to provide public facilities, such as roads, utilities, and trails, should be restricted to passive, low-impact uses that minimize the removal of existing vegetation and maintain or increase the existing habitat value, while providing adequate protection from wildland fires. Coordinate with other entities as appropriate to establish conservation easements that will ensure long term protection and necessary maintenance.

Buckeye-Redding Fire Protection District

The Buckeye-Redding Fire Protection District (BRFPD) is served under contract with the City of Redding Fire Department (RFD), providing vital fire and life safety service to residents, visitors, and businesses in the city. The service area of the District covers 40,700 acres in the City of Redding and Buckeye area, and is staffed with eight fire stations. RFD operates through three divisions: the Administration Division which coordinates emergency preparedness activities, the Operations Division that is responsible for emergency response activities, and the Prevention Division which administers safety education, code enforcement, vegetation management, and inspection activities. RFD is also responsible for administering burn permits that allow residents with properties on the wildland-urban interface (WUI) to mitigate fuels. RFD encourages that WUI properties maintain 100 feet of defensible space around homes per Section 4291 of the Public Resources Code.

City of Redding Electric Utility Wildfire Mitigation Plan

The City of Redding Electric Utility (REU) prepared a Wildfire Mitigation Plan (Plan) in 2021 to comply with changes made to the Public Utilities Code as part of Senate Bill 901 in 2018. The Plan describes the range of activities that REU is taking or considering, to mitigate the threat of power-line ignited wildfires, including its various programs, policies, and procedures. The Plan integrates a number of the policies outlined in the City of Redding Local Hazard Mitigation Plan and coordinates with City departments to implement its mitigation activities.

City of Redding Emergency Operations Plan

The EOP outlines the City's all-hazard approach to emergency operations in order to protect the safety, health, and welfare of its citizens throughout all emergency management mission areas. Through the EOP, the City designates the Standardized Emergency Management System which is consistent with the National Incident Management System, and the Incident Command System (ICS) as the frameworks within which all emergency management activities will be conducted. The plan is intended to guide the City's emergency operations while complementing and supporting the emergency response plans and procedures of

responding agencies, other local governments, special districts, and other public, nonprofit/volunteer, and private-sector entities.

City of Redding Municipal Code

Chapter 9.12, Emergency Organization and Functions

The purpose of Chapter 9.12 of the Redding Municipal Code is to provide for the preparation and carrying out of plans for the protection of persons and property within this City in the event of an emergency; the direction of the emergency organization; and the coordination of the emergency functions of this City with all other public agencies, corporations, organizations, and affected private persons. As indicated in Section 9.12.050, Emergency Plan, the director of emergency services is responsible for the development of the City's emergency plan, which shall provide the effective mobilization of all the resources of the City, both public and private, to meet any condition constituting a local emergency or state of emergency; and shall provide for the organization, powers and duties, and staff of the emergency organization.

Chapter 9.20, Fire Code

According to Chapter 9.20 of the Redding Municipal Code and Ordinance No. 2657, the City adopted the 2022 California Fire Code as well as the 2021 International Fire Code of the International Code Council (Redding 2022a). The State adopts a new California Fire Code every three years; currently, the 2022 California Fire Code is the effective code implemented by the City. Amendments were are also made to the Code under Ordinance No. 2657, including requirements for property addressing and signage, Class A roofing, automatic fire alarm and sprinkler system installation fire hydrants, eave protection, and fire flow and access.

Redding Local Hazard Mitigation Plan (LHMP)

Under the Federal Disaster Act of 2000, jurisdictions are required to prepare Local Hazard Mitigation Plans (LHMPs) that are subject to state review. The City of Redding LHMP assesses hazard vulnerabilities and identifies mitigation actions that the City will pursue in order to reduce the level of injury, property damage, and community disruption that might otherwise result from such events. The actions address hazards, as well as specific activities for, Wildland Fire, Flood, Hazardous Material, Severe Winter Weather, Earthquakes, Utility Disruption, Aviation Disaster, Chemical, Biological, Radiological, Nuclear, Explosives (CBRNE), Dam Overflow or Failure, and Volcanic issues. The most recent update to the City of Redding Local Hazard Mitigation Plan was adopted in 2023 (Redding 2023).

5.18.1.2 EXISTING CONDITIONS

Wildfire Background

The term "wildfire" refers to fires that usually result from the ignition of dry grass, brush, or timber. Historically, wildfires commonly occurred in areas that are characterized by steep or heavily vegetated areas,

which make suppression of the fire difficult. More recently, wildfires have been encroaching into more urban areas within the wildland-urban interface (WUI), threatening homes, businesses, and essential infrastructure. While wildfires play an important role in the ecology of many natural habitats, as urban development moves into areas susceptible to wildfire hazards, risks to human safety and property increase.

Types of Wildfires

There are three basic types of wildfires:

- Crown fires burn trees to their tops and are the most intense and dangerous wildland fires.
- Surface fires burn surface litter and duff and are known for being the easiest fires to extinguish and to cause the least damage. Brush and small trees enable surface fires to reach treetops, and so are referred to as "ladder fuels."
- Underground fires occur underground in deep accumulations of dead vegetation. These fires move very slowly and can be difficult to extinguish due to limited access (Natural Resources Canada 2018).

Wildfires burn in many types of vegetation—forest, woodland, scrub, chaparral, and grassland. Many species of native California plants are adapted to fire. Chaparral shrubs and conifer forests recover from fire. For example, many species of conifers have seed cones that require fire to open in order for them to reproduce (CAL FIRE 1999). Between 2010 and 2017, wildfires in California burned about 265,000 acres of forest land; 207,000 acres of scrub vegetation; 99,000 acres of grassland; 18,000 acres of desert vegetation; and 14,000 acres of other vegetation types (CAL FIRE 2018). Wildfires have been observed to be more frequent and growing in intensity the past several years, with 2,569,386 acres and 363,939 acres burning in 2021 and 2022, respectively (CAL FIRE 2023a).

Wildfire Causes

Although the term "wildfire" suggests natural origins, a 2017 study that evaluated 1.5 million wildfires in the United States between 1992 and 2012 found that humans were responsible for igniting 84 percent of wildfires, accounting for 44 percent of acreage burned (Balch et al. 2017). The three most common types of human-caused wildfires are debris burning (e.g., logging slash, farm fields, trash), arson, and equipment use (Pacific Biodiversity Institute 2007). Power lines can also ignite wildfires through downed lines, vegetation contact, conductors that collide, and equipment failures (Texas Wildfire Mitigation Project 2018). Lightning is the most common cause of nature-induced wildfire (Balch et al. 2017).

An analysis of USFS wildfire data from 1986 to 1996 determined that 95 percent of human-caused wildfires and 90 percent of all wildfires were within 0.5 mile of a road, and that about 61 percent of all wildfires and 55 percent of human-caused wildfires occurred within approximately 650 feet (200 meters) of a road. The study concluded that the increase in human-caused ignition greatly outweighs the benefits of increased access for firefighters (Pacific Biodiversity Institute 2007).

There are three primary methods of wildfire spread:

- **Embers.** Embers are the most prolific cause of home ignition, at a rate of two out of every three homes destroyed. Embers are glowing or burning pieces of vegetation or construction debris that are lofted during a wildfire and can move up to a mile ahead of a wildfire, especially during high winds. These small embers or sparks may fall on the vegetation near a home (on dry leaves, needles, or twigs on the roof) and subsequently ignite the home. Embers can travel several miles during high wind events, placing a potential risk to all structures without fire-resistant landscaping and construction within a mile of the fire (CAL FIRE 2019).
- **Direct Flame Contact.** Direct flame contact refers to the transfer of heat by direct flame exposure. Direct contact will heat the building materials of the home, and if the time and intensity of exposure is severe enough, windows will break and materials will ignite.
- **Radiant Heat.** A house can catch fire from the heat that is transferred to it from nearby burning objects, even in the absence of direct flames or embers. By creating defensible space around homes, the risk from radiant heat is significantly reduced.

Secondary Effects of Wildfires

After a high-intensity wildfire, or crown fire, is suppressed, the burn scar is typically bare of its vegetative cover, which had supported the hillsides and steeper slopes. The intense heat from the fire can also cause a chemical reaction in the soil that makes it less porous, and the fire can destroy the root systems of shrubs and grasses that aid in stabilizing slope material. As a result, rainstorms increase the possibility of severe landslides and debris flows.

In addition to damaging natural environments, wildfires can injure and cause fatalities of residents and firefighters, in addition to damaging or destroying structures and personal property. Wildfires also deplete water reserves, down power lines, disrupt communication services, create poor air quality, and block evacuation routes, which can isolate communities. Wildfires can also indirectly cause flooding if flood-control facilities become inadequate to handle increases in storm runoff, sediment, and debris that are likely to be generated from burn scars.

Redding Planning Area

Redding is situated at the point where the Central Valley meets the foothills of the Cascade mountain range, with an average elevation of approximately 500 feet across varying topography. The City's municipal limits encompass approximately 61 square miles and contain approximately 40,287 housing units (DOF 2022). It is surrounded by mountains to the north, east, and west, and fertile agricultural lands to the south. Extensive forests cover more than half of land area of Shasta County including the Shasta-Trinity National Forest which borders the City on its west and north sides. As a result, Redding's sphere of influence (SOI) is composed of extensive open space areas that are susceptible to wildfire and encroachment into the community.

Redding typically experiences cool, wet winters and hot, dry summers creating extreme fire weather conditions especially from May through September. Daily temperatures during fire seasons (June-October) are usually above 90° Fahrenheit with a relative humidity of less than 30 percent (Weather Spark 2023). The Redding area consists of mixed conifer forests and interspersed brush vegetation (CPAW 2019). Outside of Redding, low to moderate load slash is common on private timber lands (CPAW 2019). Fuels are typically continuous throughout the area and can result in high fire danger especially during north wind events (REU 2021).

Wildfire is not considered a major threat for flat, urbanized areas of the City when adequate emergency resources are available. According to the Redding LHMP, the areas most at risk of wildfire damage are on the western edge of Redding with hilly terrain and limited emergency access. Figure 5.18-1*, Wildland Urban Interface Area,* shows the areas of the Planning Area that could be higher risk of wildfire hazard. The western edge of the City contains numerous subdivisions built on ridge tops surrounded by significant fuel build-up. These conditions create increased risk due to a predominance of the north-facing slopes that are characteristically more vegetated than southern slopes. A vulnerability analysis conducted for the Redding LHMP determined that 13,437 residents in the City would be at risk from a fire scenario that was based on patterns of historical fires that have occurred in the City.

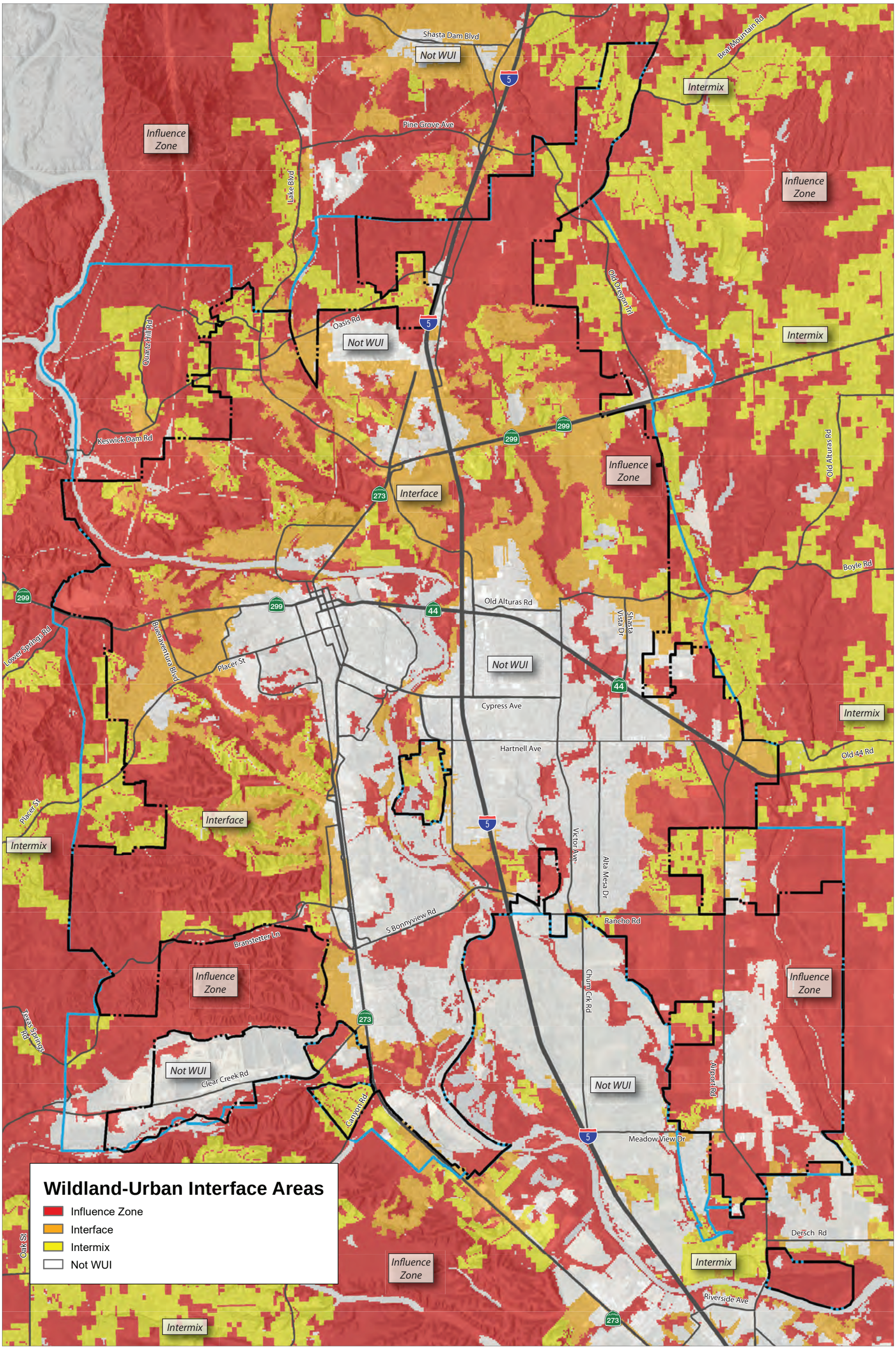
Redding also includes 23.5 square miles of land mapped by CAL FIRE as Very High Fire Hazard Severity Zones (VHFHSZ). These areas cover almost 39 percent of the land area within the City's boundaries and can be seen in Figure 5.18-2, *Fire Hazard Severity Zones*. VHFHSZ are areas of very high fire hazard severity zones within LRA's and all development within these areas must adhere to Chapter 7A of the California Building Code. As seen in Figure 5.18-2, the City contains VHFHSZ land on its western, northern, and eastern edges. Most of the land within Redding's VHFHSZ areas is designated for residential uses as seen in Figure 5.18-3, *Residential Uses in Fire Hazard Severity Zones*.

California Public Utilities Commission Wildfire Hazard Zones

In response to Fire Safety Rulemaking of the California Public Utilities Commission (CPUC), the CPUC mapped high fire threat areas where more stringent inspection, maintenance, vegetation clearance, and wire clearance requirements would be implemented due to the elevated risk for a devastating wildfire and damage to electrical lines. The CPUC High Fire Threat District Map identifies three tiers of elevated risk for fires associated with utilities. As shown in Figure 5.18-4, *CPUC Fire Threat Map*, 20.4 square miles of land in the City's limits are mapped in a Tier 2 Fire Threat District and 7.65 square miles of the City is mapped within a Tier 3 fire district. Tier 2 areas are defined as areas "where there is an elevated risk (including likelihood and potential impacts on people and property) from wildfires associated with overhead utility power lines. Tier 3 areas are defined as areas "where there is an extreme risk (including likelihood and potential impacts on people and property) from utility associated wildfires" (CPUC 2021). While the Redding Electric Utility is not regulated by CPUC, it incorporates the High Fire Threat District fire-safety regulations into its construction, inspection, maintenance, repair, and clearance practices, where applicable (REU 2021).

This page intentionally left blank.

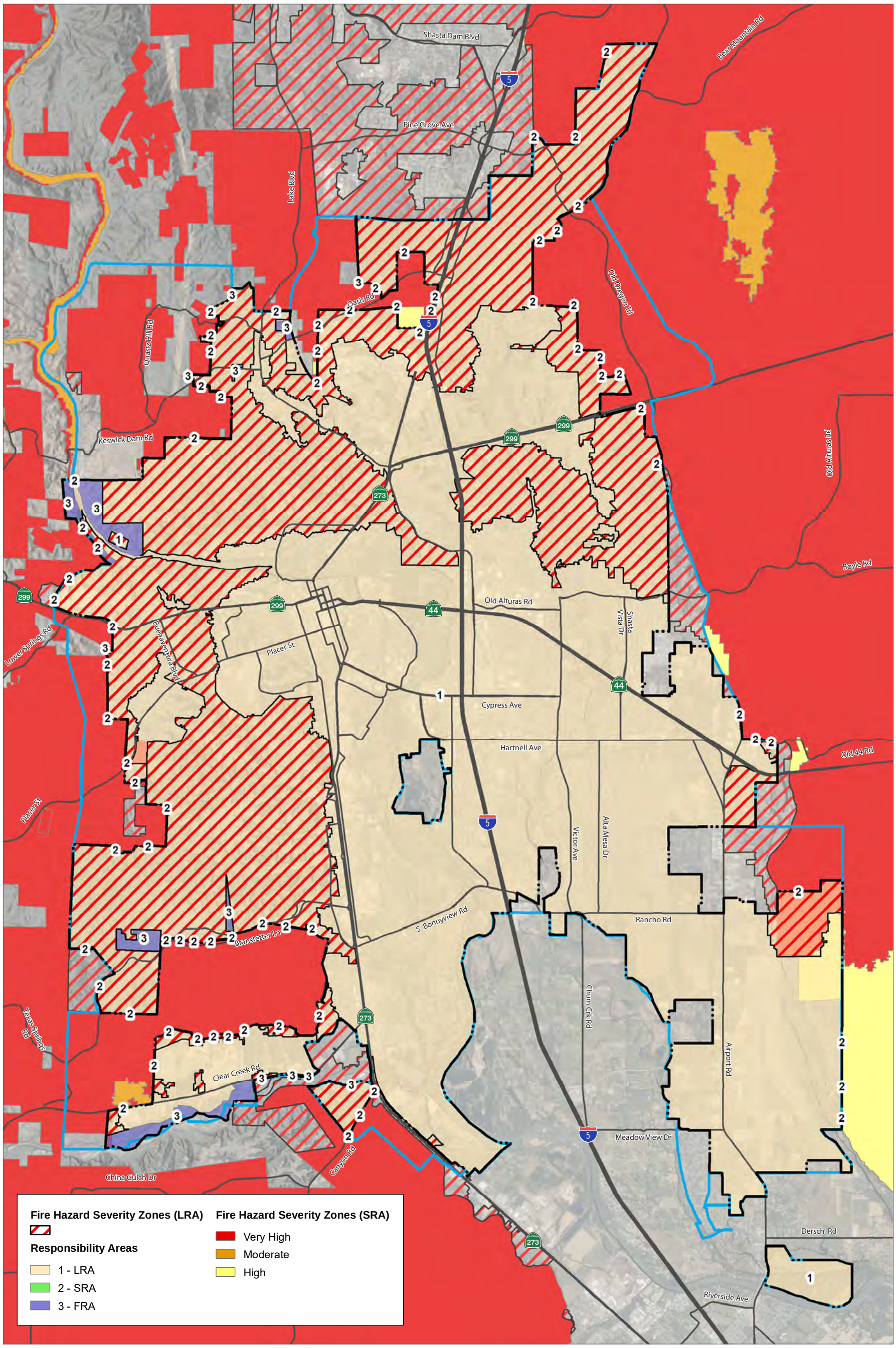
5.18 WILDFIRE



Source: Generated using ArcMap, 2023; City of Redding GIS 2022; California Department of Forestry and Fire Protection, Fire and Resource Assessment Program (FRAP), 2021.

Figure 5.18-1
Wildland-Urban Interface Area Near Redding

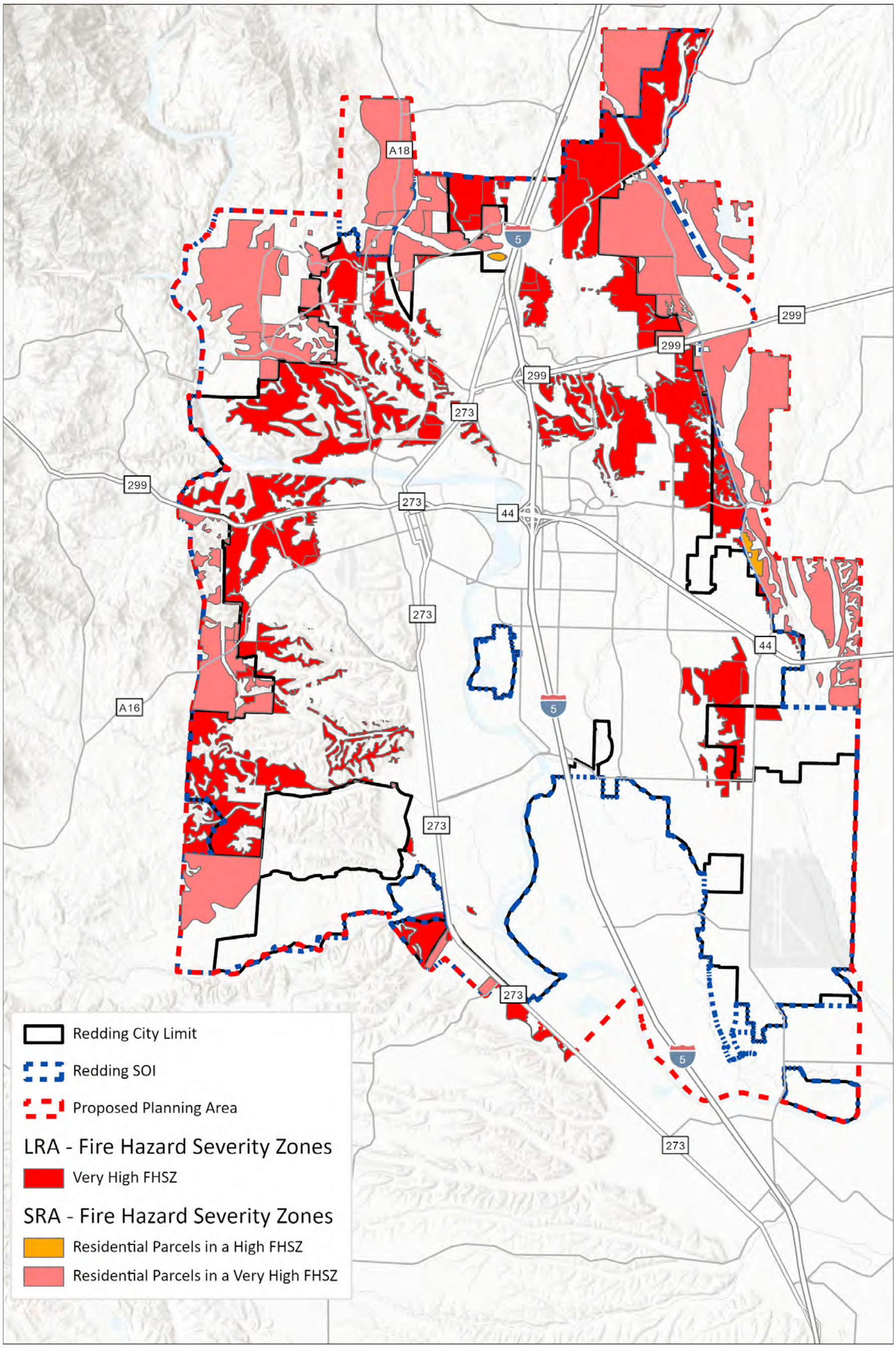
5.18 WILDFIRE



Source: Generated using ArcMap, 2023; City of Redding GIS 2017, 2021, and 2022; CAL FIRE, 2007.

Figure 5.18-2
Fire Hazard Severity Zones

5.18 WILDFIRE

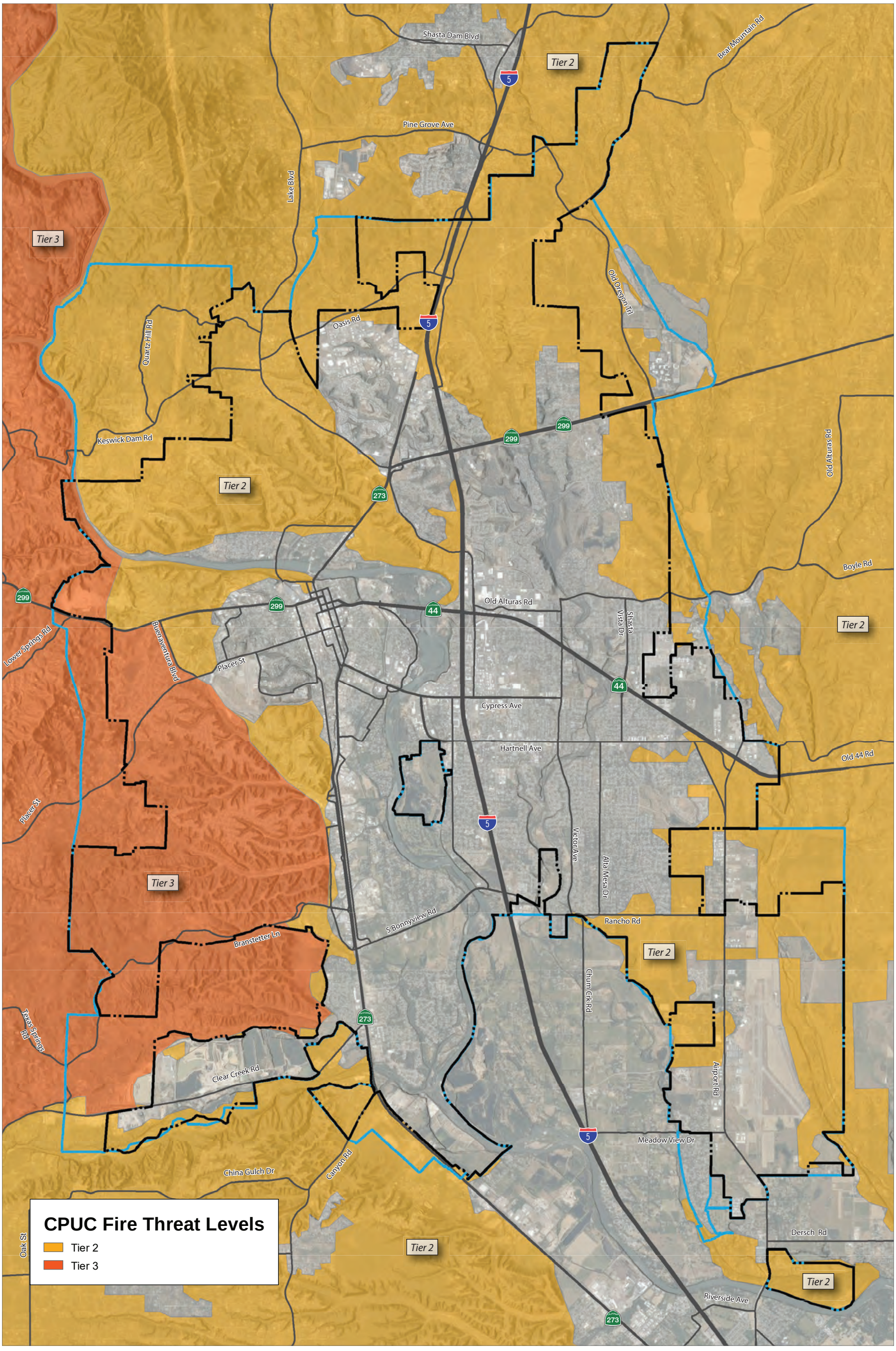


Source: Generated using ArcGISPro, 2023; City of Redding GIS 2022; California Department of Forestry and Fire Protection, Fire and Resource Assessment Program (FRAP), 2021.

0 2
Scale (Miles)

Figure 5.18-3
Residential Uses in Fire Hazard Severity Zones

5.18 WILDFIRE



Source: Generated using ArcMap, 2023; City of Redding GIS 2022; California Public Utilities Commission, 2021.

Figure 5.18-4
CPUC Fire Threat Map

Fire History

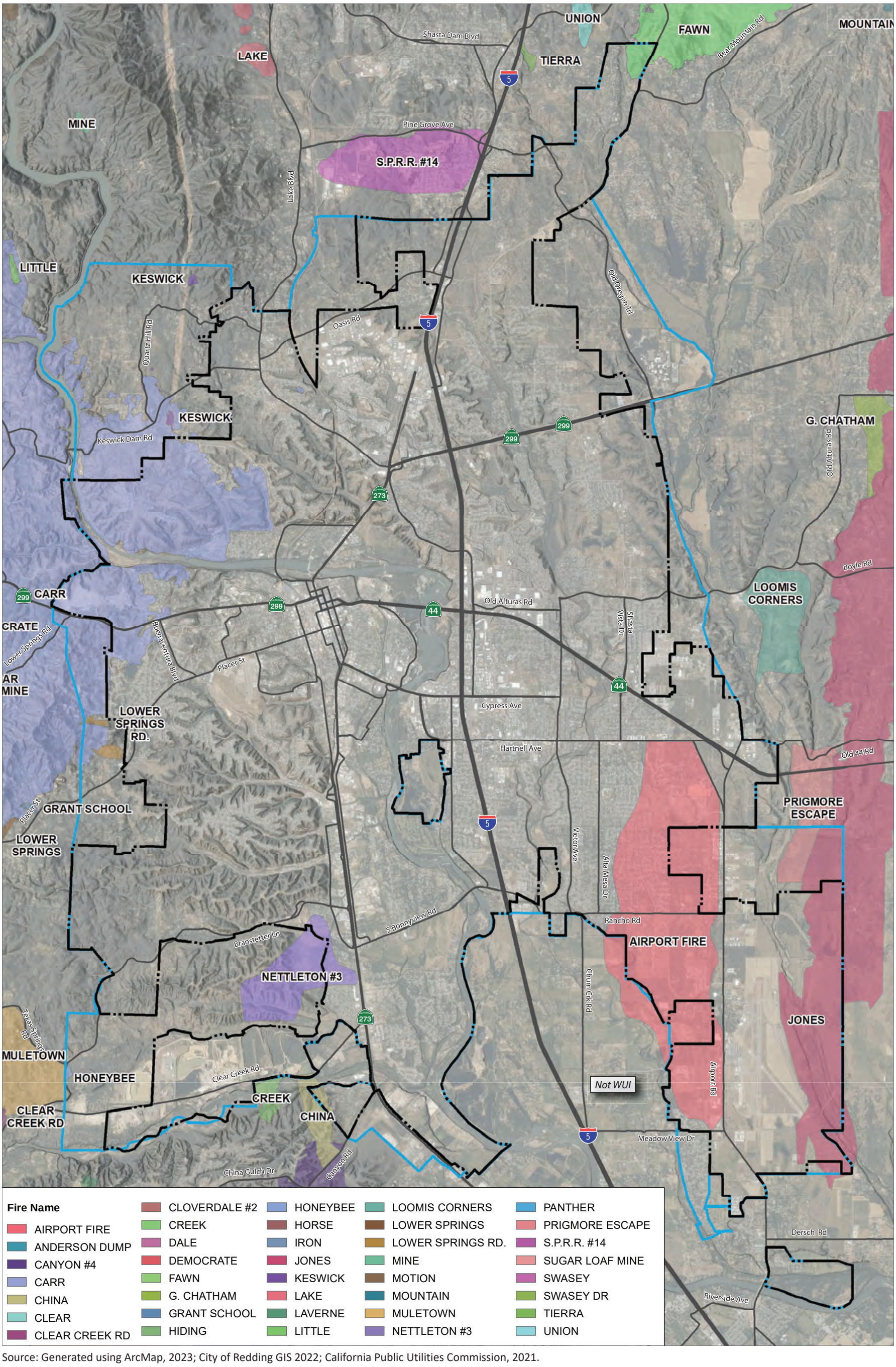
According to the Redding Fire Department's Incident Statistics, the City saw a 12 percent increase in the number of incidents from 2016 to 2019 with the number of fire incidents peaking in 2018 at 515 fire incidents. Building and vegetation fires compose the majority of these fire incidents, with an average of 156 vegetation fires and 147 building fires reported across the four periods.

In addition to urban fires, Redding has experienced impacts from a number of wildfires in the county that exhibited extreme fire behavior due to an extended drought period, forest health, and climatic conditions. One of the most destructive fires to impact Redding in recent years was the Carr Fire. The Carr Fire started on July 23, 2018, in Whiskeytown National Park and grew to 229,651 acres, resulting in the evacuation of more than 36,000 people, with seven confirmed fire personnel and civilian fatalities attributed to the fire and the destruction of 1,614 structures (CAL FIRE 2023b). A total of 270 homes in Redding were destroyed as a result of the Carr Fire (Chandler 2019). In September of 2021, the Fawn Fire burned over 8,500 acres north of Redding and forced the evacuation of more than 4,000 residents of the area (Arthur & Chapman 2021).

Shasta County also has three fires listed on CAL FIRE's 20 most damaging incidents: the Carr Fire, the 1992 Fountain Fire which burned 63,960 acres and destroyed 636 structures, and the 1999 Jones Fire which burned 26,200 acres and destroyed 954 structures (CAL FIRE 2022). A total of 83 wildfires have occurred in Shasta County from 2013 through 2022, burning a total of 1,614,015 acres, according to CAL FIRE's wildfire incident archives. Table 5.18-1, *Recent Wildfire History near Redding and its SOI,* below summarizes the most severe fire incidents that have occurred in or near Redding the last 9 years. Figure 5.18-5, *Fire Perimeters Through 2021 Near Redding*, shows the locations all wildfires, prescribed burns, and other fuel modification projects within vicinity of Redding.

This page intentionally left blank.

5.18 WILDFIRE



Source: Generated using ArcMap, 2023; City of Redding GIS 2022; California Public Utilities Commission, 2021.

Figure 5.18-5
Fire Perimeters Through 2021 Near Redding

This page intentionally left blank.

TABLE 5.18-1 RECENT WILDFIRE HISTORY NEAR REDDING AND ITS SOI

Year	Fire Incident	Location	Acres Burned	Damages/Losses
2013	Clover Fire	Community of Igo, 10 miles southwest of Redding	8,073	10 structures damaged, 201 structures destroyed, 6 injuries
2014	Gulch Fire	Backbone Ridge, 15 miles northeast of Redding	1,375	4 structures destroyed, 4 injuries
2017	Laverne Fire	6 miles southeast of Redding	180	5 structures destroyed
2018	Masonic Fire	Lake Blvd & Masonic Ave, Redding	38	1 Structure destroyed, 1 injury
2018	Creek Fire	Clear Creek Rd & American Rd, west of Redding	1,678	11 structures destroyed, 1 injury
2018	Carr Fire	Hwy 299 and Carr Powerhouse Rd, Whiskeytown	299,651	61 structures damaged, 1,614 structures destroyed, 3 fatalities
2019	Mountain Fire	Bear Mountain Road and Dry Creek Road, north of Bella Vista	600	7 structures damaged, 14 structures destroyed, 3 injuries
2020	Zogg Fire	Zogg Mine Road and Jenny Bird Lane, North of Igo	56,338	27 structures damaged, 204 structures destroyed, 1 injury
2021	Fawn Fire	Fawndale Rd and Radcliff Rd, 5 miles northeast of Shasta Lake	8,578	26 structures damaged, 185 structures destroyed, 4 injuries
2021	Rock Fire	Benson Dr and Rock Creek Rd, East of Whiskeytown	108	Unknown
2022	Flanagan Fire	Flanagan Road and N Beltline Road, west of Shasta Lake City	88	No losses
2022	Branstetter Fire	Branstetter Lane and Cedars Road, City of Redding	34	No losses
2022	Peter Fire	Peter Pan Gulch Road and Olinda Road	304	6 structures damaged, 16 structures destroyed

Source: CAL FIRE 2022

Weed Abatement

As Redding is surrounded by forestlands, maintaining existing fire breaks and clearing vegetation helps to prevent wildland fires from entering the community. Under a Cooperative Agreement with the California Department of Corrections and Rehabilitation (CDCR), CAL FIRE operates the Sugar Pine Conservation Camp and provides weed abatement in Redding and the surrounding wildland areas in Shasta County (CDCR 2022).

Mutual Aid Agreements

The City of Redding actively participates in a range of mutual automatic aid agreements with Shasta County Fire and CAL FIRE designed to improve its capability to respond to fire-related emergencies, and fire protection and suppression. The City of Redding's Fire Department provides services through an agreement with the Buckeye Fire Protection District. The Redding Fire Department does not receive service from the Buckeye Fire Protection District but receive payment from them for their service. The Redding Fire Department also falls under the state mutual aid system and provide services when requested through California Governor's Office of Emergency Services (Cal OES).

Fire Protection Services

See Section 5.15, *Public Services and Recreation*, for information on fire protection resources. The Redding Fire Department is an "all risk" department, responding to fires, medical emergencies, and hazardous conditions within the city. The RFD also participates in mutual and contractual aid with neighboring jurisdictions. There are eight RFD fire stations, as described in Chapter 5.15, *Public Services*. Within the unincorporated areas of the Redding Planning Area, Shasta County Fire Department or other local jurisdictional fire units respond to service calls. See Figure 5.15-1, *Fire Stations in the Vicinity of Redding*, in Section 5.15, *Public Services*, for the locations of fire stations within the city.

Evacuation Routes

Redding's location makes it susceptible to wildfires and floods. Most major roadways within the city and SOI are crossed by one or more disaster prone areas–including VHFSZs and 100-year flood zones. These disasters can cause significant damage to transportation infrastructure, preventing or impeding access by emergency responders and evacuation by residents. Regional access is limited to the I-5 running north-south through the City and SR-44 which provides access from the east into the City and merges into SR 299 which runs northeast to west through the City. Large portions of these routes outside of the urbanized areas of the City are surrounded by high fire hazard areas which increases risk for safe evacuation during emergency events.

Redding works with the Shasta Area Safety Communications Agency to manage emergency communications for the city, including the use of the CodeRED emergency notification system. CodeRed sends phone alerts during community-wide emergencies and can be used to coordinate evacuation activities (SHASCOM 2022). The City also uses a digital wildfire information map that collects synchronous data from the Integrated Reporting of Wildland-Fire Information service, the National Interagency Fire Center, Cal OES and CALTRANS to disseminate wildfire status updates and evacuation information (Redding 2022b). This tool allows residents to find their evacuation zone, check their evacuation zone status and get directions for evacuation routes.

CAL EOE and the County also maintains an Emergency Operations Center to help coordinate information and resources for any type of disaster or threat. Yearly ongoing training, updating of critical information, and drills are conducted to help protect people and property (Redding 2015). As part of REU's wildfire

mitigation strategies, the City established an Emergency Operations Command Center to address the needs of the City.

5.18.2 THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if located in or near state responsibility areas or lands classified as very high fire hazard severity zones the project would:

WILD-1 Substantially impair an adopted emergency response plan or emergency evacuation plan.

WILD-2 Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.

WILD-3 Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.

WILD-4 Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

WILD-5 In combination with past, present, and reasonably foreseeable projects, result in cumulative impacts with respect to wildfire.

5.18.3 PROPOSED GENERAL POLICIES

Community Development and Design Element

- Policy CDD6B: Consider establishing hillside development standards to:
    - Decrease allowable residential densities with an increase in site slope.
    - Limit excessive grading on slopes.
    - Encourage the use of multiple levels where appropriate, so buildings are set into and stepped down the hill.
    - Minimize deforestation and disturbance of native vegetation outside the approved building footprint and street and utility corridors, while considering the Local Hazard Mitigation Plan (LHMP) for wildland fire protection.
- Policy CDD16F: Consider establishing a comprehensive landscape and vegetation management program that incorporates the City's urban landscape and open space lands to enhance the landscape aesthetic of the City and more effectively protects the community from wildfire hazards. The program could be responsible for the following and additional activities as may be appropriate:

  - Overseeing the City's street tree program, including recommendations on appropriate trees and long-term maintenance.
  - Reviewing and approval of landscape plans developed in conjunction with private development activities such as commercial and office developments, residential planned developments, proposed landscape maintenance districts, stormwater detention basins, and similar developments and facilities.
  - Review and consider, in concert with appropriate public safety agencies, vegetation modifications and long-term management plans in Redding's wildland-urban interface areas to protect new and existing developments from wildfire.
  - Identifying and seeking local, State, and federal funds as well as grants and other financial resources to accomplish the above activities.

- Policy CDD18A: Place new electric distribution lines underground in new development where feasible.
- Policy CDD18B: Place existing overhead distribution lines underground upon development of the abutting property where feasible.
- Policy CDD18C: Consider establishing a mechanism to systematically replace underground distribution lines in existing neighborhoods and commercial areas as funding sources are identified.

Environmental Justice Element

- Policy EJ3C: Partner with local, regional, and federal agencies to seek grants and other opportunities towards development and expansion of clean air centers, building ventilation upgrades, and other available and accessible technological advancements to provide better air quality and to reduce negative health impacts during wildfires and extreme weather events.
- Policy EJ7E: As funding and resources permit, implement an emergency evacuation plan and consistently educate residents on:
  - *Access*: Evacuation routes laid out for residents to use in case of emergency.
  - *Signage*: Signage, wayfinding, and designated evacuation routes.
  - *Communication*: Timely notices that may arrive in a variety of languages to accommodate the linguistic preferences of all residents and through multiple communication avenues including Assistive Listening Devices.
  - *Assistance*: Available assistance programs to aid resident evacuation during emergency.

Parks, Trails, and Recreation Element

- Policy R2D: Protect and enhance access for public safety, fire and rescue activities to the entire riverfront and creek corridors while minimizing and mitigating impacts to the extent feasible.

- Policy R13G: Provide buffer zones to act as staging and access points for wildfire protection activities where appropriate.

Public Safety Element

- Policy PS4A: Strive to maintain an Insurance Service Office (ISO) rating of 3 or better.
- Policy PS4B*:* All new development and redevelopment projects should be designed to meet state and local standards for fire protection; encourage the upgrade of existing structures to current standards. Encourage the installation of smoke detectors in residential and commercial facilities constructed prior to the requirement of their installation, as appropriate.
- Policy PS4C: As resources allow, enforce existing codes and standards, to ensure all new and existing developments provide:
    - Defensible space.
    - Non-combustible design with appropriate building exterior and roofing materials.
    - Spark arresting system, Fire alarms, and fire sprinkler systems are installed
- Policy PS4D: Continue to include the Fire Department in development review to ensure projects adequately address safety, on-site fire protection, and comply with applicable fire and building codes.
- Policy PS4E: Consider developing and funding a comprehensive vegetation management and weed-abatement program, beyond the wildfire mitigation through the Electric Utility, for City-owned properties, open-space areas, including those that are located in existing subdivisions and in new developments to prevent and reduce the risk of fire.
- Policy PS4G: Consider establishing a program to construct and maintain fire-access roads in ravine areas considered to have a very high fire danger to enhance the ability to suppress wildland fires. These roads need not be surfaced and may also function as part of the City's trail system. Erosion and impacts to native vegetation and natural features shall be minimized.
- Policy PS4H: Work with local community services districts (i.e.water districts) to ensure that district systems are developed, maintained, and monitored to provide minimum fire-flow, rates, and peak-load capacity for fire suppression.
- Policy PS4I: Require that remote hillside developments maintain sufficient water supplies on-site, when appropriate, to provide wildland fire protection. Water supplies may be stored in the form of ponds, storage tanks, or other features acceptable to the Fire Marshal.
- Policy PS4J: Utilize techniques, as determined appropriate by the Fire Marshal, to reduce fire damage in those areas with a high wildland fire potential.
- Policy PS4K: Enforce subdivision regulations that generally limit cul-de-sac lengths to no greater than 600 feet and strive to ensure that sufficient emergency-vehicle turnaround areas are provided.

- Policy PS4L: Apply as appropriate, subdivision regulations requiring each residential development having 50 or more dwelling units and each commercial development employing 150 or more people to have at least two connected points of public access as may be determined necessary by the Fire Marshal.
- Policy PS4M: Seek to construct emergency-vehicle access routes to open-space areas at optimal locations within projects during the development process, as funding or law allows. As funding and physical conditions allow, construct such access routes in existing developments where warranted.
- Policy PS4N: Strive to ensure new subdivisions have adequate fire protection measures such as multi-access for firefighting apparatus, noncombustible building construction, appropriate defensible space, street widths and grade to accommodate emergency vehicles and evacuees simultaneously.
- Policy PS4O: Strive to maintain and augment mutual and automatic aid agreements with the California Department of Forestry & Fire Protection (CAL FIRE) and Shasta County. Support local fire protection agencies with efforts to seek funding for development and implementation of a continuous vegetation management program in fire hazard severity zones and WUI regions.
- Policy PS4P: Continue to promote fire prevention through education and public-awareness programs in partnership with local, State and Federal agencies, as resources permit. Update the fire hazard severity zone mapping as new data becomes available and ensure availability and accessibility of these maps to the community.
- Policy PS4Q: Work toward educating the residents on the importance of fire safety, prevention, and emergency preparedness including vegetation management, decreasing fuel loads, hardening homes and structures, maintaining defensible space, and public safety notifications, to the extent feasible.
- Policy PS11A: Strive to ensure that emergency personnel receive adequate training in traffic-control and evacuation procedures as required by the City's Emergency Operations Plan.
- Policy PS11B: Evacuation routes contained within the City's Emergency Operations Plan should be published and reinforced in public materials as a general guide for improving the awareness and preparedness of residents located in high-hazard areas, as appropriate.
- Policy PS11C: Consider implementing an emergency evacuation plan and consistently educate residents on:
    - Access: Evacuation routes laid out for residents to use in case of emergency.
    - Signage: Signage, wayfinding, and designated evacuation routes.
    - Communication: Timely notices that may arrive through multiple communication avenues.
    - Assistance: Available assistance programs to aid resident evacuation during emergency.

5.18.4 IMPACT DISCUSSION

WILD-1	Development under the 2023-2045 General Plan Update could substantially impair an adopted emergency response plan or emergency evacuation plan. [Threshold WILD-1].

The City of Redding has prepared an EOP to ensure the most effective allocation of resources during times of emergency for the maximum benefit and protection of the population. Additionally, the City's LHMP and REU's Wildfire Mitigation Plan provide strategies and mitigation measures to address local fire hazards. Furthermore, the County's Community Wildfire Protection Plan (CWPP) assists the community to define the level of risk, assess vulnerability, provide guidance for reducing risks, manage vegetation fuels, increase preparedness, formulate pre-fire response and evacuation plans, and increase community resiliency to allow residents and businesses to return living conditions to normal as quickly as possible (Western Shasta RCD 2016). Additional resources from the County, including the Shasta-Trinity Strategic Fire Plan, the Shasta County Multi-Hazard Mitigation Plan, and the Shasta County EOP address the fire hazard responses and mitigation strategies for forestlands surrounding the Redding urban area. The City is actively developing its CWPP and intends to include appropriate provisions in the Zoning Ordinance which is anticipated to be completed in 2024.

The 2023-2045 General Plan Update has proposed a reduced Planning Area boundary that largely matches the City's 2014 designated SOI of approximately 86 square miles but includes the Churn Creek Bottom area. These changes aim to focus on inward expansion for future growth in Redding and ultimately reduce the amount of fire hazard area lands under the City's jurisdiction. In addition, no substantive land use changes are proposed under the Plan. Buildout would not result in substantial changes to the circulation patterns or emergency access routes in the city or SOI, as identified in the City's LHMP and EOP. The Emergency Management Division of the RFD coordinates emergency management functions within Redding, and the RFD adheres to the Standardized Emergency Management System (SEMS) and the National Incident Management System (NIMS) (CalEMA 2009). During an emergency, standard emergency response procedures of the Redding Police Department and RFD are conducted in tandem. The RFD also works with an array of community partners, including utility service provides (water, power, sanitation), schools, residents, community organization, and other local stakeholders to enforce fire-safety protocols. Mutual aid agreements are also maintained with numerous surrounding local, state, and federal agencies to allow for appropriate backup services in case of an emergency, disaster, or other similar event.

Future development would be required to comply with applicable fire and building codes. To ensure emergency services in the city and SOI are not impaired by future development, all development projects in the city and SOI are reviewed by the RFD, prior to approval. In accordance with the California Fire Code, the RFD requires site design to consider fire access. Several of these requirements include vegetation management requirements, construction standards, and subdivision and building access, among others

(Redding 2021). New development is required to comply with these regulations to provide sufficient clear emergency vehicle access.

Additionally, proposed General Plan contains the following policies would ensure effective emergency response:

- Policy PS4A: Strive to maintain an Insurance Service Office (ISO) rating of 3 or better.
- Policy PS4B: All new development and redevelopment projects should meet state and local standards for fire protection; encourage the upgrade of existing structures to current standards. Encourage the installation of smoke detectors in residential and commercial facilities constructed prior to the requirement of their installation, as appropriate.
- Policy PS4J: Utilize techniques, as determined appropriate by the Fire Marshal, to reduce fire damage in those areas with a high wildland fire potential.
- Policy PS4K: Enforce subdivision regulations that generally limit cul-de-sac lengths to no greater than 600 feet and strive to ensure that sufficient emergency-vehicle turnaround areas are provided.
- Policy PS4L: Apply as appropriate, subdivision regulations requiring each residential development having 50 or more dwelling units and each commercial development employing 150 or more people to have at least two connected points of public access as may be determined necessary by the Fire Marshal.
- Policy PS4M: Seek to construct emergency-vehicle access routes to open-space areas at optimal locations within projects during the development process, as funding or law allows. As funding and physical conditions allow, construct such access routes in existing developments where warranted.
- Policy PS4N: Strive to ensure new subdivisions have adequate fire protection measures such as multi-access for firefighting apparatus, noncombustible building construction, appropriate defensible space, street widths and grade to accommodate emergency vehicles and evacuees simultaneously.
- Policy PS4O: Strive to maintain and augment mutual and automatic aid agreements with the California Department of Forestry & Fire Protection (CAL FIRE) and Shasta County. Support local fire protection agencies with efforts to seek funding for development and implementation of a continuous vegetation management program in fire hazard severity zones and WUI regions.
- Policy PS11A: Strive to ensure that emergency personnel receive adequate training in traffic-control and evacuation procedures as required by the City's Emergency Operations Plan.
- Policy PS11B: Evacuation routes contained within the City's Emergency Operations Plan should be published and reinforced in public materials as a general guide for improving the awareness and preparedness of residents located in high-hazard areas, as appropriate.

- Policy PS11C: Consider implementing an emergency evacuation plan and consistently educate residents on:
    - Access: Evacuation routes laid out for residents to use in case of emergency.
    - Signage: Signage, wayfinding, and designated evacuation routes.
    - Communication: Timely notices that may arrive through multiple communication avenues.
    - Assistance: Available assistance programs to aid resident evacuation during emergency.

As discussed in Chapter 3, *Project Description*, the proposed project includes updates to existing goals, policies, and programs in the Redding General Plan. All future development, regardless of whether it includes new development or redevelopment, is required to comply with adopted local, regional, and State plans and regulations addressing emergency access, response, and evacuation. However, even with these requirements, construction of new development or redevelopment could cause a temporary impairment of an evacuation route due to road closure, and therefore impacts would be potentially significant.

Level of Significance without Mitigation: Impact WILD-1 would be potentially significant.

Mitigation Measures

WILD-1: Project applicants proposing development within a Very High Fire Hazard Severity Zone shall prepare a Traffic Control Plan to ensure that construction equipment or activities do not block roadways during the construction period. The Traffic Control Plan shall be submitted to the Redding Fire Department and Police Department for review and approval prior to approval of building permits.

WILD-2 Development under the 2023-2045 General Plan could exacerbate wildfire risks due to slope, prevailing winds, and other factors, thereby exposing project occupants to elevated particulate concentrations from a wildfire. [Threshold WILD-2]

The City of Redding and its SOI are vulnerable to and at significant risk of wildfires. Bordered by forest and woodlands, the City is in proximity to areas with fuel mixes that could easily ignite and encroach into the community. During a wildfire event, people within the air basin would be exposed to elevated levels of particulates. The type and extent of vegetation and fuel, wind and climatic patterns, general topography and canyons, and other local characteristics make the city more vulnerable to wildfires.

Figure 5.18-2 depicts the CAL FIRE mapped VHFHSZ's in Redding and its SOI. The VHFHSZ includes areas potentially threatened by wildfires based on historical fire activity and prevalent vegetation types. Residential neighborhoods, commercial zones, and open space areas are all located in VHFHSZ areas. Development associated with buildout of the General Plan Update would result in new development in VHFHSZ areas. To protect development in the VHFHSZ, the City requires adherence to a wide range of state

and local codes (California Fire Code, CAL FIRE fire safe design requirements, City Fire and Public Works Standards, RFD wildfire requirements, and other standards). Because development in these areas presents challenges for fire protection and suppression, development in these areas would be required to abide by those requirements.

Additionally, several policies in the 2023-2045 General Plan's Public Safety Element emphasize and require fire-safe development in the City. Policy PS4B requires that all new development and redevelopment meet state and local standards for fire protection; Policy PS4D directs the City to enforce existing codes and to include the Fire Department in the project review process; Policy PS4H directs the City to work with local water districts to ensure that district systems are developed, maintained, and monitored to provide minimum fire-flow, rates, and peak-load capacity for fire suppression; and Policy PS4N would ensure that new subdivisions have adequate fire protection measures such as multi-access for firefighting apparatus, noncombustible building construction, appropriate defensible space, street widths and grade to accommodate emergency vehicles and evacuees simultaneously.

As shown in Figure 5.7-3, *Landslide Susceptibility*, in Section 5.7, *Geology and Soils*, a significant portion of the west side of the City contains steep slopes with high landslide susceptibility. Construction of potential future development in these areas may require grading and site preparation activities that could change the slope of a single parcel or site. However, all potential future development within Redding would be required to comply with the California Building Standards Code, SRA Fire Safe Regulations, and the requirements in the Redding Municipal Code, Chapter 9.20, Fire Code, which include standards to minimize the ignition and spread of wildfire due to slopes. Policy CDD6B in the proposed Community Development and Design Element also directs the City to consider establishing hillside development standards to decrease allowable residential densities with increase in site slope, limit excessive grading on slopes, encourage use of multiple levels where appropriate, and minimize deforestation and disturbance of native vegetation outside the approved building footprint and street and utility corridors, while considering the Local Hazard Mitigation Plan (LHMP) for wildland fire protection.

Other factors, such as vegetation, have the potential to exacerbate wildfire risks. During late summer and fall when temperatures are high, relative humidity is low, and winds are high, forests and brush vegetation can dry out, particularly in areas with unirrigated vegetation, becoming extremely flammable and increasing wildfire risks. As described in Section 5.18.1.1, *Regulatory Framework*, the Redding LHMP and Shasta County Community Wildfire Protection Plan contain several vegetation management, fuel reduction, fuel break, chipper programs, and projects to reduce the uncontrolled spread of wildfire due to vegetation. Additionally, all potential future development within wildfire-prone areas in Redding would be required to comply with SRA Fire Safe Regulations, Public Resources Code Section 4291, and the California Fire Code. These regulations have specific requirements for new and existing development to create defensible space and extensive fuel reduction within 100 feet of a structure, an ember-resistant zone within 5 feet of a structure, and the overall maintenance of properties to reduce the risk of uncontrolled fires or the spread of fires to other properties.

Furthermore, the proposed 2023-2045 General Plan contains policies and actions for existing, new, and redevelopment projects that integrate with the LHMP, Community Wildfire Protection Plan, and other State and regional regulations to reduce wildfire risks associated with vegetation.

- Policy PS4E: Consider developing and funding a comprehensive vegetation management and weed-abatement program, beyond the wildfire mitigation through the Electric Utility, for City-owned properties, open-space areas, including those that are located in existing subdivisions and in new developments to prevent and reduce the risk of fire.
- Policy PS4G: Consider establishing a program to construct and maintain fire-access roads in ravine areas considered to have a very high fire danger to enhance the ability to suppress wildland fires. These roads need not be surfaced and may also function as part of the City's trail system. Erosion and impacts to native vegetation and natural features should be minimized.
- Policy PS4Q: Work toward educating the residents on the importance of fire safety, prevention, and emergency preparedness including vegetation management, decreasing fuel loads, hardening homes and structures, maintaining defensible space, and public safety notifications, to the extent feasible.

Adherence to the above building practices, fire safety regulations, and vegetation fuel management requirements would reduce the potential for exacerbating wildfire risks. However, due to the programmatic nature of this analysis, the unknown details and potential impacts of specific future potential development projects under the 2023-2045 General Plan and the possibility of potential future development being located in wildfire-prone areas, impacts would still be potentially significant.

Level of Significance Before Mitigation: WILD-2 would be potentially significant.

Mitigation Measures

As discussed previously, implementation of the proposed 2023-2045 General Plan could increase population, buildings, and infrastructure in wildfire-prone areas. With implementation of the General Plan 2040 policies and actions, and mandatory wildfire hazard reduction measures per state regulations, impacts related to exacerbating the risk of pollutant concentrations from wildfire and the uncontrolled spread of wildfire could be reduced, but not necessarily to a less-than-significant level.

As listed above, the proposed 2023-2045 General Plan contains policies that require existing development, new, and redevelopment projects to create and maintain fire-safe vegetation around structures and roadways, enforcement of fire-safe standards, and creation of fuel breaks. These policies and actions would not increase the number of people, buildings, and infrastructure, but would also not prohibit development under the proposed General Plan; however, they would provide the best wildfire hazard-reduction measures available.

However, the only way to fully avoid the wildfire impact from implementation of the proposed General Plan is to not allow development in areas within High and Very High Fire Hazard Severity Zones and the WUI, thereby eliminating the wildfire impact. However, doing so is not feasible or practical as the City has a responsibility to meet other obligations, such as promoting both economic development and corresponding residential development, as required by State housing law, within its adopted growth boundaries. This conclusion does not prevent a finding of less-than-significant impacts at the project level; however, due to potential unknown impacts from future development under the 2023-2045 General Plan, impacts at the programmatic level would remain significant and unavoidable.

Level of Significance After Mitigation: WILD-2 would be significant and unavoidable.

WILD-3	The 2023-2045 General Plan would not require the installation and maintenance of associated infrastructure in areas that are undeveloped or vacant, which could exacerbate fire risk or result in temporary or ongoing impacts to the environment. [Threshold WILD-3]

Buildout of the proposed General Plan could result in additional infrastructure, such as roadways and transmission lines, in underdeveloped and undeveloped areas of the Planning Area in order to serve new development. Some of this new infrastructure would likely be constructed in the WUI or VHFHSZ. These types of improvements would involve temporary construction and result in changes to the existing built environment. The installation and operation of new aboveground power transmission lines would create a higher risk of exacerbating wildfire risks compared to other infrastructure. However, several policies in the Community Development and Design Element direct the City to underground new and existing electrical transmission lines.

- Policy CDD18A: Place new electric distribution lines underground in new development where feasible.
- Policy CDD18B: Place existing overhead distribution lines underground upon development of the abutting property where feasible.
- Policy CDD18C: Consider establishing a mechanism to systematically replace underground distribution lines in existing neighborhoods and commercial areas as funding sources are identified.

Additionally, the CPUC requires maintenance of vegetation around power lines, strict wire-to-wire clearances, annual inspections of aboveground power lines, and the preparation of fire prevention plans for aboveground power lines in high fire-threat districts. In addition, the REU Wildfire Mitigation Plan establishes requirements for vegetation management around power equipment. These measures would reduce the wildfire risks associated with the installation and maintenance of power lines.

Any development or redevelopment in the wildfire-prone areas of the City would also be required to comply with building and design standards in the California Building Code and California Fire Code, which include provisions for fire-resistant building materials, the clearance of debris, and fire safety requirements during

demolition and construction activities. Public Resources Code Section 4291 also requires vegetation around buildings or structures to maintain defensible space within 100 feet of a structure and an ember-resistant zone within 5 feet of a structure. Additionally, SRA Fire Safe Regulations would prevent structures from being placed within 30 feet of a roadway, reducing the potential for new roadways to exacerbate wildfire risks. These measures, along with policies and actions in the 2023-2045 General Plan for undergrounding of power lines, creation and maintenance of fuel breaks, and ensuring adequate emergency water supply would minimize wildfire risks associated with the installation and maintenance of infrastructure.

Such infrastructure and maintenance activities would also be required to comply with the adopted State regulations, Redding Municipal Code standards, and proposed General Plan 2040 policies and actions to mitigate the impact of infrastructure on the environment. Therefore, impacts would be less than significant.

Level of Significance Before Mitigation: WILD-3 would be less than significant.

Mitigation Measures

No mitigation measures are required.

WILD-4	The proposed project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. [Threshold WILD-4]

Catastrophic wildfires, such as the 2018 Carr Fire, can create favorable conditions for other hazards, such as flooding and landslides during the rainy season. Wildfires on steep slopes can burn the vegetation that stabilizes the slope and create hydrophobic conditions that prevent the ground from absorbing water. This can lead to landslides, debris flows, and flooding. A project would result in a significant impact if—due to slopes, drainage patterns, or post-fire slope instability—it would expose people or structures to significant risks from landsides, debris flows, or flooding.

As discussed in Chapter 5.10, *Hydrology and Water Quality*, Redding contains lands within the 100-year, 200-year, and 500-year floodplain. As shown in Figure 5.10-3, *Flood Zones Map*, floodplains are primarily concentrated around the Sacramento River and numerous tributary streams that travel through the city. As discussed in Chapter 5.7, *Geology and Soils*, the western and northern portions of the city are in landslide-susceptible areas, with many of the moderate to high landslide potential areas coinciding with Very High Fire Hazard Severity Zones. Many of the high landslide potential areas are on the steep slopes of canyons that have been carved out by rivers and creeks, creating overlapping flood-prone and landslide-prone areas in the steep slopes of the western portion of the city. This overlap may cause areas outside of a flood hazard or landslide-susceptible zone to be affected by runoff, post-fire slope instability, or drainage changes following a wildfire.

Potential future development under the 2023-2045 General Plan could contribute to post-fire slope instability or drainage changes upstream. However, proposed Public Safety Element Policy PS1C would require project proponents to determine, as required by the Building Official and/or City Engineer, the landslide, slope-instability, and erosion potential of proposed development sites located in potential hazard areas and utilize building setbacks, grading techniques, or appropriate measures when constructing in or near unstable areas. Policy PS2E limits new development in the 100-year floodplain, except when if it can be demonstrated that such encroachments will not impact other properties or significantly contribute to a cumulative effect of other encroachments.

Additionally, all new development in the City is required to comply with State and local regulations, such as the California Building Code and Redding Municipal Code, both of which have provisions. For example, Section 1803 of the 2022 California Building Code requires a geotechnical investigation that must assess existing landslide susceptibility on a project site. The Redding Municipal Code, Chapter 16.12, Clearing, Grading, Fills and Excavation also requires a grading permit to control erosion and slope stability.

Moreover, the proposed General Plan Public Safety Element contains Policy PS1B, requiring geotechnical investigations for development on sites with potential hazards and Policy PS4F, directing the City to facilitate post-fire recovery of open space areas by supporting efforts to stabilize slopes, control erosion, and replant areas with native species as appropriate. Furthermore, the 2023-2045 General Plan Public Safety Element contains the following policies and actions to minimize runoff and prevent flooding:

- Policy PS2A: Continue to participate in the National Flood Insurance Program to ensure the availability of federally sponsored floodplain insurance for City residents.
- Policy PS2B: Continue efforts to reduce flood insurance premiums for City residents by restricting floodplain development and participating in the federal Community Rating Service Program.
- Policy PS2C: Consider the update of the Community Development and Design Element and the General Plan Diagram to reflect the current floodplain mapping data provided by FEMA and local studies such as the City's Montgomery Watson study. As funding is available, update these local studies to ensure that they reflect the best available information. Make maps available and accessible showing updated flood projections from a 100-year storm event; update the maps as new information is available.
- Policy PS2D: Work with local, regional, State and Federal agencies to maintain an adequate information base, prepare risk assessments, identify strategies, and seek appropriate funding for mitigation and flood protection.
- Policy PS2E: Strive to preserve the river and creek corridors, and strictly limit development in areas subject to flooding from a 100-year storm event. Allow minor encroachments into floodplains if it can be demonstrated that such encroachments will not impact other properties or significantly contribute to a cumulative effect of other encroachments.

- Policy PS2F: Continue to utilize the Storm Drain Utility or similar measures, as funding mechanisms for necessary drainage improvements throughout the City.
- Policy PS2G: Continue to require that individual development projects mitigate their stormwater impacts in accordance with City Council Policy 1806 (Floodplain Development and Stormwater Detention) and/or other policy or regulations that the City may establish for this purpose.
- Policy PS2H: Continue to require new development and redevelopment projects to minimize hazards of flooding and demonstrate that existing and/or planned (on- or offsite) drainage facilities are sized to accommodate project storm runoff and to prevent or mitigate off-site increase in peak runoff rates and flood elevations.
- Policy PS2I: Require that critical public facilities, such as hospitals, emergency shelters, emergency command centers, fire and police stations, and similar facilities be designed to mitigate potential flood risk to ensure operation during a flood event, to the extent feasible.
- Policy PS2J: Adhere to the requirements of the City's National Pollutant Discharge Elimination System (NPDES) MS4 Permit, including, but not limited to the periodic inspection of stormwater channels for vegetation build-up or encroachment, trash and debris, silt and gravel build-up, erosion or any other obstruction to reduce the risk of localized flooding. Work to alleviate pre-existing flooding conditions that are a result of past practices and regulations.

New development complying with these policies and actions in the 2023-2045 General Plan would not expose people or structures to downslope landslides or downstream flooding due to post-fire hazards. Furthermore, as identified in Impacts WILD-1 and WILD-2, above, development under the 2023-2045 General Plan must also comply with best management practices regarding wildfire prevention, action, and recovery as outlined in the Redding EOP, LHMP, and Community Wildfire Protection Plan. All future development, regardless of the location, is required to comply with adopted local, regional, and State plans and regulations addressing wildfire prevention, which would minimize risks of post-fire hazards. As such, compliance with these policies and regulatory requirements would ensure impacts from post-fire instability would be less than significant.

Level of Significance Before Mitigation: WILD-4 would be less than significant.

Mitigation Measures

No mitigation measures are required.

5.18.5 CUMULATIVE IMPACTS

WILD-5	The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in less-than-significant cumulative impacts with respect to wildfire. [Threshold WILD-5]

The cumulative setting includes potential future development in Redding and the surrounding region. Future development under the proposed project would not exacerbate wildfire risks due to the installation or maintenance of infrastructure and would not cause downslope or downstream post-fire flooding or landslide hazards. Potential impacts to emergency response and evacuation plans would be minimized through the implementation of Mitigation Measure WILD-1. Cumulative development in adjacent jurisdictions would be subject to the same State regulations. Although federal lands would not be subject to State regulations, they would still be subject to the National Cohesive Wildfire Management Strategy and the Health Forests Restoration Act, in addition to specific wildfire management provisions implemented by the USFS.

However, the proposed project would result in significant and unavoidable impacts where it would potentially expose project occupants to pollutant concentrations from a wildfire or uncontrolled spread of a wildfire due to slope, prevailing winds, or other factors, as described in Impact WILD-2. The addition of other proposed development projects in adjacent jurisdictions, including federal lands, would have the potential to contribute to cumulative wildfire risks. These projects would have the potential to result in significant environmental impacts and they could also potentially expose project occupants to pollutant concentrations from a wildfire or uncontrolled spread of a wildfire due to slope, prevailing winds, or other factors. These would potentially result in cumulatively considerable impacts when taken into consideration with the General Plan. In general, the increase of potential development projects within the SRA or Very High Fire Hazard Severity Zone would result in a cumulatively significant impact, and since contributions from the proposed project would result in significant impacts, the proposed project would result in cumulatively considerable impacts. Therefore, cumulative wildfire impacts would be potentially significant.

Level of Significance Before Mitigation: WILD-5 would be potentially significant.

Mitigation Measures

Implement Mitigation Measure WILD-1. There are no additional feasible mitigation measures available to reduce this cumulative impact to a less-than-significant level.

Level of Significance After Mitigation: WILD-5 would be significant and unavoidable.

5.18.6 REFERENCES

Arthur, D. & Chapman, M. 2021, October 3. Fawn Fire near Redding 100% contained; cost $25 million to suppress. Redding Record Searchlight. https://www.redding.com/story/news/2021/10/03/fawn-fire-near-redding-100-contained-cost-25-million-suppress/5983085001/

Balch, Jennifer; Bradley, Bethany; Abatzoglou, John, et. al. 2017, March 14. Human-Started Wildfires Expand the Fire Niche Across the United States. Proceedings of the National Academy of Sciences (PNAS): Volume 114 No. 11, https://www.pnas.org/content/pnas/114/11/2946.full.pdf.

California Department of Corrections and Rehabilitation (CDCR). 2022. Sugar Pine Conservation Camp #9, https://www.cdcr.ca.gov/facility-locator/conservation-camps/sugar-pine/ accessed April 21, 2022.

California Department of Forestry and Fire Protection (CAL FIRE). 1999. Learning to Live with Fire, https://www.fire.ca.gov/media/8657/live_w_fire.pdf.

———. 2008. Very High Fire Hazard Severity Zones in LRA: Redding. https://osfm.fire.ca.gov/media/5992/redding.pdf

———. 2018. 2018 Strategic Fire Plan for California, https://osfm.fire.ca.gov/media/5590/2018-strategic-fire-plan-approved-08_22_18.pdf.

———. 2019. “Know The Law For Defensible Space And Hardening Your Home.” https://www.readyforwildfire.org/more/fire-safety-laws/#:~:text=By%20following%20the%20law%2C%20you,mile%20away%20from%20a%20wildfire.

———. 2020. California Code of Regulations Title 14 Natural Resources Division 1.5 Department of Forestry Chapter 7- Fire Protection Subchapter 2 SRA Fire Safe Regulations Articles 1-5. https://humboldtgov.org/DocumentCenter/View/95813/SRA-Fire-Safe-Regulations-2020-PDF

———. 2022, January 13. Top 20 Most Destructive California Wildfires. https://www.fire.ca.gov/media/t1rdhizr/top20_destruction.pdf

———. 2023a, February 20 (Accessed). “Stats and Events.” https://www.fire.ca.gov/stats-events/.

———. 2023b, June 14 (Accessed). Carr Fire. https://www.fire.ca.gov/incidents/2018/7/23/carr-fire

California Emergency Management Agency (CalEMA). 2009. Standardized Emergency Management System Guidelines. https://www.calbo.org/sites/main/files/fileattachments/eoc_info_12_sems_guidelines_complete.pdf?1558563094

California Public Utilities Commission (CPUC), 2021. CPUC Fire Safety Rulemaking Background. https://www.cpuc.ca.gov/industries-and-topics/wildfires/fire-threat-maps-and-fire-safety-rulemaking

———. 2022a, April 4 (Accessed). CPUC High Fire Threat District. https://ia.cpuc.ca.gov/firemap/.

———. 2022b. Press release: CPUC Adopts New Fire-Safety Regulations. http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M201/K352/201352402.PDF.

Chandler, M. 2019, July 26. Carr Fire recovery, 1 year later: Why hundreds of homes still haven't been rebuilt. Redding Record Searchlight. https://www.redding.com/story/news/2019/07/26/carr-fire-rebuilding-homes-shasta-county-families-return-california/1662099001/

Community Planning Assistance for Wildfire. 2019. Final Recommendations for Redding, CA. https://cpaw.headwaterseconomics.org/wp-content/uploads/2020/01/FINAL_CPAW_Redding_Report_2019_Dec-13.pdf

Department of Finance (DOF). 2022, January 1. Table 2: E-5 City/County Population and Housing Estimates, 1/1/2022. https://dof.ca.gov/forecasting/demographics/estimates/e-5-population-and-housing-estimates-for-cities-counties-and-the-state-2020-2022/

Federal Register. 2001, January 4. Urban Wildland Interface Communities Within the Vicinity of Federal Lands That Are at High Risk From Wildfire. https://www.federalregister.gov/documents/2001/01/04/01-52/urban-wildland-interface-communities-within-the-vicinity-of-federal-lands-that-are-at-high-risk-from

ICC Digital Codes, 2019, Chapter 49 Requirements for Wildland-Urban Interface Fire Areas, https://codes.iccsafe.org/content/CAFC2016E0917/chapter-49-requirements-for-wildland-urban-interface-fire-areas, accessed June 18, 2021.

Natural Resources Canada. 2018. Fire Behavior. https://www.nrcan.gc.ca/forests/fire-insects-disturbances/fire/13145.

Pacific Biodiversity Institute. 2007. Roads and Wildfires. http://www.pacificbio.org/publications/wildfire_studies/Roads_And_Wildfires_2007.pdf.

Redding, City of. 2008, July. Fire Safe Building Construction and Methods for Wildland-Urban Interface Fire Areas. https://www.cityofredding.org/home/showdocument?id=3650

———. 2014, September. Emergency Operations Plan. https://www.cityofredding.org/home/showpublisheddocument/23422/637188367475300000

———. 2022a, December 20. City of Redding Municipal Code, Ordinance No. 2656. https://library.municode.com/ca/redding/ordinances/code_of_ordinances?nodeId=1188757

———. 2022b. Wildfire Information Map. https://redding.maps.arcgis.com/apps/webappviewer/index.html?id=94b379a91e0f47cb91712da22f603d39

_____. 2023, February. City of Redding Local Hazard Mitigation Plan 2022-2027. https://www.cityofredding.org/home/showpublisheddocument/28877/638131951485400000

Redding Electric Utility. 2021, December 7. Wildfire Mitigation Plan. https://www.cityofredding.org/home/showpublisheddocument/25486/637750022290300000

Shasta Area Safety Communications Agency (SHASCOM). 2022. http://www.shascom911.com/

Shasta County & City of Anderson. 2017, November 16. Multi-Jurisdictional Hazard Mitigation Plan. https://www.co.shasta.ca.us/docs/libraries/public-works-docs/hmp-documents/shasta-county-hazard-mitigation-plan-november-2017.pdf

Shasta County Office of Emergency Services. 2014, September. Emergency Operations Plan. https://www.shastacounty.gov/sites/default/files/fileattachments/county_administrative_office/page/2388/entire-eop-458-pp.pdf

Weather Spark. 2023, February 22. Climate and Average Weather Year Round in Redding. https://weatherspark.com/y/664/Average-Weather-in-Redding-California-United-States-Year-Round

Western Shasta Resource Conservation District (RCD).2016. Shasta County Communities Wildfire Protection Plan. https://www.shastafiresafe.org/_files/ugd/80da86_1dc5754f4f184d4ba5f1c6f66b84a28b.pdf

This page intentionally left blank.

6. *Other CEQA Assessment*

Section 15126(b) of the California Environmental Quality Act (CEQA) Guidelines requires an Environmental Impact Report (EIR) to describe any significant impacts of the proposed Project, including those which can be mitigated but not reduced to a level of insignificance. Significant impacts of a proposed Project that cannot be reduced to a less than significant level are referred to as *significant and unavoidable impacts*. This chapter provides an overview of the significant and unavoidable impacts of the proposed Project, as well as impacts found not to be significant, growth inducement, significant and unavoidable impacts, and significant irreversible changes.

A more detailed analysis of the effects the proposed Project would have on the environment, and proposed mitigation measures to minimize significant environmental impacts, are provided in Sections 5.1 through 5.18 of this EIR.

6.1 SIGNIFICANT ENVIRONMENTAL EFFECTS OF THE PROPOSED PROJECT

Sections 5.1 through 5.18 of Chapter 5, Environmental Evaluation, of this EIR evaluate the significant effects of the proposed Project and provide mitigation for impacts that can be reduced to a less than significant level. Each chapter discusses the significant impact and provides a corresponding mitigation measure. The mitigation measures are summarized in Chapter 1, Executive Summary, of this EIR.

6.2 SIGNIFICANT ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED IF THE PROPOSED PROJECT IS IMPLEMENTED

Pursuant to Section 15126.2(b) of the CEQA Guidelines, this EIR considers the significant environmental effects that cannot be avoided if the proposed project is implemented. Impacts of the proposed project can be reduced to less than significant except for:

Agricultural and Forestry Resources

- Impact AG-1: The proposed project would convert Prime Farmland to urban land use.
- Impact AG-3: The proposed project would result in loss of forest land or conversion of forest land to non-forest use.

- Impact AG-5: The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in significant and unavoidable cumulative impacts with respect to agricultural and forestry resources.

Air Quality

- Impact AQ-1: The proposed project would conflict with or obstruct implementation of the 2021 Air Quality Attainment Plan.
- Impact AQ-2: Construction of the proposed project would generate regional and localized emissions of criteria air pollutants or precursor emissions in excess of the SCAQMD thresholds, resulting in a cumulatively considerable net increase of criteria pollutants for which the project region is non-attainment under an applicable federal or state ambient air quality standard and potentially exposing sensitive receptors to substantial pollutant concentrations.
- Impact AQ-3: Operation of the proposed project would generate regional and localized emissions of criteria air pollutants or precursor emissions in excess of the SCAQMD thresholds, resulting in a cumulatively considerable net increase of criteria pollutants for which the project region is non-attainment under an applicable federal or state ambient air quality standard and potentially exposing sensitive receptors to substantial pollutant concentrations.
- Impact AQ-5: The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in significant cumulative impacts with respect to air quality.

Biological Resources

- Impact BIO-6: The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in significant and unavoidable cumulative impacts with respect to biological resources.

Cultural Resources

- Impact CULT-1: The proposed project could cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5.

Greenhouse Gas Emissions

- Impact GHG-1: The project would generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
- Impact GHG-3: Implementation of the proposed project would, in combination with past, present, and reasonably foreseeable projects, result in a cumulative impact with respect to GHG emissions.

Noise

- Impact NOI-2: Buildout of the Planning Area would cause a substantial traffic noise increase on local roadways and could locate sensitive receptors in areas that exceed established noise standards

Wildfire

- Impact WILD-2: Development under the 2023-2045 General Plan could exacerbate wildfire risks due to slope, prevailing winds, and other factors, thereby exposing project occupants to elevated particulate concentrations from a wildfire
- Impact WILD-5: The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in less-than-significant cumulative impacts with respect to wildfire

6.3 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES WHICH WOULD BE INVOLVED IN THE PROPOSED PROJECT SHOULD IT BE IMPLEMENTED

The CEQA Guidelines require that an EIR describe any significant irreversible environmental changes that would be caused by the proposed project if it is implemented. Specifically, Section 15126.2(c) of the CEQA Guidelines states:

> Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highways improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

The following significant irreversible changes would be caused by implementation of the proposed project:

- Conversion of Prime Farmland as discussed in Section 5.2, Agricultural and Forestry Resources, of this EIR. Future development and growth under the proposed project can result in the conversion of farmland to nonagricultural uses that will result in the loss of agricultural lands.
- Conversion of forestland to non-forest land uses to accommodate future demand as discussed in Section 5.2, Agricultural and Forestry Resources.

The commitment of resources required for the future development under the proposed project would reduce the availability of resources for future generations or for other uses during the life of the proposed project.

6.4 GROWTH-INDUCING IMPACT OF THE PROPOSED PROJECT

Pursuant to Sections 15126(d) and 15126.2(d) of the CEQA Guidelines, this section is provided to examine ways in which the proposed project could foster economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment. To address this issue, potential growth-inducing effects will be examined through analysis of four questions:

- Would this project remove obstacles to growth, e.g., through the construction or extension of major infrastructure facilities that do not presently exist in the project area, or through changes in existing regulations pertaining to land development?
- Would this project result in the need to expand one or more public services to maintain desired levels of service?
- Would this project encourage or facilitate economic effects that could result in other activities that could significantly affect the environment?
- Would approval of this project involve some precedent-setting action that could encourage and facilitate other activities that could significantly affect the environment?

Please note that growth-inducing effects are not to be construed as necessarily beneficial, detrimental, or of little significance to the environment. This issue is presented to provide additional information on ways in which this project could contribute to significant changes in the environment, beyond the direct consequences of developing the land use concept examined in the preceding sections of this EIR.

Would this project remove obstacles to growth, e.g., through the construction or extension of major infrastructure facilities that do not presently exist in the project area, or through changes in existing regulations pertaining to land development?

The proposed project would include the Community Development and Design Element which determines the City's potential growth for the next 22 years. The Community Development and Design Element will exert a strong influence on how the City will grow in the coming decades and significantly impact the quality of life of the community as well as guide physical changes that exclusively occur based on market demand. As shown in Table 3-1, *Planning Boundaries*, in Chapter 3, *Project Description*, the Redding Planning Area, SOI, City limits, primary and secondary growth areas are shown. The new growth is focused in areas of the city where services exist or can be expanded/extended to serve additional and more intensive development where appropriate. The proposed project aims at pursuing urban infill projects which would allow for more accessible transit and walkability thus reducing vehicle miles traveled and subsequent greenhouse gas emissions.

Would this project result in the need to expand one or more public services to maintain desired levels of service?

Impacts to public services are discussed in Section 5.15, *Public Services and Recreation*, of this EIR. It should be noted that the proposed project does not any propose any land use actions or development that would induce population growth. However, as new development occurs, under the proposed project, new or expanded public service facilities may be needed to support the associated population growth. It is not known at this point when such public facilities would be required or what the exact nature of these facilities would be. As a result, it cannot be determined what project-specific environmental impacts would occur from their construction and operation. The potential impacts would be identified during the facility planning process. As mentioned in Chapter 3, Project Description, of the EIR, the new growth is focused in areas of the city where services exist or can be expanded/extended to serve additional and more intensive development where appropriate.

Would this project encourage or facilitate economic effects that could result in other activities that could significantly affect the environment?

The General Plan Update includes the Economic Development Element which contains policies aimed at increasing economic opportunities in the City. Policy ED3A addresses the need to prepare an inventory of developable industrial land generally free of significant development constraints in order to accommodate projected industrial growth over a 22-year timeframe. This Policy could significantly affect the environment by increasing industrial uses that could change the air quality of the area. However, Policy ED3B states that the City should also pursue environmental mitigation strategies to remove impediments to industrial growth, such as mitigation banks, habitat conservation plans, regional storm-water detention, and air quality programs. In addition, Policy ED6A states that the City should consider developing transportation alternatives to connect the airport with downtown and other vital economic areas. This has the potential economic growth that could affect the surrounding area of the airport and downtown.

Would approval of this project involve some precedent-setting action that could encourage and facilitate other activities that could significantly affect the environment?

As mentioned in Chapter 3, Project Description, of this EIR, the proposed project would designate Primary and Secondary Growth Areas to eliminate areas within the Sphere of Influence (SOI), thus potentially leading to a reduction in the SOI by Shasta LAFCO. The proposed project would not change the existing General Plan, land use classifications and configurations would remain unaffected.

6.5 ENVIRONMENTAL JUSTICE ELEMENT

As part of the City's General Plan Update, State law requires the City to evaluate the potential impacts to disadvantaged communities (DAC's). SB 1000 provides two definitions of a DAC, one based on CalEnviroScreen scores and the other based on the presence of low-income areas with high pollution burden. The City contains 17 census tracts with household incomes at or below 80 percent of the statewide median income, which are considered "low-income areas" under the second definition of a

disadvantaged community under SB 1000. There are four areas that meet the criteria through the analysis of CalEnviroScreen's pollution burden indicators.

The Environmental Justice Element is implemented through the proposed General Plan's Community Health, Wellness, and Environmental Justice Element. The Community Health, Wellness, and Environmental Justice Element would introduce new policies, actions, and goals aim to promote environmental justice and social equity within the City, such as promoting the engagement of environmental justice-affected communities and increases access to public transportation. The addition of these new policies would not enable future development, nor do they detail specific infrastructure improvements or projects. Rather the new policies aim to identify specific environmental justice challenges that affect communities and address these issues. As these policies are either part of a project subject to CEQA or would be the communication and outreach requirements leading to a future action, the policies, actions, and goals would not result in physical environmental impacts.

6.6 THE MITIGATION MEASURES PROPOSED TO MINIMIZE THE SIGNIFICANT EFFECTS

Mitigation measures linked to significant impacts are discussed in Sections 5.1 through 5.18 of this EIR. The mitigation measures are also summarized in Table 1-1, *Summary of Environmental Impacts, Mitigation Measures, and Levels of Significance After Mitigation*, of Chapter 1, Executive Summary.

7. Alternatives

The following chapter is intended to inform the public and decision makers of the feasible alternatives that would avoid or substantially lessen any significant effects of the Project.

7.1 INTRODUCTION

7.1.1 PURPOSE AND SCOPE

The California Environmental Quality Act (CEQA) requires that an environmental impact report (EIR) include a discussion of reasonable project alternatives that would "feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any significant effects of the project and evaluate the comparative merits of the alternatives" (CEQA Guidelines § 15126.6[a]). As required by CEQA, this chapter identifies and evaluates potential alternatives to the proposed project.

Section 15126.6 of the CEQA Guidelines explains the foundation and legal requirements for the alternatives analysis in an EIR. Key provisions are:

- "[T]he discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives or would be more costly." (15126.6[b])
- "The specific alternative of 'no project' shall also be evaluated along with its impact." (15126.6[e][1])
- "The no project analysis shall discuss the existing conditions at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services. If the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives." (15126.6[e][2])
- "The range of alternatives required in an EIR is governed by a 'rule of reason' that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project." (15126.6[f])
- "Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries…, and whether the proponent can reasonably acquire, *control or otherwise have access to the alternative site (or the site is already owned by the proponent)"* (15126.6[f][1]).

- "Only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR." (15126.6[f][2][A])
- "An EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative." (15126.6[f][3])

Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent). No one of these factors establishes a fixed limit on the scope of reasonable alternatives.

For each alternative, this analysis:

- Describes the alternative.
- Analyzes the impact of the alternative as compared to the proposed project.
- Identifies the impacts of the project that would be avoided or lessened by the alternative.
- Assesses whether the alternative would meet most of the primary project objectives.
- Evaluates the comparative merits of the alternative and the project.

According to Section 15126.6(d) of the CEQA Guidelines, "[i]f an alternative would cause…significant effects in addition those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed."

7.1.2 PROJECT OBJECTIVES

As discussed in Chapter 3, Project Description, of this EIR, the following objectives have been established for the proposed project and will aid decision makers in their review of the project, the project alternatives, and associated environmental impacts.

- Advance the City's vision for a resilient, equitable, and healthy community with high-quality development within its urban centers and corridors.
- Maintain the existing land use classifications of the existing General Plan Diagram while addressing the use of development incentives to spur new infill development/redevelopment consistent with the existing land use classifications.
- Encourage a more compact urban form by reducing the Planning Area to a more realistic growth boundary.
- Establish thresholds and maintain roadway and intersection levels of service for the public's health and convenience while striving to minimize increases in vehicle miles travelled from new development.
- Provide park and recreation opportunities throughout the community, including those areas where facilities and services are not available.

- Work with appropriate agencies and organizations to increase resident's access to healthcare, healthy food, transportation options, public services, housing, and healthy neighborhoods.

7.1.3 SUMMARY OF SIGNIFICANT IMPACTS

Agricultural and Forestry Resources

- Impact AG-1: The proposed project would convert Prime Farmland to urban land use.
- Impact AG-3: The proposed project would result in loss of forest land or conversion of forest land to non-forest use.
- Impact AG-5: The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in significant and unavoidable cumulative impacts with respect to agricultural and forestry resources.

Air Quality

- Impact AQ-1: The proposed project would conflict with or obstruct implementation of the 2021 Air Quality Attainment Plan.
- Impact AQ-2: Construction of the proposed project would generate regional and localized emissions of criteria air pollutants or precursor emissions in excess of the SCAQMD thresholds, resulting in a cumulatively considerable net increase of criteria pollutants for which the project region is non-attainment under an applicable federal or state ambient air quality standard and potentially exposing sensitive receptors to substantial pollutant concentrations.
- Impact AQ-3: Operation of the proposed project would generate regional and localized emissions of criteria air pollutants or precursor emissions in excess of the SCAQMD thresholds, resulting in a cumulatively considerable net increase of criteria pollutants for which the project region is non-attainment under an applicable federal or state ambient air quality standard and potentially exposing sensitive receptors to substantial pollutant concentrations.
- Impact AQ-5: The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in significant cumulative impacts with respect to air quality.

Biological Resources

- Impact BIO-6: The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in significant and unavoidable cumulative impacts with respect to biological resources.

Cultural Resources

- Impact CULT-1: The proposed project could cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5.

Greenhouse Gas Emissions

- Impact GHG-1: The project would generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
- Impact GHG-3: Implementation of the proposed project would, in combination with past, present, and reasonably foreseeable projects, result in a cumulative impact with respect to GHG emissions.

Noise

- Impact NOI-2: Buildout of the Planning Area would cause a substantial traffic noise increase on local roadways and could locate sensitive receptors in areas that exceed established noise standards

Wildfire

- Impact WILD-2: Development under the 2023-2045 General Plan could exacerbate wildfire risks due to slope, prevailing winds, and other factors, thereby exposing project occupants to elevated particulate concentrations from a wildfire
- Impact WILD-5: The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in less-than-significant cumulative impacts with respect to wildfire

7.2 ALTERNATIVES CONSIDERED AND REJECTED DURING THE SCOPING/PROJECT PLANNING PROCESS

The following is a discussion of the land use alternatives considered during the scoping and planning process and the reasons why they were not selected for detailed analysis in this EIR.

7.2.1 ALTERNATIVE LOCATION

The proposed General Plan covers the entire City and the Sphere of Influence. Alternative locations are typically included in an environmental document to avoid, lessen, or eliminate the significant impacts of a project by considering the proposed development in an entirely different location. To be feasible, development of off-site locations must be able to fulfill the project purpose and meet most of the project's basic objectives. Given the nature of the proposed project (adoption of a General Plan for the entire city and sphere of influence), it is not possible to consider an off-site alternative because the city boundaries have been established through incorporation and the SOI established by LAFCO. For this reason, an off-site alternative was considered infeasible pursuant to State CEQA Guidelines Section 15126.6(c) and was rejected as a feasible project alternative.

7.2.2 ALTERNATIVE LAND USE PLAN

A reduced density alternative would result in fewer residences and less non-residential development, which would theoretically reduce traffic and thereby reduce community impacts such as air quality, greenhouse gas (GHG) emissions, traffic, noise, and demand for utilities and public services. However, such an alternative would not achieve or would only partially achieve General Plan objectives of providing for growth of the City. This alternative would not provide needed housing as projected by the state Department of Housing and Community Development, increase jobs in the City, or foster growth in the focus and identified opportunity areas rather than in sensitive aeras or through annexation. By significantly restricting growth, the environmental impact of the projected growth would increase development pressure elsewhere in the region. As a reduced development density conflicts with regional plans, would relocate impacts outside of the city, and would not meet the project objectives, this option was not evaluated in this EIR.

7.2.3 NO FURTHER DEVELOPMENT OF HISTORIC STRUCTURES

The environmental analysis identified the potential for future development to modify or remove buildings that could qualify as historic. This alternative would establish a policy to prevent projects that would affect historic buildings. Many of the potentially historic buildings in the City are in and around the downtown and are commercial in nature. Preventing modification of the commercial buildings would limit their economic use and could result in decay and ultimately abandonment of the buildings. Some of the modifications envisioned by the General Plan include adding housing in and near the downtown. This alternative would either prevent or make this effort more difficult. Fewer residents near commerce and employment would increase vehicle miles travelled (VMT) as customers and employees would need to drive downtown. The proposed project includes policy NR9F that, if implemented, would create an inventory of historic buildings and municipal code Section 18.23 Historic/Architectural Preservation regulates how and when historic buildings can be modified. The California Building Code also includes a historic buildings provision that recognizes challenges with these unique resources and allows for improvements consistent with the age and use of the structure. Because the use and reuse of potentially historic buildings is essential to the success of the downtown, and important to ensure that the building owner can continue to maintain the structure(s), this alternative is considered infeasible and not evaluated in this EIR.

7.2.4 TRANSFER OF DEVELOPMENT RIGHTS

For properties that have biological and cultural resources, current City polices allow for clustering of development to ensure that protecting the resource doesn't preclude the ability of the property to be developed efficiently. This alternative would establish a program that would allow owners to extend the transfer of development potential to other land in the City. A transfer of development right (TDR) program is difficult to administer as it requires that the City keep track of development 'potential' created on one parcel and both remove the development potential on that parcel then move the development potential to another receiving property. A program like this would also need to ensure that both the original and receiving properties meet the development expectations established in the General Plan. The ability of a

property owner to cluster development to avoid resources on a site is seen as a sufficient method of encouraging the protection of resources within the City. The City can also consider specific plans or specialized zoning if several parcels are combined to allow protection of resources and allocation of development. Because of the combination of complexity and existing ability to cluster development this alternative is considered infeasible and not evaluated in this EIR.

7.3 ALTERNATIVES SELECTED FOR FURTHER ANALYSIS

Based on the criteria listed above, the following three alternatives have been determined to represent a reasonable range of alternatives which have the potential to feasibly attain most of the basic objectives of the project, but which may avoid or substantially lessen any of the significant effects of the project. These alternatives are analyzed in detail in the following sections.

- No Project/Existing General Plan – This is the only EIR alternative that is specifically required by the CEQA Guidelines (Section 15126.6[e]) The No Project alternative does not represent a no-development or no change scenario as the City has an existing General Plan. Further, the land use diagram in the existing General Plan is unchanged with the proposed project. This alternative will focus on the potential result of not updating the General Plan to include changes to state law that have occurred since the adoption of the current plan in 2000 and not reducing the proposed Planning Area.
- No Annexation – This alternative was selected to reduce or eliminate the potential to convert prime agricultural/forest land to urban uses, reduce exposure to wildfire, and protect biological resources. The alternative would establish a no-expansion beyond the existing city limits policy for the General Plan that would prevent annexation thereby increasing the development potential and land value of infill properties already within the City.
- Increased Intensity – A primary goal of the proposed project is to encourage development consistent with the existing land use pattern of the City, however, as a General Plan update the City can consider changes to the land use pattern. A greater density and intensity would reduce the need for annexation which would reduce the potential to convert prime agricultural/forest land to urban uses, reduce exposure to wildfire, and protect biological resources. This alternative could also reduce vehicle miles travelled (VMT) with corresponding reductions in air quality and greenhouse gas emission impacts.

An EIR must identify an “environmentally superior” alternative and where the No Project Alternative is identified as environmentally superior, the EIR is then required to identify as environmentally superior an alternative from among the others evaluated. Each alternative's environmental impacts are compared to the proposed project and determined to be environmentally superior, neutral, or inferior. Section 7.7 identifies the Environmentally Superior Alternative. The preferred land use alternative (proposed project) is analyzed in detail in Chapter 5 of this DEIR.

7.4 NO PROJECT/EXISTING GENERAL PLAN ALTERNATIVE

The No Project Alternative is required to discuss the existing conditions at the time the notice of preparation is published and evaluate what would reasonably be expected to occur in the foreseeable future if the proposed project is not approved (CEQA Guidelines, Section 15126.6[e]). Pursuant to CEQA, this Alternative is also based on current plans and consistent with available infrastructure and community services. Therefore, the No Project/Existing General Plan Alternative assumes that the proposed project would not be adopted, and the development intensity assumed in the existing General Plan would be followed.

The proposed project would not alter the City's existing land use designations and no new density would be added to the City's Planning Area (PA). However, as discussed in Chapter 3, Project Description, the 2023-2045 General Plan proposes an approximately 24 square mile reduction to the City's existing PA, which is shown in Figure 3-2, in favor of a new PA that would generally match the City's Sphere of Influence (SOI) while still including the Churn Creek Bottom community, as shown in Figure 3-3. The proposed project would also adjust and expand incentives for development within the City's Opportunity Areas and Focus Areas, which are shown in Figures 3-4 and 3-5, respectively. Additionally, the proposed project also includes revisions to the existing General Plan Elements including the addition of new policies; the incorporation of the former Air Quality Element into the proposed Natural Resources Element; and a new Community Health, Wellness and Environmental Justice Element, which are discussed further within Section 3.3.3, *Changes Under the Proposed Project*, in Chapter 3.

Furthermore, the proposed project and existing General Plan both have assumptions and projections for the trajectory of growth within the City over the lifetime of these respective plans. As described under "Land Use Intensity Standards" in the existing Community Development and Design Element, the buildout projections assumed under the existing General Plan are based on the holding capacity of the vacant land within the existing PA. The existing General Plan uses an "assumed typical residential density" for each residential land use designation and the acreage of vacant land within the existing PA under that designation to determine an estimate of developable dwelling units and population, as seen in Table 1-2, General Plan Holding Capacity- Residential Land Uses. The existing General Plan assumed a growth projection of 126,000 residents in the Planning Area by 2020 (as described in the *Introduction* chapter on page 55), which when compared to the City's 1998 population of 78,000 (as cited in the existing Community Development and Design Element), is an average annual growth rate of 2.2 percent. Under this growth rate, the PA would be expected to expand to 161,825 residents by 2045.

As described in Section 3.3.4, *Forecasted Growth Under the Proposed Project*, the growth projections made for the purposes of this EIR were based on the Shasta Regional Transportation Agency's travel demand model which incorporates approved and pending projects in addition to an assumption of higher density growth within the City's proposed Opportunity Areas. As such, the proposed General Plan's growth projections show an average annual growth rate of 0.61 percent from 2020 to 2045, based on an existing population within the City and SOI of 117,938 to a future population in both the City and SOI of 137,377.

While the growth rates under both the existing General Plan and proposed General Plan are highly conservative, the 2023-2045 generally projects a slower rate of growth over its planning horizon. Furthermore, growth under the proposed project would be more constrained than the existing General Plan due to the reduction of the PA under the proposed project.

7.4.1 AESTHETICS

Under the No Project Alternative, the Planning Area would be developed under the current land use plan of the City's General Plan. The City's Municipal Code identifies development standards to ensure quality development in the City. While growth under the No Project Alternative would be subject to existing City policies and regulations pertaining to scenic resources, including the Scenic Highway classifications and policies in the existing General Plan, the proposed project includes goals and policies that are more comprehensive and detailed than those in the existing General Plan. Impacts to aesthetics would be less than significant and would be the same as the proposed project.

7.4.2 AGRICULTURE AND FORESTRY RESOURCES

Under the No Project Alternative, the Planning Area would be developed under the current land use plan of the City's General Plan. Like the proposed project, the No Project Alternative would allow for conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to nonagricultural use because the existing land use plan allows parcels that contain farmland to be developed for nonagricultural uses, as described in Chapter 5.2, *Agriculture and Forestry Resources*. Similarly, the existing land use plan also designates parcels with forestland consists of Blue Oak Woodland, Blue Oak-Foothill Pine, Montane Hardwood, and Valley Oak Woodland land cover types (as defined in Chapter 5.2) for non-forestry uses, therefore allowing the conversion of forest land.

However, as shown in Figure 5.2-2, *Designated Farmland in the Planning Area*, and Figure 5.4-1, *CalVeg Land Cover*, the majority of designated farmland and forestland cover exists outside the developed core of the City on the periphery of the PA and SOI. The proposed project would reduce the size of the PA, eliminating portions of the PA that contain designated farmland or forestland land cover. This Alternative would therefore increase the amount of land that could be converted from agricultural, or forestland when compared to the proposed project. Impacts to agriculture and forestland would remain significant and unavoidable but would be greater than the proposed project.

7.4.3 AIR QUALITY

Under the proposed project, the PA would be reduced, and future development would be more constrained than under the No Project Alternative. The proposed project would also include additional policies targeted toward the improvement and mitigation of air quality impacts through its new Community Health, Wellness, and Environmental Justice Element. Additional new policies in the Community Development and Design and Transportation Elements would also contribute to a further reduction in transportation-related emissions by prioritizing the development of low-stress walk and bikeways and encouraging mixed-use, compact development. As such the proposed project could result in fewer emissions than the No Project

Alternative. However, both would allow the same of level of development intensity which would result in significant and unavoidable impacts, as analyzed within Chapter 5.3, *Air Quality*. While impacts under this alternative would likely be greater than those of the proposed project, they would likely also be significant and unavoidable.

7.4.4 BIOLOGICAL IMPACTS

Under the No Project Alternative, biological resources impacts would be similar to the proposed project. The regulations protecting biological resources in the existing General Plan would be insufficient to mitigate the impacts to biological resources to a less-than-significant level. The proposed project contains a comprehensive set of goals, policies, and regulations that mitigate impacts to biological resources on a project level. However, as determined in Chapter 5.4, *Biological Resources*, cumulative development within the PA could contribute to the ongoing loss of undeveloped lands that support sensitive biological resources. Similarly, under the No Project Alternative, cumulative development within the existing PA could lead to the cumulative loss and displacement of wildlife, resulting in cumulatively considerable impacts. Since most undeveloped lands in the PA are in its periphery, the proposed project could result in fewer impacts to biological resources due to the shrinking of the PA under the proposed project. Future development under this alternative, as with the proposed project, would be required to comply with local, state, and federal regulations to minimize impacts to potential sensitive natural communities. Impacts to biological resources would be significant and unavoidable and would be the same as the proposed project.

7.4.5 CULTURAL RESOURCES AND TRIBAL CULTURAL RESOURCES

Impacts under the No Project Alternative would be similar to the proposed project. Future development under this alternative and the proposed project could result in significant and unavoidable impacts to historic resources. Under the No Project Alternative, statutory requirements protecting cultural resources would still be in effect, but 2023-2045 General Plan policies promoting cultural resource preservation and coordination with local tribes would not be adopted. The goals, policies, and standards that pertain to the designation and preservation of archaeological resources as described in Chapter 5.4, *Cultural Resources and Tribal Cultural Resources*, would be enforced, which would reduce impacts to less than significant. Additionally, compliance with California Health and Safety Code Section 7050.5(b) would reduce impacts to less than significant if human remains are discovered during construction activities. Impacts under this alternative, as with the proposed project, would be less than significant.

7.4.6 ENERGY

Under the No Project Alternative, the existing Planning Area would be developed under the current land use plan of the City's General Plan. Under this alternative, the PA would remain the same size and the growth potential under the existing General Plan would be larger. As such, the proposed project could result in less vacant land on the periphery of the City's growth boundary being developed. The development of land within the portion of the existing PA that would no longer exist within the proposed PA would be low-density and could include relatively more energy-intensive land uses like single-family subdivisions. By

eliminating this land from the proposed PA, the proposed project would incentivize higher density development within the City core that is relatively more energy-efficient than single-family subdivisions since less land would be available for development on the periphery. Impacts under this alternative would be greater than the proposed project, though would remain would be less than significant.

7.4.7 GEOLOGY AND SOILS

Under the No Project Alternative, the existing Planning Area would be developed under the current land use plan of the City's General Plan. Under this alternative, the Planning Area would not be reduced. Development under the No Project Alternative would be subject to the same local, State, and federal regulations as the proposed project; these regulations, as discussed in Section 5.7, *Geology and Soils*, as well as mitigation measures, would reduce the potential impacts to a less-than-significant level.

7.4.8 GREENHOUSE GAS EMISSIONS

Under the No Project Alternative, the existing Planning Area would be developed under the current land use plan, as with the proposed project. As discussed above under Section 7.4.3, Air Quality and Section 7.4.6, Energy, the reduction of the PA under the proposed project could result in more intensive development within the City's core resulting in fewer transportation related emissions and more energy-efficient development. The proposed General Plan's policies related to growth management, mobility improvements, and environmental justice would also help to reduce greenhouse gas emissions when compared to the No Project Alternative. Therefore, while impacts would be significant and unavoidable under both the proposed project and No Project Alternative, impacts would be slightly greater under this alternative.

7.4.9 HAZARDS AND HAZARDOUS MATERIALS

Under both the No Project Alternative and the proposed project, new development would be subject to local, State, and federal regulations that would reduce the potential for hazards and hazardous materials impacts. However, the proposed 2023-2045 General Plan contains new goals and policies to further reduce potentially significant impacts. As discussed above, the proposed project would reduce size of the City's Planning Area, which would eliminate areas within the existing PA that are mapped within Fire Hazard Severity Zones, thereby reducing the potential risk of wildfire hazards for future development. Impacts under this alternative would overall be similar to the proposed project and would be less than significant.

7.4.10 HYDROLOGY AND WATER QUALITY

The No Project Alternative would have similar hydrology and water quality impacts as the proposed project. Future project-specific Water Quality Management Plans would be prepared that would identify best management practices for the future project. Moreover, low-impact development and water quality treatment solutions prescribed in project-specific Water Quality Management Plans would be designed to support or enhance the regional best management practices and efforts implemented by the City. Future projects would be required to comply with federal, State, and local regulations, such as the National

Pollutant Discharge Elimination System (NPDES) and Stormwater Pollution Prevention Plan (SWPPP). Although development under the No Project Alternative would be subject to local, State, and federal regulations that help to address hydrology and water quality impacts, the additional policies and actions related to hydrology and water quality in the proposed General Plan Update would not be adopted. Therefore, impacts would be slightly greater than the proposed project but would remain less than significant.

7.4.11 LAND USE AND PLANNING

Under the No Project Alternative, the existing Planning Area would be developed under the current land use plan of the City's General Plan. The type of land uses allowed would therefore be same as that which would occur under the proposed General Plan Update. The proposed project would result in changes to the City's existing Focus and Opportunity Areas which are areas of the City subject to specific planning efforts and guidelines focused on development and redevelopment.

Although neither the proposed project nor the No Project Alternative would physically divide existing communities within the Redding PA, the proposed General Plan Update includes new policies that would address impacts related to land use conflicts and that are not included in the existing General Plan. Impacts under this alternative would be slightly greater than the proposed project but would remain less than significant.

7.4.12 MINERAL RESOURCES

Under the No Project Alternative, the existing Planning Area would be developed under the current land use plan of the City's General Plan. Under this alternative, the PA would not be reduced, and the City would be guided by the same goals and policies under the existing General Plan. Development under the No Project Alternative would be subject to the same local, State, and federal regulations as the proposed project; these regulations, as discussed in Section 5.12, *Mineral Resources*, would result in similar impacts to the proposed project and would be less than significant impacts.

7.4.13 NOISE

Under the No Project Alternative, the existing Planning Area would be developed under the current land use plan of the City's General Plan. Development intensity under this alternative would generally be similar to the proposed project, and therefore, noise impacts would neither increase nor decrease when compared to the proposed project. Impacts under this alternative, as with the proposed project, would be significant and unavoidable.

7.4.14 POPULATION AND HOUSING

The No Project Alternative would not result in an increase in new residents or additional employees to the Planning Area, beyond what is forecasted in the City's existing General Plan. As discussed above, both the existing and proposed General Plan project conservatively large growth within the Planning Area and both plans would accommodate a similar level of growth in the City. Like the proposed project, this alternative would not displace housing or people. Under both scenarios, impacts to population and housing would be less than significant. As this alternative would not achieve some of the beneficial effects of the proposed project related to housing and employment, the impact of this alternative would be greater than the proposed project but would remain less than significant.

7.4.15 PUBLIC SERVICES AND RECREATION

Under the No Project Alternative, the existing Planning Area would be developed under the current land use plan of the City's General Plan, similar to the proposed project. Under this alternative, the proposed project would not be adopted, which would include no revisions to the City's Planning Area. This alternative would result in a similar level of development to the proposed project and therefore similar impacts to public services. Furthermore, the No Project Alternative would not include new General Plan Update policies and actions that address public services and recreation. Impacts to public services, including fire, police, school, library, and parks and recreational services would be less than the proposed project and would remain less than significant.

7.4.16 TRANSPORTATION

Under the No Project Alternative, the City would continue to be developed under the existing land use plan, similar to the proposed project. However, under the proposed project, new policies would be adopted to prioritize alternative modes of transportation and implement VMT thresholds for the purposes of evaluating future project impacts. As discussed above, the proposed project would also include a reduction to the existing Planning Area potentially resulting in more compact development within the City's core. While future VMT under the No Project Alternative was not evaluated, it can be assumed that that the proposed General Plan's new policies and reduced Planning Area would result in less future VMT per resident when compared to the No Project Alternative. Impacts under this alternative would be slightly greater than the proposed project but would remain less than significant.

7.4.17 UTILITIES AND SERVICE SYSTEMS

Under the No Project Alternative, the existing Planning Area would be developed under the current land use plan, similar to the proposed project. However, a discussed above, the proposed project would include a reduction to the City's existing Planning Area resulting in a more constrained land use pattern. As discussed in Chapter 5.17, *Utilities and Service Systems*, water supply is a concern for development in the Planning Area that is within the Centerville Community Services District and Bella Vista Water District service areas. These service areas include portions of the existing Planning Area that would no longer remain in the proposed Planning Area under the proposed project. Therefore, water supply impacts could

be slightly decreased under the proposed project due since development would generally be more concentrated within the service area of the City's water utility which has enough water to service existing and future development in its service area. Impacts to the City's infrastructure systems would be increased under the No Project Alternative though impacts would remain less than significant.

7.4.18 WILDFIRE

Under the No Project Alternative, the Planning Area would be developed under the City's current land use plan like the proposed project, though the proposed General Plan would include new analysis and wildfire-safety related policies that would help to ensure that wildfire impacts are mitigated to the extent possible. The proposed project would also reduce the size of the Planning Area, as discussed in Section 7.4.9, *Hazards and Hazardous Materials*, and would therefore result in less development within FHSZs. This alternative would in turn result in the potential for more development within a FHSZ when compared to the proposed project. Therefore, wildfire impacts would be increased under the No Project Alternative, but impacts would remain significant and unavoidable.

7.4.19 CONCLUSION

Impacts of the No Project Alternative would be similar for aesthetics, cultural and tribal resources, geology and soils, hydrology and water quality, mineral resources, noise, public services and recreation, and utilities and service systems. Impacts to agricultural and forestland, air quality, biological resources, energy, greenhouse gas emissions, hazards and hazardous materials, land use and planning, population and housing, public services and recreation, transportation, utilities and service systems, and wildfire would be greater than the proposed project, primarily due to the lack of adoption of new and updated policies that would better mitigate impacts and the maintaining of a larger Planning Area. The No Project Alternative would generally meet the project objectives, but to a lesser extent.

7.5 NO ANNEXATION

This alternative would reduce impacts to agriculture and forestland that would occur as the annexation and development occurs and focuses on impacts that would occur if no annexation were proposed. This alternative evaluates development only within city limits with the General Plan Update. This alternative would reduce the extension of services to allow expansion of existing land uses such as Shasta Community College and urban development of the currently unincorporated lands to the west that are classified for high density residential uses. This alternative could reduce the potential for housing near the college, and perhaps impact the ability of future college expansions that together would help reduce VMT. This alternative would include the revisions to the existing General Plan Elements including the addition of new policies; the incorporation of the former Air Quality Element into the proposed Natural Resources Element; and a new Community Health, Wellness and Environmental Justice Element. Under this alternative, no annexation would occur thereby increasing the development potential and land value of infill properties

already within the City. As no annexation will occur this would increase pressure to build at higher densities in the City.

7.5.1 AESTHETICS

Under the No Annexation Alternative, the City would focus development within City limits. Due to the elimination of the annexable land under this alternative, potential impacts related to scenic vistas and visual character would increase as development would be focused within City limits. In addition, this alternative would change the character of the community from rural to citylike which could also cause potential impacts to the visual character of the community. To accommodate all the anticipated development within City limits, future buildings would be constructed at higher densities. The potential impact related to light and glare would reduce as development would be focused within City limits rather than in rural areas. Impacts would be greater under this alternative for aesthetic resources compared to the proposed project but would remain less than significant.

7.5.2 AGRICULTURE AND FORESTRY RESOURCES

Due to the substantial reduction in potential development in the Planning Area, which includes conversion of prime farmland and farmland of local importance as well as forestland (Blue Oak Woodland, Blue Oak-Foothill Pine, Montane Hardwood, and Valley Oak Woodland land cover types), under this alternative would be less than those identified for the proposed General Plan. However, as the City limits already includes prime farmland and farmland of local importance (Figure 5.2-1, *Designated farmland within the City of Redding*) as well as forestland (Figure 5.4-1, *CalVeg – Land Cover*) development would result in conversion of these resources therefore impacts would remain significant and unavailable.

7.5.3 AIR QUALITY

The No Annexation Alternative would also reduce VMT compared to the proposed project as development would be focused within City limits. However, similar to the proposed project, the No Annexation Alternative cannot be determined with a reasonable degree of certainty to not result in a cumulatively considerable contribution to the significant cumulative impact of global climate change. Therefore, air quality impacts under this alternative while less than those identified for the proposed General Plan would remain significant and unavoidable.

7.5.4 BIOLOGICAL IMPACTS

The biological impacts associated with development in the SOI were included as part of the proposed project impact analysis (See Section 5.4, *Biological Resources*). As this alternative includes the reduction of development within the undisturbed portion of the SOI, the potential biological resources impacts would be less than those discussed for the proposed General Plan and remain at a less–than-significant level. However, since this alternative would remove the potential to annex for development, this alternative might put more pressure to build closer to or on key biological resources and wetlands. However, this alternative would also inherit goals and policies introduced in the General Plan Update which protects biological

resources from new development. Therefore, the impact of this alternative would be less than those determined for the proposed project and remain less than significant.

7.5.5 CULTURAL RESOURCES AND TRIBAL CULTURAL RESOURCES

As the No Annexation Alternative includes the reduction of development within the SOI, fewer ground-disturbing activities would occur. The goals, policies, standards, and actions that pertain to the designation and preservation of archaeological resources as stated in the General Plan EIR would be enforced, which would reduce impacts to less than significant. Additionally, compliance with California Health and Safety Code Section 7050.5(b) would reduce impacts to less than significant in the event that human remains are discovered during construction activities. Ground-disturbing activities would still occur throughout the City limits under this alternative scenario. The development anticipated in historic sections of the City that could involve historic resources impacts would be the same under this alternative. Cultural resources impact under this alternative would be less than those identified for the proposed General Plan and remain less than significant.

7.5.6 ENERGY

The No Annexation Alternative proposes less land to be developed and therefore results in reduced energy resources. The development under this alternative would be less than the proposed project, and therefore, energy use would be reduced when compared to the proposed project. Future development within the City limits would also compliance with new CalGreen standards as well as policies in the General Plan Update, impacts under this alternative, as with the proposed project, would be less than significant.

7.5.7 GEOLOGY AND SOILS

The No Annexation Alternative proposes less land to be developed and, therefore, fewer construction and development activities would occur than under the proposed General Plan. With the reduction in development proposed under this alternative, fewer residents would be exposed to geologic and soils hazards. Therefore, potential geology/soils impacts under this alternative would be less than those identified for the proposed General Plan and remain at a less than significant.

7.5.8 GREENHOUSE GAS EMISSIONS

Under the No Annexation Alternative, there would be a reduction in developed land occurring compared to the proposed project. The reduction of the Planning Area under this alternative could result in more intensive development within the City's core resulting in fewer transportation related emissions and more energy-efficient development. The proposed General Plan associated goals and policies would also help to reduce greenhouse gas emissions. Therefore, while impacts would be significant and unavoidable under both the proposed project and No Annexation Alternative, impacts would be slightly less than the proposed project under this alternative.

7.5.9 HAZARDS AND HAZARDOUS MATERIALS

Under both the No Annexation Alternative and the proposed project, new development would be subject to local, State, and federal regulations that would reduce the potential for hazards and hazardous materials impacts. The proposed project and this alternative would result in less-than-significant impacts related to routine transport, use, or disposal or accidental release of hazardous materials; interference with an adopted emergency response plan; public health hazards from development on a known hazardous materials site; and hazardous materials near schools.

Portions of the SOI and Planning Area is in an area of Very High Fire Hazard Severity Zones (VHFHSZ) and Wildland-Urban Interface (WUI) (see Figure 5.18-1, *Wildland-Urban Interface Area near Redding*, and Figure 5.18-2, *Fire Hazard Severity Zones*). The construction of fewer homes in this area, as proposed under this alternative, would significantly reduce this hazard. Therefore, potential impacts related to hazards and hazardous materials under this alternative would be less than those identified for the proposed project and would remain less than significant.

7.5.10 HYDROLOGY AND WATER QUALITY

Under the No Annexation Alternative, earth-moving activities and operational impacts would be less than the proposed project. Further, impacts on groundwater depletion or recharge, drainage pattern alteration, drainage system capacity, and change in the impervious surfaces under this alternative would be less than the proposed project because less land would be affected by development. Therefore, potential hydrology and water quality impacts under this alternative would be less than those identified for the proposed project and remain less than significant.

7.5.11 LAND USE AND PLANNING

This alternative will limit the ability of property owners within the Sphere of Influence (SOI) to develop their land within the City. Regional development pressure may encourage rural-style development in the County, which could make later expansion of the City into these areas difficult. In addition, extending services outside of the City requires separate action by the Local Agency Formation Commission (LAFCo) and a discretionary action by the City to provide the service. In general, the policy of the City is that intensive development not occur in the SOI without annexation to ensure that all new development is consistent with City standards. While this alternative could result in pressure to build at greater intensity to accommodate growth, all development would remain consistent with the General Plan and so impacts would be similar to those identified for the proposed project and be less than significant.

7.5.12 MINERAL RESOURCES

As shown in Figure 5.12-1, *Locally Designated Mineral Resource Areas in Redding*, there is one mine and land designated as Critical Mineral Resource Zone located outside City limits. However there mines and areas within City limits that have been delineated as locally-important mineral resource sites. Therefore,

potential mineral resources impacts under this alternative would be the same as those identified for the proposed General Plan and remain less than significant.

7.5.13 NOISE

Under the No Annexation Alternative, the developable buildout area would be decreased compared to the proposed project, specifically within the Planning Area – not including City limits. As this alternative would significantly reduce potential development, the potential noise impacts related to established plans and noise ordinances, ground-borne vibration, and public use airports would be less than under the proposed project. Therefore, potential impacts would remain less than significant.

This alternative would result in further reduction of VMT at the City's planning horizon forecast as development would constrained within the existing footprint of the city reducing the distance between land uses. As shorter travel lengths result in less vehicle noise, noise related to traffic would be slightly less than those identified for the proposed General Plan. Impacts would remain less than significant.

7.5.14 POPULATION AND HOUSING

Under this alternative population growth would be the same; however, the amount of land that could introduce housing would be focused in the City limits. While this alternative could result in pressure to redevelop existing neighborhoods, potentially displacing people and eliminating housing to accommodate projected growth, state law expressly requires replacement housing during the development review process. The potential population and housing impacts under this alternative would be like those identified for the proposed General Plan and would be less than significant.

7.5.15 PUBLIC SERVICES AND RECREATION

No Annexation Alternative would reduce the amount of developable land to accommodate future growth. Under this alternative, the reduced developable land would result in pressure on existing intrastate and recreation resources to accommodate a growing population. Therefore, potential public services and recreation resources impacts under this alternative would be greater than those outlined under the proposed General Plan. However, this alternative would also inherit the goals and policies from the General Plan Update. Therefore, impacts would remain less than significant.

7.5.16 TRANSPORTATION

This alternative would encourage infill project and higher density development within the City which would result in better VMT reduction than the proposed project. While it is possible that new development in the SOI, for example housing near Shasta College, could reduce VMT for that use and location, overall, a focus on infill would result in lower VMT in the General Plan area.

As land uses would be closer together and linked with improvements such as sidewalks and trails, this alternative could generate more pedestrians, bicyclists, and transit riders than the proposed project. While

the increase in development using the existing roadway network could increase delay and congestion, the overall impact would be to reduce VMT. However, any new intersections or streets would be required to be designed to City standards. Impacts to VMT would be less than those determined in this EIR for the proposed project and would remain less than significant.

7.5.17 UTILITIES AND SERVICE SYSTEMS

This alternative would further encourage infill which will impact existing water and wastewater systems. In many cases the change of use anticipated, such as adding homes to a largely commercial area, will increase the amount of water and wastewater demand resulting in the need to upgrade or replace existing distribution and collection infrastructure such as water and wastewater lines. The demand for service will remain like that of the proposed project, however additional construction or improvement to the existing system(s) may be needed to accommodate new and different types of development in some neighborhoods. Overall, the existing infrastructure is adequate to accommodate new growth and impacts would be considered similar to those of the proposed project and less than significant.

7.5.18 WILDFIRE

The No Annexation Alternative would reduce development within fire hazardous areas. The SOI and Planning Area is located in an area of VHFHSZ and WUI (see Figure 5.18-1, *Wildland-Urban Interface Area near Redding*, and Figure 5.18-2, *Fire Hazard Severity Zones*). The construction of fewer homes and infrastructure in this area, as proposed under this alternative, would significantly reduce fire hazard. Therefore, potential impacts related to exposing people and structures to fire hazards under this alternative would be less than those identified for the proposed General Plan. This alternative reduces wildfire potential (fewer people living in the VHFHSZ and WUI). As shown in Figure 5.18-1 and 5.18-2, there are still fire hazards potential within city limits. Therefore, impacts would remain significant and unavoidable.

7.5.19 CONCLUSION

Under this alternative, eliminating annexable land and focusing development only within the City limits would increase impacts related to aesthetic resources, land use and planning, population and housing, public services and recreation, and utilities when compared to the proposed General Plan Update. The reduction of annexable land would reduce prime agriculture and forestland conversion, biological resources, air quality, cultural resources and tribal cultural resources, energy, hydrology and water quality impacts, wildfire impacts, and vehicle trip generation and associated vehicle and GHG emissions.

Since this alternative would include the adoption of the goals, policies, and implementation actions of the proposed General Plan Update and would comply with the standard conditions and mitigation measures called out in Section 1.0, *Executive Summary*, of this EIR, it would generally meet the objectives of the proposed General Plan Update. Although impacts on agriculture and forestland, air quality, cultural and tribal cultural resources, GHG emissions, and wildfire would be less than those of the proposed General Plan Update, they would still be significant and unavoidable, as expected with the proposed project. The No Annexation Alternative would generally meet the project objectives, but to a lesser extent.

7.6 INCREASED INTENSITY ALTERNATIVE

The Increased Intensity Alternative the City would establish a policy that on average new development will need to be at the 90th percentile of the density range established in the General Plan. Under normal circumstances development is assumed to be in the approximate middle of the density range. For example, the State Department of Housing and Community and Development considers feasible development to be 80 percent of the density range when calculating housing potential in the Housing Element. One intent of this alternative is to encourage an efficient use of existing land thereby reducing the need to annex large areas of land. As shown in Table 7-1, *Proposed Project v. Increased Intensity Scenario*, the proposed project would require more land to meet the planning horizon population estimate of 137,377 persons for 2045 (See Table 3-2 in Chapter 3, *Project Description*). This alternative would require less land to accommodate the projected population.

TABLE 7-1 PROPOSED PROJECT V. INCREASED INTENSITY SCENARIO

Residential Land Use Classifications	Column "A" Proposed Project (acres)	Colum "B" 90% of Density (acres)	A-B Difference
1 du/5 acres (5 a/u)	30782	30782	0
1 du/1 to 5 acres (1 to 5)	32650	15237	-17413
1-2 du/acre	4008	3164	-844
2-3.5 du/acre	9250	7593	-1657
3.5-6 du/acre	437	361	-76
6-10 du/acre	456	380	-76
10-20 du/acre	185	146	-39
20-30 du/acre	0.32	0.28	-0.04
Total	**77,770**	**57,665**	**-20,105**

This alternative would result in more intense development, such as increased lot coverage, higher or larger buildings, within the existing land use designations. Increased densities may further result in additional customers for transit and mixed-use projects. This alternative could change the character of the City by making it more urban than the rural/suburban nature of some neighborhoods. While land would be used more efficiently under this alternative, it could also result in the replacement of buildings in the Focus Areas and possibly change the character of some neighborhoods in the City with higher and larger buildings. This alternative would reduce VMT as more mixed use and housing would be encouraged on less land.

Under this alternative, the need for annexation would be reduced (See 7.5, *No Annexation Alternative*) by ensuring more development on the same amount of land, assuming it is accepted by the local housing market. While this alternative would result in a more efficient use of land with all the same benefits as the no annexation alternative, there may not be a market or acceptance of more intensive development within the City. This could create a demand for growth outside of the City but within the sphere of influence and beyond.

7.6.1 AESTHETICS

This alternative would be subject to the proposed project includes goals, policies, and actions that are more comprehensive and detailed than those in the existing General Plan which would reduce impacts to less than significant. It is likely that higher and larger buildings would be needed to meet the policy. The City does not currently have mid to high-rise buildings and in general most buildings are less than 5 stories. This alternative could result in higher buildings in some areas that could change the visual character of the City. However, all new development would be subject to the policies in the General Plan, and as the alternative does not include density outside of the existing density range, impacts to aesthetics would be similar to the proposed project and be less than significant.

7.6.2 AGRICULTURE AND FORESTRY RESOURCES

Like the proposed project, this alternative would allow for conversion of Prime Farmland to nonagricultural use because it applies nonagricultural designations on some farmlands. However, this alternative would reduce the need for annexation which would reduce the potential to convert prime agricultural/forestland resources.

The proposed project includes new policies strive to protect agricultural resources, including retaining and protecting agricultural lands through the use of proactive land use techniques and requiring that a buffer be established on property proposed for residential development to protect lands used for agricultural purposes. The prosed project's policies would also apply to this alternative. The benefits under this alternative as opposed to the proposed project would be the reduced potential to convert agricultural and forestland (of Blue Oak Woodland, Blue Oak-Foothill Pine, Montane Hardwood, and Valley Oak Woodland land cover types); however, some conversion would still occur. Therefore, impacts to agriculture and forestland would be significant and unavoidable but less than the proposed project.

7.6.3 AIR QUALITY

This alternative assumes the same amount of development as the proposed project, however on less land and with more efficient development. As this alternative promotes mixed use developments and the resultant greater pedestrian and transit uses entailed would reduce vehicle trips and associated emissions. Therefore, air quality impacts would be reduced compared to the proposed project. While impacts under this alternative would be less than those of the proposed project, they would likely also be significant and unavoidable.

7.6.4 BIOLOGICAL IMPACTS

The Increased Intensity Alternative would have a reduced impact on biological resources compared to the proposed General Plan Update, since less land would be developed. Under this alternative, increasing density in urban areas could lessen impacts to biological resources by avoiding expanding in rural areas and potentially impacting more habitat areas. While this alternative would likely reduce the amount of private open space around buildings, and may increase pressure to build on, or near sensitive biological resources

such as riparian areas and drainages, the goals and policies in the proposed project would apply. Therefore, the impacts of this alternative would be less than those determined in the proposed project and remain less than significant.

7.6.5 CULTURAL RESOURCES AND TRIBAL CULTURAL RESOURCES

The goals, policies, standards, and actions that pertain to the designation and preservation of archaeological resources as stated in the General Plan EIR would be enforced, which would reduce impacts to less than significant. Additionally, compliance with California Health and Safety Code Section 7050.5(b) would reduce impacts to less than significant if human remains are discovered during construction activities. Ground-disturbing activities would still occur throughout the Planning Area under this alternative scenario. Development anticipated in the historic areas of the City would still occur under this impact therefore historic resources impacts would be the same under this alternative as the proposed project. Impacts under this alternative compared with the proposed project would be the same.

7.6.6 ENERGY

This alternative would likely result in larger buildings to accommodate the same population growth. In general, an apartment or mixed-used building uses less energy than a comparable number of single-family homes. Energy use would likely be slightly less than the proposed project but would remain less than significant.

7.6.7 GEOLOGY AND SOILS

Under this alternative, development of urban land uses would occur, just as with the proposed General Plan Update. Impacts related to construction erosion and risks from seismic and soil hazards would occur in the same manner as anticipated for the proposed project. This alternative would involve construction of buildings or structures in the Planning Area and, as a result, potential hazards related to soils (e.g., liquefaction, soil expansion) could still occur. The overall extent of development for this alternative would be reduced compared to the proposed project. This would result in a similar amount of earth disturbance and resultant potential soil erosion impacts. Overall, the impacts are reduced slightly, even as the significance determination would remain the same as with the proposed project.

7.6.8 GREENHOUSE GAS EMISSIONS

Under this alternative, more GHGs would be emitted during construction because building types would be more intense. However, as noted in Section 7.6.3, *Air Quality*, increased density of development under this alternative could allow for alternative modes of travel in the City, which could result in fewer GHG emissions per unit. However as noted in Section 5.8, Greenhouse Gas Emissions, although the City is considering developing and implementing a Climate Action and Resiliency Plan, it is uncertain whether these policies will lower the City's GHG emissions to a less-than-significant level. Therefore, GHG emissions associated with the proposed project and this alternative would remain significant and unavoidable.

7.6.9 HAZARDS AND HAZARDOUS MATERIALS

Under both the Increased Intensity Alternative and the proposed project, new development would be subject to local, State, and federal regulations that would reduce the potential for hazards and hazardous materials impacts. The proposed project and this alternative would result in less-than-significant impacts related to routine transport, use, or disposal or accidental release of hazardous materials; interference with an adopted emergency response plan; public health hazards from development on a known hazardous materials site; and hazardous materials near schools. However, this alternative could result in placing more units in VHFHSZ and WUI. However, this alternative would also benefit from the proposed project's policies which require new development to meet fire protection standards and measures such as defensible space, street widths and grade to accommodate emergency vehicles and evacuees as well as mitigation measure set by the proposed project's EIR would also apply. Impacts would be greater in this alternative compared to the proposed project by exposing more people and structures in these wildfire areas.

7.6.10 HYDROLOGY AND WATER QUALITY

This alternative could result in higher intensity development potential within the Planning Area. A higher intensity (greater ground coverage) can change existing hydrology patterns. Implementation of this alternative would still involve stormwater discharges and increase impervious surfaces in urban land uses like the proposed project, but on less land. The proposed General Plan Update includes many policies to avoid adverse effects to hydrology and water quality, including a no increase in peak flow runoff policy for development projects in all drainage basins and the use of drainage systems to ensure water filtration and ongoing water quality in accordance with the City's MS4 permit. In addition, all policies and measures that are a part of the proposed General Plan Update would be included in this alternative. This alternative also assumes that future mixed-use development would comply with standard conditions for hydrology and water quality and impacts would be less than significant. The impact of this alternative on hydrology and water quality would be less than the impact of the proposed project and would be less than significant.

7.6.11 LAND USE AND PLANNING

This alternative would not change the land use pattern of the City but would result in more development on each land use type. Under the Increased Intensity Alternative, higher buildings would be needed in the key focus areas to allow more density. This alternative could change the character of the City by making some of the neighborhoods more urban than suburban. While land would be used more efficiently under this alternative, it could also result in redevelopment or demolition of buildings in the focus areas and changing the character of the City with larger buildings and less open space. Implementation of this alternative would result in greater land use impacts than those anticipated from the proposed project.

7.6.12 MINERAL RESOURCES

This alternative would be subject to the same local, State, and federal regulations as the proposed project; these regulations, as discussed in Section 5.12, *Mineral Resources*, would reduce the potential impacts to a less-than-significant level. Impacts would be the same for this alternative and the proposed project.

7.6.13 NOISE

Noise during the construction phase of development would be slightly greater than estimated for the proposed project because larger buildings can take longer to construct. However, as with the proposed project construction noise would be significant and unavoidable. Increases in vehicle noise levels would likely not be perceptible; however, due to existing high noise levels along major roadways in the City, noise impacts would remain significant and unavoidable like that of the proposed project.

7.6.14 POPULATION AND HOUSING

This alternative would increase development intensity but would not change the amount of growth projected for the proposed project. The alternative would result in a more efficient use of land that could reduce the cost of some housing types. However, as this alternative would not increase the amount of population or employment growth when compared to the proposed project, impacts would be less than significant.

7.6.15 PUBLIC SERVICES AND RECREATION

Increased building sizes and densities in certain areas of the City may require upgrading of infrastructure to accommodate the increase in water and wastewater demand. In general, having more intensive development would reduce response times for services and increase use of existing public facilities. While the overall impact of services would be like those of the proposed project, in some neighborhoods a substantial increase in population would create increased demand for services such as parks, without the land needed to create new or expanded facilities. As the alternative would implement the policies of the proposed General Plan that would address the need for future services such as parks, the impact of this alternative on public services would be like that of the proposed project and would less than significant.

7.6.16 TRANSPORTATION

Because the increase in building size would place more residents and customers close to services, this alternative would reduce vehicle miles travelled (VMT). This alternative would also result in greater congestion on area streets and intersections. The increased density would likely be directed primarily to the focus areas (see Figure 3-6, Focus Areas) which are in the more developed area of the City. This could encourage mobility options rather than driving and would support the goal of reduced VMT. The impact of this alternative on transportation would be less than the impact of the proposed project and would remain than significant.

7.6.17 UTILITIES AND SERVICE SYSTEMS

Larger buildings, and those that might change existing land use could create an increased demand for utilities in some areas of the City. This could result in a need to upgrade or replace older (or smaller) water or sewer infrastructure to meet the new demand. The proposed project will also increase demand in some

areas and while this alternative might result in more utility demand, the impact on services would also be less than significant.

7.6.18 WILDFIRE

The Increased Intensity Alternative would accommodate the same amount of growth as the proposed project but on less land. Under this Alternative, more units and infrastructure could also be introduced into the VHFHSZ and WUI. Consequently, growth under this alternative could increase traffic on roadways and evacuation routes potentially increasing the risk to loss of life and property in the event of a wildfire. Development in the VHFHSZ and WUI also improve roadways and extend water into areas that may currently be undeveloped. While this introduces more people into these sensitive and hazardous areas, new developments can also improve access and water for emergency personnel. Under this alternative, impacts would be greater than the proposed project and would remain significant and unavoidable.

7.6.19 CONCLUSION

Under this alternative, increasing the development capacity throughout the Planning Area would increase impacts related to aesthetic resources, public service demands, land use and planning, noise, utility demands, and wildfire hazards when compared to the proposed General Plan Update. The reduction of acreages necessary to accommodate projected population growth and increase in land use efficiency would reduce prime agriculture and forestland conversion, air quality, biological resources, geology and soils, hydrology and water quality impacts, population and housing, vehicle trip generation and associated vehicle and GHG emissions.

The Increased Intensity Alternative would result in greater environmental impacts than the proposed General Plan Update on some environmental issues or less impacts on other issue. Since this alternative would include the adoption of the goals, policies, and implementation actions of the proposed General Plan Update and would comply with the same standards as the proposed project, it would generally meet the objectives of the proposed General Plan Update. Although impacts on agriculture and forestland resources, air quality, GHG emissions, and wildfire would be less than those of the proposed General Plan Update, they would remain significant and unavoidable, like those of the proposed project. The Increased Intensity Alternative would generally meet the project objectives.

7.7 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Table 7-2, *Alternatives Impact Comparison*, summarizes the environmental impacts of each of the alternatives when compared to the proposed General Plan. The table lists the level of significance of the impacts of the proposed General Plan to each environmental topic of the Draft EIR and shows whether the impacts anticipated under each proposed alternative would be less, similar, or greater than the proposed General Plan. It should be noted that all impacts identified as being significant and unavoidable (i.e., agriculture and forest resources, air quality, biological resources, cultural resources, noise, and wildfire)

would remain significant and unavoidable under each alternative despite if the alternative would reduce the intensity of the impact.

Table 7-2 Alternatives Impact Comparison

Impact Area	Proposed General Plan	Alternatives		
		No Project	No Annexation	Increased Intensity
Aesthetics	LTS	=	+	=
Agricultural Resources	SU[1]	+	-	-
Air Quality	SU[2]	+	-	-
Biological Resources	SU[3]	=	-	-
Cultural Resources and Tribal Cultural Resources	SU[4]	=	-	=
Energy	LTS	+	-	-
Geology/Soils	LTS	=	-	-
Greenhouse Gas Emissions	SU[5]	+	-	-
Hazards and Hazardous Materials	LTS	=	-	+
Hydrology and Water Quality	LTS	+	-	-
Land Use	LTS	+	=	+
Mineral Resources	LTS	=	=	=
Noise	SU[6]	=	-	+
Population and Housing	LTS	+	=	=
Public Services	LTS	-	+	=
Transportation	LTS	+	-	-
Utilities	LTS	+	=	+
Wildfire	SU[7]	+	-	+

Notes
[1]Impacts related to prime agriculture and forestland (of Blue Oak Woodland, Blue Oak-Foothill Pine, Montane Hardwood, and Valley Oak Woodland land cover types)
[2]Impacts related to cumulative impacts
[3]Impacts related to cumulative impacts
[4]Impacts related to historical resources
[5]Impacts related to cumulative impacts
[6]Impacts related to noise construction
[7]Impacts related to wildfire risk and cumulative impacts
(+) Impacts greater than the proposed General Plan
(=) Impact similar to the proposed General Plan
(-) Impacts less than the proposed General Plan

In addition to comparing alternatives to the impacts of the proposed project, CEQA also requires that alternatives be evaluated against the primary project objectives. Table 7-3, *Primary Objectives Alternative Comparison*, notes whether the alternatives meet the primary project objectives. The increased intensity and no project alternatives largely meet all of the project objectives while still accommodating the projected growth for the City. The increased intensity alternative may not be able to provide park and recreation

opportunities throughout the community as the requirement to develop at the 90 percentile of the development range may introduce new residents in areas without the land needed to build or expand new parks. Because this may not always be the case, the determination is shown as 'may not meet'.

TABLE 7-3 PRIMARY OBJECTIVES ALTERNATIVE COMPARISON

Primary Objective	No Project	No Annexation	Increased Intensity
Advance the City's vision for a resilient, equitable, and healthy community with high-quality development within its urban centers and corridors.	Does not meet	Meets	Meets
Maintain the existing land use classifications of the existing General Plan Diagram while addressing the use of development incentives to spur new infill development/redevelopment consistent with the existing land use classifications.	Does not meet	Meets	Meets
Encourage a more compact urban form by reducing the Planning Area to a more realistic growth boundary.	Does not meet	Meets	Meets
Establish thresholds and maintain roadway and intersection levels of service for the public's health and convenience while striving to minimize increases in vehicle miles travelled from new development.	Does not meet	Meets	Meets
Provide park and recreation opportunities throughout the community, including those areas where facilities and services are not available.	Does not meet	Meets	May not meet
Work with appropriate agencies and organizations to increase resident's access to healthcare, healthy food, transportation options, public services, housing, and healthy neighborhoods.	Meets	Meets	Meets

In addition to the discussion and comparison of impacts of a project and alternatives, Section 15126.6 of the CEQA Guidelines requires that an "environmentally superior" alternative be selected and the reasons for such a selection disclosed. In general, the environmentally superior alternative is the alternative that would be expected to generate the least amount of significant impacts, or which would reduce environmental impacts associated with a proposed project. The No Project/Existing General Plan under consideration cannot be identified as the Environmentally Superior Alternative.

The No Annexation Alternative has the least impact to the environment because it is environmentally superior alternative with regard to agriculture and forestry resources, air quality, biological resources, cultural resources and tribal cultural resources, energy, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, noise, transportation, and wildfire. Other impacts, including mineral resources, would have the similar impacts to the proposed project.

8. *Persons and Organizations Consulted/ List of Preparers*

Bella Vista Water District

David J. Coxey - General Manager

Redding Fire Department

Jerrod Vanlandingham – Fire Chief

Redding Parks and Recreation Department

Travis Menne – Community Projects Manager

Redding Police Department

Bill Schueller – Chief of Police

Brian Cole – Captain

Brian Barner – Captain

Ron Icely – Captain

Redding Water Utility Department

Josh Watkins – Water Utility Manger

Redding Wastewater Utility Department

Josh Vandiver – Wastewater utility Manager

Redding Solid Waste Department

Paul Clemens – Deputy Director

Shasta County Public Library – Redding Library

Travis Menne – Community Projects Manager

PLACEWORKS

Mark Teague, AICP
Principal

- BA, Political Science, California State University Stanislaus

Lance Park
Senior Associate

- BA, International Relations and Affairs, California State University, Chico
- Master of International Environmental Policy – Ocean and Coastal Resource Management, Middlebury Institute of International Studies, Monterey

Jasmine A. Osman
Associate II

- BA Sustainability, Geography minor, San Diego State University
- Master of City Planning, San Diego State University

Miles Barker
Associate I

- BS Environmental Management and Protection, California Polytechnic State University, Humboldt
- Master of City and Regional Planning, California Polytechnic State University, San Luis Obispo

Lexie Zimny
Project Planner

- BS, Environmental Policy Analysis and Planning, Sustainable Environmental Design, University of California, Davis

Jessica Mendoza
Project Planner

- BS, Environmental Science and Management, University of California, Davis

Payton
Planner

- BA, Planning, Public Policy, and Management, University of Oregon

Abdul Khan
Project Planner

- BA Urban Studies, University of California, Irvine

Cary Nakama
Graphics Specialist

- AA Computer Graphic Design, Platt College of Computer Graphic Design
- BA Business Administration: Data Processing and Marketing, California State University, Long Beach

CONTRIBUTING EIR CONSULTANTS

- ECORP Consulting, Inc.

This page intentionally left blank.