DRAFT

Program Environmental Impact Report

City of Corona 2018 Reclaimed Water Master Plan

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Table of Contents

Acronyms and Abbreviations ..... **ix**

Executive Summary **ES-1**

Chapter 1 Introduction **1-1**

1.1 Project Overview 1-1
1.2 Project Background 1-1
1.2.1 1998 Sewer Master Plan 1-1
1.2.2 2001 Reclaimed Water Master Plan 1-1
1.2.3 Existing System 1-2
1.3 Purpose and Use of the Program Environmental Impact Report 1-4
1.4 Program Environmental Impact Report Process 1-5
1.4.1 Public and Agency Review 1-5
1.4.2 CEQA Findings and Mitigation Monitoring and Reporting Program 1-7
1.5 Organization of the Program Environmental Impact Report 1-7
1.6 Documents Incorporated By Reference 1-8

Chapter 2 Project Description **2-1**

2.1 Project Location 2-1
2.2 Project Purpose 2-2
2.3 Project Objectives 2-2
2.4 Projects Identified in the 2018 RWMP 2-2
2.4.1 Sources of Supply 2-5
2.4.2 Large Distribution Pipelines 2-7
2.4.3 Medium Distribution Pipelines 2-8
2.4.4 Small Distribution Pipelines 2-10
2.4.5 Conversion of Adjacent Customers 2-12
2.4.6 Data Management Projects 2-13
2.4.7 Additional Studies 2-13
2.4.8 Construction Methods 2-15
2.6 Discretionary Actions 2-16

Chapter 3 Environmental Analysis **3-1**

3.1 Aesthetics 3.1-1
3.1.1 Environmental Setting 3.1-1
3.1.2 Regulatory Setting 3.1-6
3.1.3 Thresholds of Significance 3.1-10
3.1.4 Environmental Analysis 3.1-10
3.1.5 Cumulative Impacts and Mitigation 3.1-15
3.1.6 Conclusion 3.1-16

3.2 Agriculture and Forestry Resources 3.2-1
3.2.1 Environmental Setting 3.2-1
3.2.2 Regulatory Setting 3.2-3
3.2.3 Thresholds of Significance 3.2-6
3.2.4 Environmental Analysis 3.2-7
3.2.5 Cumulative Impacts 3.2-10
3.2.6 Conclusion 3.2-11
3.3 Air Quality 3.3-1
3.3.1 Environmental Setting 3.3-1
3.3.2 Regulatory Setting 3.3-4
3.3.3 Thresholds of Significance 3.3-10
3.3.4 Environmental Analysis 3.3-12
3.3.5 Cumulative Impacts and Mitigation 3.3-19
3.3.6 Conclusion 3.3-20
3.4 Biological Resources 3.4-1
3.4.1 Environmental Setting 3.4-1
3.4.2 Regulatory Setting 3.4-12
3.4.3 Thresholds of Significance 3.4-23
3.4.4 Environmental Analysis 3.4-24
3.4.5 Cumulative Impacts and Mitigation 3.4-40
3.4.6 Conclusion 3.4-43
3.5 Cultural Resources 3.5-1
3.5.1 Environmental Setting 3.5-1
3.5.2 Regulatory Setting 3.5-13
3.5.3 Thresholds of Significance 3.5-19
3.5.4 Environmental Analysis 3.5-19
3.5.5 Cumulative Impacts and Mitigation 3.5-26
3.5.6 Conclusion 3.5-27
3.6 Energy 3.6-1
3.6.1 Environmental Setting 3.6-1
3.6.2 Regulatory Setting 3.6-5
3.6.3 Thresholds of Significance 3.6-11
3.6.4 Environmental Analysis 3.6-11
3.6.5 Cumulative Impacts and Mitigation 3.6-14
3.6.6 Conclusion 3.6-15
3.7 Geology, Soils, and Paleontological Resources 3.7-1
3.7.1 Environmental Setting 3.7-1
3.7.2 Regulatory Setting 3.7-8
3.7.3 Thresholds of Significance 3.7-13
3.7.4 Environmental Analysis 3.7-13

3.7.5 Cumulative Impacts and Mitigation 3.7-20
3.7.6 Conclusion 3.7-22
3.8 Greenhouse Gas Emissions 3.8-1
3.8.1 Environmental Setting 3.8-1
3.8.2 Regulatory Setting 3.8-3
3.8.3 Thresholds of Significance 3.8-5
3.8.4 Environmental Analysis 3.8-7
3.8.5 Cumulative Impacts and Mitigation 3.8-10
3.8.6 Conclusion 3.8-10
3.9 Hazards and Hazardous Materials 3.9-1
3.9.1 Environmental Setting 3.9-1
3.9.2 Regulatory Setting 3.9-3
3.9.3 Thresholds of Significance 3.9-10
3.9.4 Environmental Analysis 3.9-11
3.9.5 Cumulative Impacts and Mitigation 3.9-20
3.9.6 Conclusion 3.9-23
3.10 Hydrology and Water Quality 3.10-1
3.10.1 Environmental Setting 3.10-1
3.10.2 Regulatory Setting 3.10-4
3.10.3 Thresholds of Significance 3.10-11
3.10.4 Environmental Analysis 3.10-12
3.10.5 Cumulative Impacts and Mitigation 3.10-18
3.10.6 Conclusion 3.10-20
3.11 Land Use and Planning 3.11-1
3.11.1 Environmental Setting 3.11-1
3.11.2 Regulatory Setting 3.11-2
3.11.3 Thresholds of Significance 3.11-5
3.11.4 Environmental Analysis 3.11-6
3.11.5 Cumulative Impacts and Mitigation 3.11-17
3.11.6 Conclusion 3.11-18
3.12 Mineral Resources 3.12-1
3.12.1 Environmental Setting 3.12-1
3.12.2 Regulatory Setting 3.12-3
3.12.3 Thresholds of Significance 3.12-5
3.12.4 Environmental Analysis 3.12-5
3.12.5 Cumulative Impacts and Mitigation 3.12-7
3.12.6 Conclusion 3.12-8
3.13 Noise 3.13-1
3.13.1 Environmental Setting 3.13-1
3.13.2 Regulatory Setting 3.13-4
3.13.3 Thresholds of Significance 3.13-8

3.13.4 Environmental Analysis 3.13-9
3.13.5 Cumulative Impacts and Mitigation 3.13-16
3.13.6 Conclusion 3.13-17
3.14 Population and Housing 3.14-1
3.14.1 Environmental Setting 3.14-1
3.14.2 Regulatory Setting 3.14-2
3.14.3 Thresholds of Significance 3.14-4
3.14.4 Environmental Analysis 3.14-4
3.14.5 Cumulative Impacts and Mitigation 3.14-6
3.14.6 Conclusion 3.14-6
3.15 Public Services 3.15-1
3.15.1 Environmental Setting 3.15-1
3.15.2 Regulatory Setting 3.15-2
3.15.3 Thresholds of Significance 3.15-5
3.15.4 Environmental Analysis 3.15-6
3.15.5 Cumulative Impacts and Mitigation 3.15-9
3.15.6 Conclusion 3.15-11
3.16 Recreation 3.16-1
3.16.1 Environmental Setting 3.16-1
3.16.2 Regulatory Setting 3.16-3
3.16.3 Thresholds of Significance 3.16-5
3.16.4 Environmental Analysis 3.16-5
3.16.5 Cumulative Impacts and Mitigation 3.16-7
3.16.6 Conclusion 3.16-7
3.17 Transportation 3.17-1
3.17.1 Environmental Setting 3.17-1
3.17.2 Regulatory Setting 3.17-6
3.17.3 Thresholds of Significance 3.17-11
3.17.4 Environmental Analysis 3.17-11
3.17.5 Cumulative Impacts and Mitigation 3.17-15
3.17.6 Conclusion 3.17-17
3.18 Tribal Cultural Resources 3.18-1
3.18.1 Environmental Setting 3.18-1
3.18.2 Regulatory Setting 3.18-3
3.18.3 Thresholds of Significance 3.18-6
3.18.4 Environmental Analysis 3.18-6
3.18.5 Cumulative Impacts and Mitigation 3.18-9
3.18.6 Conclusion 3.18-10
3.19 Utilities and Service Systems 3.19-1
3.19.1 Environmental Setting 3.19-1
3.19.2 Regulatory Setting 3.19-3

3.19.3 Thresholds of Significance 3.19-8
3.19.4 Environmental Analysis 3.19-9
3.19.5 Cumulative Impacts and Mitigation 3.19-12
3.19.6 Conclusion 3.19-14
3.20 Wildfire 3.20-1
3.20.1 Environmental Setting 3.20-1
3.20.2 Regulatory Setting 3.20-4
3.20.3 Thresholds of Significance 3.20-10
3.20.4 Environmental Analysis 3.20-10
3.20.5 Cumulative Impacts and Mitigation 3.20-15
3.20.6 Conclusion 3.20-17

Chapter 4 Other CEQA Considerations 4-1

4.1 Growth Inducement 4-1
4.2 Significant and Irreversible Environmental Changes 4-2
4.3 Significant and Unavoidable Environmental Impacts 4-3

Chapter 5 Alternatives to the Proposed Project 5-1

5.1 Introduction 5-1
5.2 Requirements for Alternatives Analysis 5-1
5.3 Selection of Alternatives 5-1
5.4 Alternatives Considered 5-5
5.4.1 Alternatives Considered But Rejected 5-5
5.4.2 Alternatives Selected for Further Analysis 5-6
5.5 Alternatives Comparison 5-7
5.5.1 Analysis of Alternative 1: No Project/Existing 2001 Reclaimed Water Master Plan Alternative 5-7
5.5.2 Analysis of Alternative 2: Reduced Project Alternative 5-11
5.6 Environmentally Superior Alternative 5-16

Chapter 6 Preparers and Persons Contacted 6-1

6.1 Program Environmental Impact Report Preparers 6-1
6.1.1 Lead Agency 6-1
6.1.2 Environmental Planning 6-1

Chapter 7 References 7-1

Figures

Figure 1-1. Existing Reclaimed Water System 1-11
Figure 2-1. Regional Location 2-17
Figure 2-2. Project Overview 2-19
Figure 2-3. Water Service Area 2-21
Figure 2-4a. Source of Supply Projects 2-23

Figure 2-4b. Large Distribution Pipelines 2-25
Figure 2-4c. Medium Distribution Pipelines 2-27
Figure 2-4d. Small Distribution Pipelines 2-29
Figure 3.1-1. Scenic Corridors 3.1-19
Figure 3.1-2. Scenic Vistas 3.1-21
Figure 3.2-1. Agricultural Resources 3.2-13
Figure 3.4-1. Vegetation Communities – Overview 3.4-45
Figure 3.4-2a. Vegetation Communities, Source of Supply Projects 3.4-47
Figure 3.4-2b. Vegetation Communities, Large Distribution Pipelines 3.4-49
Figure 3.4-2c. Vegetation Communities, Medium Distribution Pipelines 3.4-51
Figure 3.4-2d. Vegetation Communities, Small Distribution Pipelines 3.4-53
Figure 3.4-3. Critical Habitat 3.4-55
Figure 3.5-1a. Cultural Sensitivity, Source of Supply Projects 3.5-29
Figure 3.5-1b. Cultural Sensitivity, Large Distribution Pipelines 3.5-31
Figure 3.5-1c. Cultural Sensitivity, Medium Distribution Pipelines 3.5-33
Figure 3.5-1d. Cultural Sensitivity, Small Distribution Pipelines 3.5-35
Figure 3.7-1. Regional Fault Locations 3.7-25
Figure 3.7-2. Liquefaction Hazards 3.7-27
Figure 3.7-3. Sensitive Paleontological Resources 3.7-29
Figure 3.9-1a. Hazardous Materials Cleanup Sites – Source of Supply Projects 3.9-27
Figure 3.9-1b. Hazardous Material Cleanup Sites – Large Distribution Pipelines 3.9-29
Figure 3.9-1c. Hazardous Material Cleanup Sites – Medium Distribution Pipelines 3.9-31
Figure 3.9-1d. Hazardous Material Cleanup Sites – Small Distribution Pipelines 3.9-33
Figure 3.10-1. Source of Supply Projects in 100-Year Flood Zone 3.10-21
Figure 3.11-1. Existing Land Uses 3.11-19
Figure 3.12-1. Mineral Resources 3.12-9
Figure 3.20-1. Very High Fire Hazard Severity Zones 3.20-19

Tables

Table ES-1. Summary of Projects ES-2
Table ES-2. Project Construction Duration ES-7
Table ES-3. Discretionary Actions ES-9
Table ES-4. Notice of Preparation Comment Letter Summary ES-9
Table ES-5. Summary of Impacts of the Proposed Project ES-12
Table 1-1. Existing Zones 1-2
Table 1-2. Notice of Preparation Comment Letter Summary 1-5
Table 2-1. Summary of Projects 2-2
Table 2-2. Project Construction Duration 2-15
Table 2-3. Discretionary Actions 2-16

Table 3.1-1. Scenic Corridors in Corona 3.1-4
Table 3.2-1. Agricultural Resources in the Water Service Area 3.2-1
Table 3.3-1. Ambient Air Quality Monitoring Summary 3.3-4
Table 3.3-2. National and California Ambient Air Quality Standards 3.3-5
Table 3.3-3. South Coast Air Basin Attainment Status 3.3-7
Table 3.3-4. South Coast Air Quality Management District Air Quality Mass Daily Thresholds 3.3-11
Table 3.3-5. Source Receptor Area Norco/Corona Localized Significance Thresholds 3.3-11
Table 3.3-6. Sampson Pipeline Project Construction Assumptions 3.3-13
Table 3.3-7. Estimated Construction Daily Maximum Air Pollutant Emissions (lbs/day) 3.3-14
Table 3.3-8. Estimated Construction Daily Maximum Air Pollutant Emissions (lbs/day) Relative to Localized Significance Thresholds 3.3-15
Table 3.4-1. Sensitive Plant Species Documented in the Water Service Area 3.4-8
Table 3.4-2. Sensitive Animal Species Documented in the Water Service Area 3.4-9
Table 3.5-1. Built Environmental Resources within the City's Water Service Area 3.5-6
Table 3.5-2. City of Corona Historic Landmarks 3.5-10
Table 3.5-3. City of Corona Historic Markers 3.5-13
Table 3.5-4. Cultural Sensitivity and Known Resource Locations for the 2018 RWMP Projects 3.5-21
Table 3.6-1. Citywide Existing Electricity Demand 3.6-3
Table 3.6-2. Estimated Existing Natural Gas Demand 3.6-4
Table 3.6-3. Existing Operations Related Annual Fuel Usage 3.6-4
Table 3.6-4. 2018 RWMP Total Fuel Consumption 3.6-12
Table 3.7-1. Principal Active Faults 3.7-4
Table 3.7-2. Paleontological Sensitivities of Geological Formations in the Water Service Area 3.7-7
Table 3.8-1. Global Warming Potential for Select Greenhouse Gases 3.8-2
Table 3.8-2. Estimated Annual Operational Emissions from Electrical Consumption 3.8-8
Table 3.10-1. Beneficial Use Designations 3.10-4
Table 3.11-1. Existing Land Use Summary 3.11-1
Table 3.11-2. Project Consistency with Relevant City of Corona 2020–2040 General Plan Policies 3.11-7
Table 3.12-1. Active Mining Operations in the Water Service Area 3.12-2
Table 3.13-1. Typical A-Weighted Noise Levels 3.13-1
Table 3.13-2. Federal Transit Administration Groundborne Vibration Impact Criteria 3.13-5
Table 3.13-3. Stationary Noise Standards 3.13-6
Table 3.13-4. Noise Levels at 50 Feet from Typical Construction Equipment 3.13-10
Table 3.13-5. Noise Levels at 50 Feet from Typical Construction Equipment 3.13-14
Table 3.14-1. 2015 Southern California Associations of Governments Draft Growth Forecast 3.14-1

Table 3.14-2. 2015 Urban Water Management Plan Population for the Water Service Area 3.14-2
Table 3.14-3. Housing Units in the City of Corona 3.14-2
Table 5-1. Summary of Impacts of the Proposed Project 5-2
Table 5-2. Comparison of Alternatives with Proposed Project 5-17
Table 5-3. Ability of Project Alternative to Meet Proposed Project Objectives 5-20

Appendices

Appendix A. NOP and NOP Comment Letters
Appendix B. Air Quality Impact Analysis
Appendix C. Biological Resources Technical Report
Appendix D. Cultural and Tribal Cultural Resources Technical Report
Appendix E. Greenhouse Gas Emissions Impact Analysis
Appendix F. Noise Impact Analysis

Acronyms and Abbreviations

°C	degrees Celsius
°F	degrees Fahrenheit
µg/m^3	microgram per liter
2016 Proposition 1 IS/MND	2016 Initial Study and Mitigated Negative Declaration for the Proposition 1 – Reclaimed Water Distribution Facilities
2018 RWMP or project	2018 Reclaimed Water Master Plan
AB	Assembly Bill
af/y	acre-feet per year
AFY	acre-feet per year
AIA	Airport Influence Area
AQMP	Air Quality Management Plan
C&D	construction and demolition
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAL FIRE	California Department of Forestry and Fire Protection
Cal/OSHA	California Division of Occupational Safety and Health
CalEEMod	California Emissions Estimator Model
CALGreen	California Green Building Standards Code
CalRecycle	California's Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CARB	California Air Resources Board
CBC	California Building Code
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFD	Corona Fire Department
CFG	California Fish and Game
CFP	California fully protected
CII	commercial, industrial, and institutional
City	City of Corona
CMP	Congestion Management Program
CNEL	community noise equivalent level
CNPS	California Native Plant Society
CNUSD	Corona-Norco Unified School District
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
County	County of Riverside
CPD	Corona Police Department
CPL	Corona Public Library
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Rank
CWA	Clean Water Act

dB	decibel
dBA	A-weighted decibel
DPM	diesel particulate matter
DWP	Department of Water and Power
EIR	environmental impact report
EO	Executive Order
EOP	Emergency Operations Plan
EPCRA	Emergency Planning and community Right-to-Know Act
FCV	flow control valve/station
FE	federally endangered
FEMA	Federal Emergency Management Agency
FESA	federal Endangered Species Act
FMMP	Farmland Mapping and Monitoring Program
FT	federally threatened
FTA	Federal Transit Administration
GIS	geographic information systems
gpm	gallons per minute
HCP	Habitat Conservation Plan
HDPE	high-density polyethylene
HFC	hydrofluorocarbon
Hot Spots Act	Air Toxics “Hot Spots” Information and Assessment Act
I-	Interstate
in/sec	inches per second
kWh	kilowatt-hour
Ldn	day-night average sound level
Leq	Equivalent Energy Level
LHMP	Local Hazard Mitigation Plan
LID	low-impact development
LIP	Local Implementation Plan
LMD	landscape maintenance district
LOS	level of service
LST	localized significance threshold
MBTA	Migratory Bird Treaty Act
MFR	multi-family residential
MRZ	Mineral Resource Zone
MSHCP	Multiple Species Habitat Conservation Plan
$MTCO_2e$	metric tons of CO_2 equivalent
MTP	Metropolitan Transportation Plan
N_2O	nitrous oxide
NA	not applicable
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Planning
NFPA	National Fire Protection Association
NO	nitric oxide
NO_2	nitrogen dioxide

NOP	Notice of Preparation
NO_x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O_3	ozone
PCB	polychlorinated biphenyl
PEIR	program environmental impact report
PFC	perfluorocarbon
PM_{10}	respirable particulate matter
$PM_{2.5}$	fine particulate matter
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
ppb	parts per billion
ppm	parts per million
PPV	peak particle velocity
PRV	pressure-reducing valve
PVC	polyvinyl chloride
RMS	root mean square
ROW	right-of-way
RPS	Renewables Portfolio Standard
RTA	Riverside Transit Agency
RTAC	Regional Targets Advisory Committee
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCAB	South Coast Air Basin
SCADA	Supervisory Control and Data Acquisition
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SCS	Sustainable Communities Plan
SF_6	sulfur hexafluoride
SIP	State Implementation Plans
SMARA	Surface Mining and Reclamation Act
SO_2	sulfur dioxide
SoCalGas	Southern California Gas Company
SOI	Sphere of Influence
SO_x	sulfur oxide
SR-	State Route
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
Tanner Act	Toxic Air Contaminant Identification and Control Act
TCAP	Temescal Canyon Area Plan
TCR	tribal cultural resource
TTCP	traditional tribal cultural places

USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Services
UWMP	Urban Water Management Plan
VdB	vibration decibel
VHFHSZ	Very High Fire Hazard Severity Zone
VMT	vehicle miles traveled
VMT/SP	vehicle miles traveled per service population
VOC	volatile organic compound
WL	watch list
WRCRWA	Western Riverside County Regional Wastewater Authority
WRF	wastewater reclamation facility

Executive Summary

Introduction

This chapter provides a summary of the Program Environmental Impact Report (PEIR) prepared for the 2018 Reclaimed Water Master Plan (project or 2018 RWMP) prepared in compliance with the California Environmental Quality Act (CEQA). The City of Corona (City) is the lead agency for the PEIR and, as such, has the primary responsibility to evaluate the environmental effects of the proposed project and to consider whether to approve or disapprove the proposed project in light of these effects.

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

Project Description

Project Location

The City is in the northwestern portion of the County of Riverside (County), near the convergence of the Counties of Los Angeles, Orange, and Riverside, 45 miles southeast of the City of Los Angeles, as shown on Figure 2-1, Regional Location, and Figure 2-2, Project Overview, in Chapter 2, Project Description. The City is in the Temescal Valley, which is framed by mountains and the Prado Flood Control Basin. The City is bordered by the City of Norco to the north, City of Riverside to the east, unincorporated County of Riverside to the west and south, Cleveland National Forest to the south and southwest, and Prado Flood Control Basin to the northeast.

The City's water service area encompasses approximately 39 square miles and delineates the extent of the City's potable water, reclaimed water, and wastewater services. The water service area boundary differs slightly from the City's jurisdictional boundary because it also includes the unincorporated communities of El Cerrito and Coronita and parts of Temescal Canyon, as shown on Figure 2-3, Water Service Area. The water service area is a jurisdictional boundary bordered by the neighboring water service areas for the Cities of Norco and Eastvale to the north, City of Riverside to the northeast, Home Gardens County Water District to the east, and Temescal Valley Water District to the south. The southeastern portion of the water service area is generally bounded by unincorporated County lands. The southwestern portion of the water service area is bounded by the Cleveland National Forest and other County lands.

Project Objectives

The primary purpose of the 2018 RWMP is to assist the City with meeting its goals for reclaimed water use through implementation of appropriate projects, programs, and additional studies.

The project objectives are as follows:

1. Expand and improve the City's recycled water program in accordance with Ordinance 2854 (Recycled Water Rules and Regulations)
2. Prioritize and implement system improvements pursuant to the 2018 Reclaimed Water Master Plan to maximize reclaimed water supply availability and reduce the use of potable water
3. Improve water supply system performance by facilitating supply management and maximizing water resources
4. Efficiently implement priority improvement projects to manage and distribute new sources of water supply as they become available

Project Components

The project is an update to the City's adopted Reclaimed Water Master Plan (2001), which provides guidance to create infrastructure to efficiently use treated effluent from its existing and future wastewater reclamation facilities (WRFs) supplemented by non-potable groundwater to reduce dependence on imported water and potable groundwater.

Future projects infrastructure and improvements to the reclaimed water system would be categorized as sources of supply, large distribution pipelines, medium distribution pipelines, small distribution pipelines, conversion of adjacent customers, data management, and additional studies. Table ES-1 provides a summary of the projects identified in the 2018 RWMP.

Table ES-1. Summary of Projects

Number	Project Component	Location	Description
Sources of Supply Projects			
1	WRCRWA Booster Pump Station	WRCRWA	The booster pumping stations would pump WRCRWA supply to the 833 Subzone.
2	WRCRWA Transmission Pipeline	Between WRCRWA and River FCS-833 Subzone	The transmission pipeline would connect the WRCRWA booster pumping station to the 833 Subzone.
3	WRCRWA Flow Control Improvements	Between Butterfield and WRF1 Tank	These control stations would direct WRCRWA supply to the Lincoln-Cota Ponds and the WRF1 Tank.

Table ES-1. Summary of Projects

Number	Project Component	Location	Description
4	Rimpau California Pipeline	Between Central Park and Chase Park	This transmission pipeline would provide the additional capacity needed to move WRCRWA supply to demands south of the water service area between City Park and Chase Park.
5	Chase Booster Pump Station	Chase Park	The booster pump station at Chase Park would an operational component of the Rimpau California Pipeline.
6	Chase Tank	Chase Park	The storage facility at Chase Park would be an operational component of the Rimpau California Pipeline.
Large Distribution Pipelines			
7	Buena Vista Tenth Pipeline	Railroad Street and Rimpau Avenue via Buena Vista Avenue and Tenth Street	This pipeline would reinforce the primary loop between WRF1 at the 1380 Zone following construction of the Rimpau California Pipeline.
8	Ontario Slipline	Compton Avenue and Lincoln Avenue	This sliplined pipeline would form a secondary loop along the length of the 1175 Subzone.
9	River Pipeline	River Road from Corydon Avenue through Main Street	This pipeline would expand the 833 Subzone north of Temescal Creek and west of Interstate 15.
10	Sampson Pipeline	Central Park and McKinley Street	This pipeline would form a secondary loop in the 1008.5 Zone to improve performance and eliminate the need for additional local storage.
Medium Distribution Pipelines			
11	Old Temescal Pipeline	Fullerton Avenue and Interstate 15	This pipeline would convert 15.1 gpm of potable water demand for irrigation to reclaimed water demand.
12	Lincoln Foothill Pipeline	Lincoln Avenue between Highgrove Street and Foothill Parkway	This pipeline would convert 12.5 gpm of potable water demand for irrigation to reclaimed water demand at one church and six existing LMD meters.
13	Avenida Del Vista Pipeline	Via Del Rio and MFR demands north of Via Santiago	This pipeline would convert 19.8 gpm of potable water demand for irrigation to reclaimed water demand at three MFR complexes.

Table ES-1. Summary of Projects

Number	Project Component	Location	Description
14	Border Pipeline	Brentwood Drive and MFR demands north of Tenth Street	This pipeline would convert 36.4 gpm of potable water demand for irrigation to reclaimed water demand at numerous MFR and CII complexes.
15	Promenade Pipeline	McKinley Avenue and Cresta Verde Park	This pipeline would convert 26.9 gpm of potable water demand for irrigation to reclaimed water demand at 2 MFR complexes and 15 existing landscaping irrigation meters.
16	Research Pipeline	CII demands west of Auto Center Drive	This pipeline would convert 9 gpm of potable water demand for irrigation to reclaimed water demand.
17	Smith Pipeline	Railroad Street and Pomona Road	This pipeline would convert 13.6 gpm of potable water demand for irrigation and car washing to reclaimed water demand.
18	Via Pacifica Pipeline	MFR and LMD demand north of Ontario Avenue	This pipeline would convert 21.3 gpm of potable water demand for irrigation to reclaimed water demand at two LMD meters and one MFR complex.
19	Tehachapi Pipeline	McKinley Avenue and Tehachapi Park	This pipeline would convert 6.2 gpm of potable water demand for irrigation to reclaimed water demand.
Small Distribution Pipelines			
20	Jenks Pipeline	North and south of Railroad Street	The pipeline would convert 5.8 gpm of potable water demand for irrigation to reclaimed water demand.
21	Airport Circle Pipeline	South of Railroad Street	The pipeline would convert 4.1 gpm of potable water demand for irrigation to reclaimed water demand.
22	Helicopter Pipeline	South of Railroad Street	This pipeline would convert 3.9 gpm of potable water demand for irrigation to reclaimed water demand.
23	Glider Pipeline	South of Railroad Street	The pipeline would convert 1.3 gpm of potable water demand for irrigation to reclaimed water demand.

Table ES-1. Summary of Projects

Number	Project Component	Location	Description
24	Citation Pipeline	South of Railroad Street	This pipeline would convert 1.2 gpm of potable water demand for irrigation to reclaimed water demand.
25	Klug Pipeline	North and south of Railroad Street	This pipeline would convert 3.9 gpm of potable water demand for irrigation to reclaimed water demand.
26	Monica Pipeline	North of Railroad Street	The pipeline would convert 3.2 gpm of potable water demand for irrigation to reclaimed water demand.
27	Chase Hudson Pipeline	LMD demands at Chase Drive and Hudson Avenue	This pipeline would convert 4.7 gpm at two LMD meters from potable water demand for irrigation to reclaimed water demand.
28	Cessna Pipeline	North of Railroad Street	This pipeline would convert 3 gpm of potable water demand for irrigation to reclaimed water demand.
29	Main Citrus Pipeline	Main Street at Citrus Avenue and four CII customers at Main Street and Magnolia Avenue	This pipeline would convert 21.4 gpm of potable water demand for irrigation to reclaimed water demand for CII customers.

Source: City of Corona 2018.

Notes: CII = commercial, industrial, and institutional; FCS = flow control valve/station; gpm = gallons per minute; LMD = landscape maintenance district; MFR = multi-family residential; WRCRWA = Western Riverside County Regional Wastewater Authority; WRF = water reclamation facility

Sources of Supply

The project includes six sources of supply projects that involve future supply from the Western Riverside County Regional Wastewater Authority (WRCRWA). The projects are necessary to accommodate the shift in supply from the existing WRF3 to WRCRWA and would assure adequate supply and transmission capacity related to reclaimed water from WRCRWA (see Figure 2-4a, Source of Supply Project). The projects focus on transmission and system performance.

Distribution Pipelines

Approximately 27 miles of large distribution pipelines are proposed to supply irrigation demands at schools, parks, City landscaping, and the industrial, commercial, institutional (CII), and multi-family residential (MFR) sectors. The project proposes four large distribution pipelines to open previously unserved neighborhoods, commercial zones, and industrial zones to reclaimed water service. Nine new medium distribution pipelines are proposed to target large demand

opportunities with a single feed pipe. In addition, the project proposes 10 small distribution pipelines to target demand opportunities near existing pipelines.

Conversion of Adjacent Customers

The project also includes the conversion of 139.9 gallons per minute (gpm) (225.7 acre-feet per year) of potable water demand for irrigation to reclaimed water demand by adding small irrigated areas one at a time throughout the system and would investigate the possibility of converting other CII demands (e.g., cooling water replenishment, industrial process water, industrial cleaning, dual plumbing). It would require the addition of new laterals and meters as necessary to capture irrigation demand adjacent to existing distribution pipelines.

Data Management Projects

Supervisory Control and Data Acquisition Upgrade

The City has an extensive automation system for its water facilities called Supervisory Control and Data Acquisition (SCADA). SCADA is used primarily for operational control and management of the City's water, wastewater, and reclaimed water assets. The project would install eight SCADA flow monitors to fill gaps in comprehensive supply monitoring and connect to existing remote terminal units at WRF1, WRF2, and WRF3; program SCADA human-machine interfaces for (1) monitoring instantaneous reclaimed water system demand, (2) monitoring reclaimed water supply allocation, and (3) reconciling supply and billing to compute non-revenue reclaimed water; and produce regular reports that summarize and monetize supply allocation.

Irrigation Monitoring

The bulk of irrigation demand is controlled by the City and the Corona-Norco Unified School District. Supply is controlled by the City. There is an opportunity to improve system performance during high-demand periods by adjusting irrigation demand patterns through coordination between operations, engineering, and landscape maintenance. The irrigation monitoring system would facilitate the coordination effort and enhance system performance. It would include the installation of SCADA flow registers at large irrigation meters controlled by the City and the school district; develop methods for adjusting irrigation demand patterns; facilitate data collection, reduction, and transfer among operations, engineering, and landscaping maintenance; and implement irrigation demand pattern adjustments as needed during high-demand periods.

Additional Studies

The 2018 RWMP recommends two studies related to future uses of reclaimed water that would recognize opportunities for the City's expansion of the reclaimed water system. The studies would focus on the entire water service area and would assist the City in refining user demands

for irrigation and groundwater recharge. The studies include the County Irrigation Ordinance Study and the Injection Well Study. The studies are recommended related to future uses of reclaimed water. Preparation of the studies is statutorily exempt from CEQA pursuant to CEQA Guidelines, Section 15262; therefore, they are not evaluated in this PEIR. Implementation of any findings or recommendations developed as a result of the additional studies is not covered under this PEIR and would require independent CEQA review.

Prioritization and Cost Study for the Reclaimed Water Capital Improvement Program

The ultimate goal of a Capital Improvement Program is to provide the City with a long-range planning tool, orchestrate construction of reclaimed water infrastructure improvements in an orderly manner, and keep pace with the City's growth. To accomplish this goal, it is necessary to determine the estimated cost of the needed improvements and to prioritize the projects in a manner that will guarantee that reliable service is maintained in a fiscally responsible manner. Funding mechanisms to finance the improvements can then be identified to implement the program.

The viability of a reclaimed water project is based on the City's reclaimed water policy that includes (1) technical feasibility, (2) financial feasibility, and (3) economic feasibility. In addition, there are intangibles that may make a specific project more or less attractive. By using the Capital Improvement Program, the City is able to prioritize and implement the reclaimed water projects in a manner that is most beneficial for the City and its goals.

Construction

Following certification of this PEIR, the City would determine the implementation schedule for the construction of the improvements contemplated under the project. Once selected for construction, the City would develop project-specific plans and specifications for each project, perform a project-level CEQA review, and file the appropriate documentation for the necessary permits and approvals in advance of awarding a construction contract. Table ES-2 provides an estimated time frame for construction for each project included in the 2018 RWMP.

Table ES-2. Project Construction Duration

Number	Project Component	Duration (Years)
	Sources of Supply	
1	WRCRWA Booster Pump Station (in progress)	2
2	WRCRWA Transmission Pipeline (in progress)	2
3	WRCRWA Flow Control Improvements	2
4	Rimpau California Pipeline	4
5	Chase Booster Pump Station	3
6	Chase Tank	3

Table ES-2. Project Construction Duration

Number	Project Component	Duration (Years)
	Large Distribution Pipelines	
7	Buena Vista Tenth Pipeline	4
8	Ontario Slipline	4
9	River Pipeline	3
10	Sampson Pipeline	4
	Medium Distribution Pipelines	
11	Old Temescal Pipeline (in progress)	2
12	Lincoln Foothill Pipeline	2
13	Avenida Del Vista Pipeline	2
14	Border Pipeline	2
15	Promenade Pipeline	3
16	Research Pipeline	2
17	Smith Pipeline	2
18	Via Pacifica Pipeline	2
19	Tehachapi Pipeline	2
	Small Distribution Pipelines	
20	Jenks Pipeline	2
21	Airport Circle Pipeline	1
22	Helicopter Pipeline	1
23	Glider Pipeline	1
24	Citation Pipeline	1
25	Klug Pipeline	2
26	Monica Pipeline	1
27	Chase Hudson Pipeline	2
28	Cessna Pipeline	1
29	Main Citrus Pipeline	1

Notes: WRCRWA = Western Riverside County Regional Wastewater Authority

Discretionary Actions

The project is a "discretionary project," which is defined in Section 15357 of the CEQA Guidelines as "a project that requires the exercise of judgment or deliberation when the public agency or body decides to approve or disapprove a particular activity." The project would require approval of several discretionary actions by the City and other responsible agencies, which are listed in Table ES-3.

Table ES-3. Discretionary Actions

Action	Approving Agency
Certification of the Program Environmental Impact Report and adoption of the Mitigation Monitoring and Reporting Program, Findings of Fact, and Statement of Overriding Considerations	City
Clean Water Act Section 401 Water Quality Certification and National Pollutant Discharge Elimination System Construction Permits	Santa Ana Regional Water Quality Control Board
Clean Water Act Section 404 Permit	U.S. Army Corps of Engineers
California Fish and Game Code Section 1602 Permit	California Department of Fish and Wildlife
Section 7 of the Endangered Species Act	U.S. Fish and Wildlife Service
Encroachment Permit	California Department of Transportation
Encroachment Permit	Riverside County Flood Control and Water Conservation District

Notes: City = City of Corona

Potential Areas of Controversy and Issues to Be Resolved

Section 15123 of the CEQA Guidelines requires the summary of an EIR to include areas of controversy known to the lead agency, including issues raised by agencies and the public, and to address issues to be resolved, including the choice among alternatives and whether or how to mitigate the significant effects. The City circulated a Notice of Preparation (NOP) to solicit agency and public comments on the scope and content of the environmental analysis beginning May 20, 2020, and ending June 18, 2020. The NOP is included in Appendix A, NOP and NOP Comment Letters.

Comments were considered in preparation of this PEIR. Six comment letters were received during the NOP public review period. A copy of each letter is provided in Appendix A. Additionally, the complete text of the NOP and the NOP comments is included in Appendix A. An NOP scoping meeting was held on June 2, 2020. The comment letters received are summarized in Table ES-4.

Table ES-4. Notice of Preparation Comment Letter Summary

Comment Letter No.	Commenter	Subject of Comment	Location in PEIR Where Comment Is Addressed
1	California Native American Heritage Commission	Recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic region of the water service area and describes AB 52 tribal consultation requirements.	Section 3.5, Cultural Resources; Section 3.18, Tribal Cultural Resources
2	South Coast Air Quality Management District	Recommends using the CEQA Air Quality Handbook and CalEEMod land use emissions software and calculating both regional and localized air quality impacts. Recommends that the PEIR should calculate both construction and operational emissions.	Section 3.3, Air Quality

Table ES-4. Notice of Preparation Comment Letter Summary

Comment Letter No.	Commenter	Subject of Comment	Location in PEIR Where Comment Is Addressed
3	Riverside County Flood Control and Water Conservation District	States that the project facilities should be designed and constructed in a manner to avoid conflicts with the district's Master Drainage Plan facilities. Work that involves district rights-of-way, easements, or facilities will require an encroachment permit from the district. The district would be a CEQA responsible agency.	Chapter 2, Project Description; Section 3.10, Hydrology and Water Quality; and Section 3.19, Utilities and Service Systems
4	Orange County Water District	Discusses discharge rates to Santa Ana River and impacts to riparian habitat and endangered species.	Section 3.4, Biological Resources; Section 3.10, Hydrology and Water Quality
5	Metropolitan Water District of Southern California	States that the Metropolitan Water District would be a CEQA responsible agency. The project description and appropriate impact analysis should include a brief statement of the proposed potable water conversion incentives with the district.	Chapter 2, Project Description; Section 3.10, Hydrology and Water Quality; and Section 3.19, Utilities and Service Systems
6	California Department of Fish and Wildlife	States that the PEIR should include an assessment of biological resources, including habitat types, a general biological inventory of species that have the potential to be on site, and a complete inventory of sensitive species located in the project footprint and off-site areas. Recommends protocol surveys for state and federally listed endangered species and a state threatened species. States that the PEIR should provide a thorough discussion of the direct, indirect, and cumulative impacts expected to adversely affect biological resources as a result of the project. The discussion should include project-related changes on drainage patterns and water quality on, upstream, and downstream of the project site; potential indirect project impacts on biological resources; and impacts to adjacent open space lands. Recommends that the PEIR describe and analyze a range of reasonable alternatives and identify mitigation measures that would avoid or minimize impacts.	Section 3.4, Biological Resources

Notes: AB = Assembly Bill; CalEEMod = California Emissions Estimator Model; CEQA = California Environmental Quality Act; PEIR = Program Environmental Impact Report

Summary of Project Impacts

This EIR examines the potential environmental effects of the proposed project, including information related to existing site conditions, analyses of the types and magnitude of individual and cumulative environmental impacts, and feasible mitigation measures that could reduce or avoid environmental impacts. In accordance with Appendix G of the CEQA Guidelines, potential environmental effects of the proposed project were analyzed for the following areas:

- Aesthetics
- Agriculture and Forestry

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

Table ES-5, Summary of Impacts of the Proposed Project, at the end of this chapter provides a summary of the significant environmental impacts that could result from implementation of the proposed project and feasible mitigation measures that would reduce or avoid the impacts. For each impact, Table ES-5 identifies the applicable mitigation measures and the level of significance of the impact after implementation of the mitigation measures.

Summary of Project Alternatives

Section 15126.6(d) of the CEQA Guidelines requires an EIR to provide sufficient information about each alternative to allow for meaningful evaluation, analysis, and comparison with the project. The City selected the alternatives for analysis based on the "rule of reason" and ability for each alternative to meet most of the basic project objectives. A description of the three alternatives carried forward for analysis is provided in the following subsections.

Alternative 1: No Project/Existing 2001 RWMP Alternative

Under the No Project/Existing 2001 RWMP Alternative, the 2018 RWMP would not be adopted and the City would continue with implementation of the adopted 2001 RWMP. Under this alternative, the existing reclaimed water system facilities and substructures would continue to operate. No new proposed reclaimed water source of supply, large distribution pipeline, medium distribution pipeline, or small distribution pipeline projects would be constructed or operated. In

addition, this alternative would exclude the conversion of adjacent customers, data management projects, and the proposed additional studies.

Alternative 2: Reduced Project Alternative

The Reduced Project Alternative proposes to reduce the number of projects proposed in the 2018 RWMP. Under the Reduced Project Alternative, the 2018 RWMP would not include the WRCRWA Flow Control Improvement Project, the Promenade Pipeline, or the Research Pipeline. All other source supply projects; small, medium, and large distribution pipelines; conversion of agricultural customers; data management projects; and other studies would be included. This alternative would reduce the biological impacts associated with implementation of the 2018 RWMP.

Table ES-5. Summary of Impacts of the Proposed Project

Issue Area	Mitigation Measure(s)	Impact Determination After Mitigation
Aesthetics		
Substantial Degradation of the Existing Visual Character or Conflict with Applicable Regulations	**AES-1: Landscape Plan.** To screen aboveground project facilities during facility design, the design consultant shall prepare a Landscape Plan for each aboveground project facility identified in the 2018 Reclaimed Water Master Plan, including the Chase Tank facility. The Landscape Plan shall include measures to restore disturbed areas by re-establishing existing topography, including replanting trees or reseeding with a native seed mix typical of the immediately surrounding area. The Landscape Plan shall include a required seed mix and plant palette. Vegetation screening shall be included in the Landscape Plan to shield proposed aboveground facilities from public view. The Landscape Plan shall include a Monitoring Plan to ensure that site restoration and vegetation establishment is successful.	Less than Significant
Biological Resources		
Sensitive Plant Species	**BIO-1: Sensitive Plant Species Surveys.** If one or more sensitive plant species has the potential to occur on the Western Riverside County Regional Wastewater Authority Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites, focused species surveys shall be conducted before construction to determine the presence and absence of these species to adequately evaluate potential direct or indirect impacts to these species. Sensitive plant species surveys shall be conducted by a qualified biologist retained by the City of Corona during the appropriate season to detect the species as part of the project design phase. Surveys shall be floristic in nature and include lists of the plants identified in the survey area. Surveys shall be conducted on foot, employing a level of effort sufficient to provide comprehensive coverage. The locations and prevalence (estimated total numbers and percent cover, as applicable) of sensitive plants shall be recorded. The sensitive plant species surveys shall be valid for 3 years. If site-specific surveys are not required because a survey was conducted within the last 3 years, impact assessment and minimization and mitigation requirements shall be based on the most recent available survey. These requirements shall also include an analysis of the potential for sensitive plant species to occur on site based on	Less than Significant

Table ES-5. Summary of Impacts of the Proposed Project

Issue Area	Mitigation Measure(s)	Impact Determination After Mitigation
	existing site conditions and shall be consistent with the most recent U.S. Fish and Wildlife Service and California Department of Fish and Wildlife survey protocols. **BIO-2: Permanent Impacts to Non-Native Grassland.** Permanent impacts to sensitive non-native grassland shall be mitigated through the preservation of habitat, habitat creation, or enhancement, or combination thereof, in the City of Corona or off site through habitat acquisition and preservation or purchase of credits from an approved conservation bank. Mitigation for impacts to non-native grassland shall be in-kind using native grasses. Permanent impacts to sensitive non-native grassland shall be mitigated at a ratio of 0.5:1. For on-site mitigation, a detailed Mitigation Plan shall be prepared before the start of construction (not applicable to mitigation met through the purchase of credits from an approved wetland mitigation bank). The Mitigation Plan shall include at a minimum the proposed location of the mitigation areas, site preparation, a plant palette, installation procedures, success criteria, fencing and signage, monitoring requirements, and other details of the habitat restoration effort and shall be prepared by a qualified biologist. **BIO-3: Temporary Impacts to Non-Native Grassland.** Temporary impacts to non-native grassland shall be restored in place or elsewhere on the project site at a 1:1 replacement ratio using native grass species. A Revegetation Plan shall be prepared. The Revegetation Plan shall include site preparation specifications, a plant palette, installation procedures, development of reasonable success criteria, appropriate monitoring and reporting protocols, implementation timelines, and contingency measures in the event of restoration failure. The City of Corona shall provide guidance for and oversight of the Revegetation Plan and implementation. In the event that non-native grassland vegetation cannot be restored in place or elsewhere on the project site after construction, these impacts would be considered permanent, and Mitigation Measure BIO-2 would be implemented. The 0.5:1 permanent impacts and 1:1 temporary impacts mitigation ratios for the project would follow the accepted ratios established by the Western Riverside County Multiple Species Habitat Conservation Plan to reduce potentially significant impacts to sensitive vegetation communities to less than significant. **BIO-4: Invasive Plant Species Prevention.** During construction of the Western Riverside County Regional Wastewater Authority Flow Control Improvements, Promenade Pipeline, and Research Pipeline projects, the following measures shall be implemented to minimize the spread of invasive plant species: • Construction equipment shall be cleaned before coming to the project sites.	

Table ES-5. Summary of Impacts of the Proposed Project

Issue Area	Mitigation Measure(s)	Impact Determination After Mitigation
	• Weed-free straw wattles shall be used for erosion control. **BIO-5: Flagging and Fencing**. If sensitive biological resources are identified on or adjacent to the Western Riverside County Regional Wastewater Authority Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites, the construction limits shall be clearly identified on construction drawings and flagged on the project sites to ensure impacts to sensitive biological resources are avoided or minimized to the extent feasible. Before implementing construction activities, a qualified biologist shall verify that the flagging clearly delineates the construction limits and sensitive resources to be avoided. **BIO-6: Contractor Training Program.** If sensitive biological resources are known to occur on or adjacent to the Western Riverside County Regional Wastewater Authority Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites, a project-specific contractor training program shall be developed and implemented to educate project contractors on the sensitive biological resources on and adjacent to the project sites and measures being implemented to avoid or minimize impacts to these species. A qualified biologist shall develop and implement the contractor training program. **BIO-7: Biological Monitor.** If sensitive biological resources are present on or adjacent to the Western Riverside County Regional Wastewater Authority Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites, and impacts may occur from implementation of construction activities, a qualified biological monitor may be required during all or a portion of the construction activities to ensure impacts to the sensitive biological resources are avoided or minimized to the extent feasible. The specific biological monitoring requirements shall be evaluated on a project-by-project basis. The qualified biological monitor shall be approved by the City of Corona based on applicable experience with the sensitive biological resources that may be impacted.	
Sensitive Animal Species	**BIO-5, BIO-6, and BIO-7.** **BIO-8: Burrowing Owl Surveys.** A burrowing owl clearance survey shall be conducted before any ground-disturbing activities in accordance with the California Department of Fish and Wildlife 2012 Staff Report on Burrowing Owl Mitigation. Two preconstruction clearance surveys shall be conducted 14–30 days and 24 hours before ground-disturbing activities to document the continued absence of burrowing owl from the project sites. The burrowing owl surveys shall be valid for 1 year. **BIO-9: Preconstruction Nesting Bird Surveys**. To the extent feasible, grubbing, trimming, or clearing of vegetation from project sites shall not occur during the general bird nesting season (January 15 through September 15). If grubbing, trimming, or clearing of vegetation	Less than Significant

Table ES-5. Summary of Impacts of the Proposed Project

Issue Area	Mitigation Measure(s)	Impact Determination After Mitigation
	cannot feasibly occur outside of the general bird nesting season, a qualified biologist shall perform a preconstruction nesting bird survey at project sites with vegetation supporting nesting birds. Nesting bird surveys shall occur within 10 days before the start of vegetation clearing or grubbing to determine if active bird nests are present. If no active bird nests are identified on the project sites or within a 300-foot buffer of the project sites, no further mitigation is necessary. If active nests of bird species covered by the Migratory Bird Treaty Act are detected on the project site during the 10-day preconstruction survey, construction activities should stay outside of a 300-foot buffer around the active nest. For raptor species, this buffer is expanded to 500 feet. It is recommended that a biological monitor be present to delineate the boundaries of the buffer area and to monitor the active nest to ensure that nesting behavior is not adversely affected by the construction activity. Once the young have fledged, and a qualified biologist has determined the nest is inactive, normal construction activities can occur. **BIO-10: Night Lighting.** If temporary night lighting is necessary during construction adjacent to sensitive vegetation communities, construction contractors shall ensure lights are directed away from sensitive vegetation communities and shielded to minimize temporary lighting of the surrounding habitat and should be of the lowest illumination necessary for human safety.	
Riparian Habitat or Other Sensitive Natural Community	**BIO-2 and BIO-3.** **BIO-11: Biological Resources Survey/Habitat Assessment.** For projects proposed in the 2018 Reclaimed Water Master Plan on undeveloped land, including the Western Riverside County Regional Wastewater Authority Flow Control Improvements, Promenade Pipeline, and Research Pipeline, a site-specific biological resources survey shall be conducted during the project design phase. The biological resources survey shall be conducted by a qualified biologist and shall include but not be limited to the following: • An analysis of available literature and biological databases, such as the California Natural Diversity Database, to determine sensitive biological resources that have been reported historically from the proposed project vicinity. • A review of current land use and land ownership within the project vicinity. • An assessment and mapping of vegetation communities present within the proposed project vicinity. If vegetation community mapping has not been conducted on the site in the previous 3 years, updated vegetation mapping shall be conducted by a qualified biologist as part of the project planning and environmental review process. Vegetation communities shall be mapped according to the Manual of California Vegetation at the alliance level, and a crosswalk table with Holland vegetation communities shall be provided.	

Table ES-5. Summary of Impacts of the Proposed Project

Issue Area	Mitigation Measure(s)	Impact Determination After Mitigation
	• A general assessment of the potential for aquatic resources, including wetlands and riparian habitats, to occur on site. • An evaluation of potential local and regional wildlife movement corridors. • If the project sites support vegetation communities that may provide habitat for plant or animal species, a focused habitat assessment conducted by a qualified biologist to determine the potential for sensitive plant or animal species to occur on or adjacent to the project sites. The results of the biological survey shall be presented in a biological survey letter report.	
Jurisdictional Aquatic Resources	**BIO-12: Aquatic Resources Delineation**. If sensitive aquatic resources are identified on the Western Riverside County Regional Wastewater Authority Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites, a qualified biologist shall conduct an aquatic resources delineation following the methods outlined in the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual and the Regional Supplement to the U.S. Army Corps of Engineers Wetland Delineation Manual: Arid West Region to map the extent of wetlands and non-wetland waters, determine jurisdiction, and assess potential impacts. The results of the delineation shall be presented in an Aquatic Resources Delineation Report and shall be incorporated into the California Environmental Quality Act documents required for approval and permitting of the proposed project. **BIO-13: Aquatic Resources Permitting.** If the Western Riverside County Regional Wastewater Authority Flow Control Improvements, Promenade Pipeline, and Research Pipeline projects would impact sensitive aquatic resources, permits and authorizations shall be obtained from the U.S. Army Corps Engineers, California Department of Fish and Wildlife, or Regional Water Quality Control Board. The regulatory agency authorizations would include impact avoidance and minimization measures and mitigation measures for unavoidable impacts. Specific avoidance, minimization, and mitigation measures for impacts to jurisdictional resources shall be determined through discussions with the regulatory agencies during the proposed project permitting process and may include monetary contributions to a mitigation bank or habitat creation, restoration, or enhancement.	
Cultural Resources		
Historic Resources	**CUL-1: Construction-Related Vibration.** Construction Plans for individual projects under the 2018 Reclaimed Water Master Plan shall include a requirement that no vibratory equipment be operated within 40 feet of a structure eligible or listed on the National Register of Historic Places, California Register of Historical Resources, or Corona Register. Instead, alternative construction equipment shall be used, such as smooth wheel rollers without a vibratory component. This requirement shall be included on individual project Construction Plans and be submitted to the City of Corona, Public Works Department, for	Less than Significant

Table ES-5. Summary of Impacts of the Proposed Project

Issue Area	Mitigation Measure(s)	Impact Determination After Mitigation
	review before approval of final design. For structures that have not been previously evaluated, the City Engineer shall consult with a qualified Architectural Historian, approved by the City of Corona, to conduct an evaluation of the structure. If the structure is determined eligible or already eligible or listed in the National Register of Historic Places, California Register of Historical Resources, or Corona Register, structural evaluation shall be conducted by a Professional Structural Engineer to identify maximum allowable levels of vibration during construction. If a historic determination is required, the engineer shall provide recommendations on approaches to stabilization in conjunction with vibration monitoring. Permanent stabilization measures shall follow the Secretary of the Interior's guidelines for the treatment of historic properties. If the buildings are temporarily stabilized for the duration of construction activities, when removed, the buildings shall be restored to their preconstruction condition when the stabilization measures are removed.	
Archaeological Resources	**CUL-2: Project-Specific Archaeological Survey.** Projects identified in the 2018 Reclaimed Water Master Plan should be reviewed by the City of Corona to determine if a site-specific archaeological survey should be conducted. Site-specific archaeological surveys should be conducted for individual projects identified in the 2018 Reclaimed Water Master Plan that are in areas that have not been previously developed or would impact land with visible ground surface, or projects that may impact built environment resources that meet the age threshold for eligibility. If cultural resources are identified during the site-specific archaeological survey, then evaluation of the resources for the California Register of Historical Resources and the Corona Register should be conducted to determine if the resource is significant under the California Environmental Quality Act and would be adversely impacted by the project. A Native American monitor from a culturally affiliated tribe should be present during any archaeological excavations involving prehistoric cultural resources. If no significant resources are found, and site conditions are such that there is no potential for further discoveries, then no further action is required. Resources found to be non-significant as a result of a survey and evaluation shall require no further work beyond documentation of the resources on the appropriate Department of Parks and Recreation site forms and inclusion of results in a technical report. If significant resources are present, then avoidance, preservation in place, or a data recovery program is recommended. The data recovery program is subject to the provisions outlined in California Public Resources Code, Section 21083.2. The data recovery program should be conducted in accordance with the Office of Historic Preservation's Archaeological Resource Management Reports: Recommended Contents and Format and Guidelines for Archaeological Research Designs. The data recovery program must be reviewed and approved by the City. If no significant resources are found, but if there is a potential for	Less than Significant

Table ES-5. Summary of Impacts of the Proposed Project

Issue Area	Mitigation Measure(s)	Impact Determination After Mitigation
	unknown archaeological resources, or tribal cultural resources to be uncovered during construction activities, then implementation of Mitigation Measure CUL-3 is recommended. **CUL-3: Archaeological and Native American Monitoring Program.** Because there is always a potential for encountering cultural resources during excavation, the creation of an archaeological and Native American monitoring program is recommended for projects identified in the 2018 Reclaimed Water Master Plan that would conduct new ground disturbance in areas identified as moderate or high sensitivity for cultural resources and for project components that are within 100 feet of previously recorded archaeological resources. The archaeological and Native American monitoring program shall consist of the full-time presence of a qualified archaeologist and traditionally and culturally affiliated Native American monitor during new ground-disturbing activities. New ground disturbance can include new trenching or expanding previously excavated trenches, grading, and vegetation removal. The archaeological and Native American monitoring program should include the following: 1. Noting archaeological and Native American monitoring on applicable construction documents, including plans, shall be required. 2. The archaeologist and Native American monitor should attend the preconstruction meeting with the contractor or the City of Corona. 3. The archaeologist shall maintain ongoing collaborative consultation with the Native American monitor during ground-disturbing or altering activities as identified above. 4. The archaeologist or Native American monitor may halt ground-disturbing activities if archaeological artifact deposits or cultural features are discovered. In general, ground-disturbing activities shall be directed away from these deposits for a short time to allow a determination of potential significance, the subject of which shall be determined by the archaeologist and the Native American monitor. Ground-disturbing activities shall not resume until the archaeologist, in consultation with the Native American monitor and the City, deems the cultural resource or feature has been appropriately documented and protected. 5. Archaeological isolates and non-significant materials shall be minimally documented in the field, and ground disturbance shall be allowed to resume. 6. The avoidance and protection of discovered unknown and significant cultural resources and/or unique archaeological resources is the preferable mitigation for the proposed project. If avoidance is not feasible, a Data Recovery Plan may be authorized by the City of Corona as the lead agency under the California Environmental Quality Act. 7. Before the release of any bonds associated with the construction of the project components, a Monitoring Report or Evaluation Report that describes the results, analysis, and conclusions of the archaeological and Native American monitoring program	

Table ES-5. Summary of Impacts of the Proposed Project

Issue Area	Mitigation Measure(s)	Impact Determination After Mitigation
	(including but not limited to a data recovery program) shall be submitted by the archaeologist, along with the Native American monitor's notes and comments, to the City of Corona for approval.	
Human Remains	**CUL-2 and CUL-3.** **CUL-4: Identification and Treatment of Human Remains**. In the event that human remains or possible human remains are encountered during any work associated with the projects identified in the 2018 Reclaimed Water Master Plan, ground disturbance within 25 feet of the remains shall halt and California Environmental Quality Act Guidelines, Section 15064.5(e); California Public Resource Code, Section 5097.98; and California Health and Safety Code, Section 7050.5, should be followed. If Native American remains are discovered, the remains shall be kept in situ (in place) or in a secure location approved by the Native American monitor until the repatriation process can be completed.	Less than Significant
Geology, Soils, and Paleontological Resources		
Seismic Hazards	**GEO-1: Site-Specific Soil and Geotechnical Study.** The City of Corona shall prepare a site-specific soil and geotechnical engineering study before final design of individual projects under the 2018 Reclaimed Water Master Plan that would involve ground disturbance, including grading and excavation. Each study shall be performed by a licensed professional, including but not limited to a geologist, certified soil scientist, certified agronomist, registered agricultural engineer, registered civil or structural engineer, and/or certified professional erosion and sediment control specialist with expertise in geotechnical engineering issues, who is registered and/or certified in the State of California, to determine site-specific impacts and to recommend site-specific mitigations. Feasible recommendations addressing potential seismic hazards and soil constraints shall be implemented.	Less than Significant
Geological Stability	**GEO-1.**	Less than Significant
Expansive Soils	**GEO-1.**	Less than Significant
Paleontological Resources	**GEO-2: Paleontological Monitoring.** Paleontological monitoring during excavation, grading or trenching shall be required for all projects identified in the 2018 Reclaimed Water Master Plan that would excavate to a depth of 10 feet or more in areas identified as having a high paleontological sensitivity. Before the approval of project-specific construction documents for each project, the City Engineer shall retain a qualified professional paleontologist to observe all earth-disturbing activities in areas greater than 10 feet in depth. Fossil materials recovered during paleontological monitoring shall be cleaned, identified, cataloged, and analyzed in accordance with standard professional practices. The results of the fieldwork and laboratory analysis shall be submitted in a technical report and the entire collection transferred to an approved facility. If no resources are found during the monitoring effort, a monitoring summary shall be submitted to the City Engineer within 4 weeks of completion of the monitoring effort.	Less than Significant

Table ES-5. Summary of Impacts of the Proposed Project

Issue Area	Mitigation Measure(s)	Impact Determination After Mitigation
	Hazards and Hazardous Materials	
Accidental Release of Hazardous Materials	**HAZ-1: Preparation of Phase 1 Environmental Site Assessment.** Before construction of the Rimpau California Pipeline, River Pipeline, Sampson Pipeline, Buena Vista Tenth Avenue Pipeline, and Klug Pipeline, the City of Corona shall conduct a Phase 1 Environmental Site Assessment. The Phase 1 Environmental Site Assessment shall be prepared by a registered environmental assessor or equally qualified professional to assess the potential for contaminated soil or groundwater conditions at the project sites and along conveyance alignments. The Phase 1 Environmental Site Assessment shall include a review of appropriate federal and state hazardous materials databases and relevant local hazardous material site databases for hazardous waste in on-site and off-site locations within a one-quarter mile radius of the project sites and along conveyance alignments. The Phase 1 Environmental Site Assessment shall also include a review of existing or past land uses and aerial photographs, a summary of results of reconnaissance site visits, and a review of other relevant existing information that could identify the potential existence of contaminated soil or groundwater. If no contaminated soil or groundwater is identified, or if the Phase 1 Environmental Site Assessment does not recommend any further investigation, the City of Corona shall proceed with final project design and construction. If existing soil or groundwater contamination is identified, and if the Phase 1 Environmental Site Assessment recommends further review, the City of Corona shall retain a registered environmental assessor to conduct follow-up sampling to characterize the contamination and to identify any required remediation that shall be conducted consistent with applicable regulations before any earth-disturbing activities. The registered environmental assessor shall prepare a report that includes but is not limited to activities performed for the assessment, a summary of anticipated contaminants and contaminant concentrations at the proposed construction sites, and recommendations for appropriate handling of any contaminated materials during construction. **HAZ-2: Halt of Construction Work if Hazardous Materials Are Encountered.** Before construction, workers shall be trained on how to identify hazardous materials and procedures if undefined, suspected contaminated soil or groundwater is encountered. If unidentified or suspected contaminated soil or groundwater is encountered during construction activities of the projects identified in the 2018 Reclaimed Water Master Plan, the construction contractors shall immediately stop surface or subsurface activities in the event that potentially hazardous materials are encountered, an odor is identified, or considerably stained soil is visible. Contractors shall notify the City of Corona Public Works Department Project Manager immediately and follow the applicable local, state, and federal regulations regarding the discovery, response, disposal, and remediation of hazardous materials encountered during the construction process. This requirement shall be included in individual project Construction Plans and submitted to the City of Corona Public Works Department for review before approval of final design.	Less than Significant

Table ES-5. Summary of Impacts of the Proposed Project

Issue Area	Mitigation Measure(s)	Impact Determination After Mitigation
Emergency Response Plan or Evacuation Plan	**HAZ-3: Prepare and Implement a Construction Traffic Control Plan.** The construction contractor shall prepare and implement a Construction Traffic Control Plan for roadways and intersections affected by the individual projects identified in the 2018 RWMP. This requirement shall be included on individual project Construction Plans and be submitted to the City of Corona Public Works Department for review before approval of final design. The Construction Traffic Control Plan shall comply with local agency requirements with jurisdiction over project construction and shall include but not be limited to the following elements based on local site and roadway conditions: • Provide street layout showing location of construction activity and surrounding streets to be used as detour routes, including special signage. • Post a minimum 72-hour advance warning of construction activities in affected roadways to allow motorists to select alternative routes. • Restrict delivery of construction materials to non-peak travel periods (9:00 a.m.–3:00 p.m.) as appropriate. • Maintain the maximum travel lane capacity during non-construction periods and provide flagger control at construction sites to manage traffic control and flows • Maintain access for driveways and private roads, except for brief periods of construction, in which case property owners shall be notified. • Require temporary steel plate trench crossings as needed to maintain reasonable access to homes, businesses, and streets. When required by the applicable encroachment permit, maintain the existing lane configuration during nonworking hours by covering the trench or jack pit with steel plates or by using temporary backfill. • Require appropriate warning signage and safety lighting for construction zones. • Access for emergency vehicles shall be maintained at all times. Police, fire, and emergency services shall be notified of the timing, location, and duration of construction activities that could hinder or delay emergency access through the construction period. • Coordinate with regional transit agencies, including Corona Cruiser and Riverside Transit Agency, to plan as needed for the temporary relocation of bus stops or detour of transit routes on affected distribution pipeline alignments. • Identify detours where available for bicyclists and pedestrians in areas potentially affected by project construction. • Provide adequate off-street parking locations for worker vehicles and construction equipment where on-street parking availability is insufficient. • Repair or restore the roadway right-of-way to its original condition or better upon completion of work.	Less than Significant

Table ES-5. Summary of Impacts of the Proposed Project

Issue Area	Mitigation Measure(s)	Impact Determination After Mitigation
Wildland Fire	**HAZ-4: Maintain Construction Area Clear of Combustible Materials.** During construction, the contractor shall ensure that staging areas, welding areas, or areas slated for construction using spark-producing equipment shall be cleared of combustible vegetation or other materials that could serve as fire fuel. Vegetation clearing shall be coordinated with a qualified biologist before removal. The contractor shall keep these areas clear of combustible materials to maintain a firebreak. Any construction equipment that normally includes a spark arrester shall be in good working order. This includes but is not limited to vehicles, heavy equipment, and chainsaws. This requirement shall be included on individual project Construction Plans and be submitted to the City of Corona Public Works Department for review before approval of final design. **HAZ-5: Provide Accessible Fire Suppression Equipment.** Work crews shall be required to have sufficient fire suppression equipment readily available to ensure that any fire resulting from construction activities is immediately extinguished. Off-road equipment using internal combustion engines shall be equipped with spark arrestors. This requirement shall be included on individual project Construction Plans and be submitted to the City of Corona Public Works Department for review before approval of final design.	Less than Significant
Land Use and Planning		
Conflict with Land Use Plan, Policy, or Regulation	**AES-1, BIO-1, BIO-2, BIO-3, BIO-4, BIO-5, BIO-6, BIO-7, BIO-8, BIO-9, BIO-10, BIO-11, BIO-12, BIO-13, CUL-1, CUL-2, CUL-3, CUL-4, GEO-1, HAZ-3, and NOI-1.**	Less than Significant
Noise		
Exceedance of Noise Standards	**NOI-1: Construction Noise Reduction Measures.** Individual projects under the 2018 Reclaimed Water Master Plan shall implement construction noise reduction measures to ensure compliance with the City of Corona's Noise Ordinance. The following measures shall be included on individual project Construction Plans and be submitted to the City of Corona, Public Works Department, for review before approval of final design: • Construction equipment shall be properly outfitted and maintained with manufacturer recommended noise reduction devices. • Diesel equipment shall be operated with closed engine doors and equipped with factory recommended mufflers. • Mobile or fixed "package" equipment (e.g., arc-welders and air compressors) shall be equipped with shrouds and noise control features that are readily available for that type of equipment. • Electrically powered equipment shall be used instead of pneumatic or internal-combustion powered equipment, where feasible. • Unnecessary idling of internal combustion engines (e.g., in	Less than Significant

Table ES-5. Summary of Impacts of the Proposed Project

Issue Area	Mitigation Measure(s)	Impact Determination After Mitigation
	excess of 5 minutes) shall be prohibited. • Material stockpiles and mobile equipment staging, parking, and maintenance areas shall be located as far as practicable from noise-sensitive receptors. • The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be limited to safety warning purposes only. • No project-related public address or music system shall be audible at any adjacent sensitive receptor. • The City of Corona shall notify residences within 100 feet of the construction area in writing at least 2 weeks prior to any construction activity such as concrete sawing, asphalt removal, or heavy grading operations. The notification shall describe the activities anticipated, provide dates and hours, and provide contact information with a description of a complaint and response procedure. • In the event that a complaint is received, noise monitoring shall be conducted to determine whether hourly average noise levels during construction exceed ambient noise levels by more than 5 A-weighted decibels Equivalent Energy Level. A 1-hour noise measurements shall be taken during a normal weekday without construction activity, and a 1-hour measurement during typical construction. In the event that the above measures do not reduce noise levels to 5 A-weighted decibels or less above ambient conditions at the affected receptor, temporary sound barriers or sound blankets may be installed between construction operations and adjacent noise-sensitive receptors. Due to equipment exhaust pipes being approximately 7–8 feet above ground, a sound barrier at least 10 feet in height above grade would be required to mitigate noise to an acceptable level. • The on-site construction supervisor shall have the responsibility and authority to receive and resolve noise complaints. A clear appeal process for the affected resident shall be established before construction begins to allow for resolution of noise problems that cannot be immediately solved by the site supervisor. • All construction activities, including deliveries and engine warm-up, shall be prohibited between the hours of 8:00 p.m. and 7:00 a.m., Monday through Saturday, and 6:00 p.m. to 10:00 a.m. on Sundays and federal holidays.	
Excessive Groundborne Vibration and Noise	**NOI-2: Vibratory Equipment Limitations.** Construction Plans for individual projects under the 2018 Reclaimed Water Master Plan shall include a requirement that no vibratory equipment be operated within 40 feet of a structure eligible or listed on the National Register of Historic Places, California Register of Historical Resources, or Corona Register. Instead, alternative construction equipment shall be used, such as smooth wheel rollers without a vibratory component. This requirement shall be included on individual project Construction Plans and be submitted to the City of Corona, Public Works Department, for review before approval of final design.	Less than Significant

Table ES-5. Summary of Impacts of the Proposed Project

Issue Area	Mitigation Measure(s)	Impact Determination After Mitigation
Transportation		
Conflict with Program, Plan, Ordinance, or Policy	**HAZ-3.**	Less than Significant
Inadequate Emergency Access	**HAZ-3.**	Less than Significant
Tribal Cultural Resources		
Tribal Cultural Resources	**CUL-2, CUL-3, and CUL-4.**	Less than Significant
Utilities and Service Systems		
Relocation or Construction of New Facilities	**AES-1, BIO-1, BIO-2, BIO-3, BIO-4, BIO-5, BIO-6, BIO-7, BIO-8, BIO-9, BIO-10, BIO-11, BIO-12, BIO-13, CUL-1, CUL-2, CUL-3, CUL-4, GEO-1, GEO-2, HAZ-1, HAZ-2, HAZ-3, HAZ-4, HAZ-5, NOI-1, and NOI-2.**	Less than Significant
Wildfire		
Emergency Response or Evacuation Plan	**HAZ-3.**	Less than Significant
Uncontrolled Spread of Wildfire	**HAZ-4 and HAZ-5.**	Less than Significant
Requirement of Installation or Maintenance of Associated Infrastructure	**HAZ-4 and HAZ-5.**	Less than Significant

Chapter 1 Introduction

1.1 Project Overview

The City of Corona (City) prepared the 2018 Reclaimed Water Master Plan (project or 2018 RWMP) to help meet its goals for reclaimed water use by recommending the implementation of appropriate projects, programs, and additional studies.

1.2 Project Background

This section provides background information on the City's reclaimed water system and includes a description of the existing infrastructure associated with the reclaimed water system.

1.2.1 1998 Sewer Master Plan

In 1998, the City adopted a Sewer Master Plan that included a comprehensive assessment of the then-existing system and a plan for future development. The 1998 Sewer Master Plan identified sewer lines that were deficient in their ability to handle projected flows, and assisted in the development of capital improvement projects composed of sewer replacement and parallel facilities. One conclusion of the 1998 Sewer Master Plan established the need for the City to be able to treat and dispose of approximately 21.6 million gallons per day of wastewater from its service area at ultimate development. This required capacity would be provided through the expansion of Water Reclamation Facility (WRF) 1 and WRF2 and planned construction of a new WRF3 with additional bypass and diversion capacity to the Western Riverside County Regional Wastewater Authority and the Santa Ana River Interceptor at Lincoln Avenue.

The 1998 Sewer Master Plan contained a concept-level feasibility analysis that concluded that a staged recycled water system could be constructed to provide and deliver as much as 4,200 acre-feet per year of recycled water for various beneficial uses, including groundwater recharge. In December 1998, the City began to develop its first Reclaimed Water Master Plan.

1.2.2 2001 Reclaimed Water Master Plan

The 2001 Reclaimed Water Master Plan was authorized by the City to provide a comprehensive assessment of the City's capabilities to efficiently use treated effluent from its existing and future wastewater treatment plants to reduce dependence on imported water or groundwater. A preliminary market survey identified 50 sites where the City's recycled water could potentially be used for irrigation purposes, replacing existing uses of potable or well water. Consideration was also given to use recycled water for industrial uses and groundwater recharge.

1.2.3 Existing System

The existing reclaimed water distribution system is relatively young, having been built within the last 12 years. The primary system components include 3 storage tanks with a combined capacity of 7 million gallons, 6 pumping facilities, 8 control valve stations, 54.5 miles of pipelines, and 331 permanent meters.

The system is organized into pressure zones to deliver reclaimed water within a preferred pressure range. The existing zones are described in Table 1-1. Figure 1-1, Existing Reclaimed Water System, shows the locations of the existing reclaimed water facilities serving each pressure zone and subzone.

Table 1-1. Existing Zones

Zone	Description
1380 Zone	Zone defined by high water line of Gilbert Tank
1008.5 Zone	Zone defined by high water line of Border Tank
1175 Subzone	Fullerton Avenue Subzone
1025 Subzone	Ontario Avenue Subzone
1020 Subzone	Temescal Canyon Road Subzone
833 Subzone	Stagecoach/Butterfield Subzone
1436 Subzone	Orange Heights Booster Pump Station Subzone
Creek	Outfall to Santa Ana River
Ponds	Cota/Rincon Percolation Ponds

Source: City of Corona 2018.

1.2.3.1 Supply

Three City-owned and operated WRFs (WRF1, WRF2, and WRF3) and two non-potable wells currently provide the existing reclaimed water supply. The average annual production for these facilities is approximately 11.35 million gallons per day. This level of production is equal to 12,700 acre-feet per year. Due to population growth, supply is anticipated to increase incrementally by an additional 0.88 million gallons per day through 2040 (approximately 7.8 percent). WRF1 and WRF2 provide conventional treatment consisting of primary (screening), secondary (reduction of biomass), tertiary (filtration), and disinfection (chlorination). Treatment at WRF3 consists of primary (screening), membrane bioreactor (combined biomass reduction and filtration), and disinfection (chlorination).

The primary demand for reclaimed water is irrigation. The reclaimed water system serves the irrigation demands of City parks, schools, and numerous City, commercial, industrial, and multi-family residential common area landscaping. A small amount of reclaimed water serves industrial dual plumbing (e.g., toilet flushing), sewer flushing, street sweeping, replenishment of cooling

water, replenishment of recreational impoundment, firefighting training, and construction needs (e.g., dust control and soil compaction).

1.2.3.2 Storage Facilities

Currently, on-site storage facilities of reclaimed water are at WRF1 and WRF3. In addition, currently, two water storage facilities, the Border Tank and Gilbert Tank, are in the reclaimed water distribution system. The Border Tank has a capacity of 2 million gallons, and the Gilbert Tank has a capacity of 1 million gallons.

1.2.3.3 Booster Pump Stations

Currently, the City has six active reclaimed water booster pump stations. The reclaimed water booster pump stations deliver reclaimed water from reclamation treatment plants to the reclaimed water system and lift water from lower zones to higher zones.

1.2.3.4 Pipelines

The existing reclaimed water system also includes a system of pipelines. The size and material of the current pipelines vary based on pressure constraints, function (i.e., distribution versus transmission), and other location-specific constraints (i.e., crossing continuous boundaries, proximity to potable water pipelines). The size of the pipelines varies from 6 to 36 inches. The materials of the distribution pipelines vary and include ductile iron, polyvinyl chloride (PVC), cement mortar-lined concrete, high-density polyethylene (HDPE), and reinforced concrete.

1.2.3.5 Hydrants, Blow-Offs, and Valves

The reclaimed water system also includes 100 hydrants. There are no dedicated blow-off valves; rather, hydrants were installed to serve as blow-off valves.

Air valves are strategically located at high points in the substructure and as needed to release accumulated air from the system and to protect the system against the effects of pressure transient (surge).

In addition, isolation valves, which shut off portions of the reclaimed water system for emergency, maintenance, or construction purposes, are included. In general, these valves are installed in groups or clusters, such as upstream and downstream of a pump or control valve or on each branch of a junction. An isolation valve may serve as a pressure zone boundary.

1.2.3.6 System Meters

The existing reclaimed water system includes system meters that represent meters that are not customer meters and are used for flow control and operational purposes.

1.3 Purpose and Use of the Program Environmental Impact Report

The California Environmental Quality Act (CEQA) requires that state and local governmental agencies consider the environmental consequences of projects over which they have discretionary authority before taking action on those projects. This Program Environmental Impact Report (PEIR) has been prepared to satisfy California Public Resources Code, Section 21061, and CEQA Guidelines, Section 15168.

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" (California Public Resources Code, Section 21067). The City has the principal responsibility for approval of the projects proposed in the 2018 RWMP. For this reason, the City is the CEQA lead agency for the project.

A PEIR is an environmental impact report (EIR) that may be prepared for a series of actions that can be characterized as one large project and are related (1) geographically; (2) as logical parts in the chain of contemplated actions; (3) in connection with issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program; or (4) as individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental impacts that can be mitigated in similar ways. The intent of this PEIR is to provide sufficient information on the potential environmental impacts of the project to allow the City to make an informed decision regarding approval of the project. Specific discretionary actions to be reviewed by the City are described in Section 2.6, Discretionary Actions, in Chapter 2, Project Description.

This PEIR has been prepared in accordance with current CEQA Statutes and Guidelines, CEQA implementation guidelines for the City, and the City's local guidelines for implementing CEQA (2019 version). This PEIR has the following uses and purposes:

- To comply with CEQA
- To provide public notice to interested or affected parties regarding the project
- To assess the environmental impacts resulting from construction and operation of the project at a program level
- To assess the potential environmental impacts from feasible alternatives to the project
- To provide environmental documentation to be used in applicable environmental permitting processes

An EIR is an informational document, the purpose of which is to inform members of the public and agency decision makers of the significant environmental effects of a proposed project, identify feasible ways to reduce the significant effects of the project, and describe a reasonable range of feasible alternatives to the project that would reduce one or more significant effects and still meet the project's objectives. In instances where significant impacts cannot be avoided or mitigated, the

project may be carried out or approved if the approving agency finds that economic, legal, social, technological, or other benefits outweigh the unavoidable significant environmental impacts.

1.4 Program Environmental Impact Report Process

1.4.1 Public and Agency Review

1.4.1.1 Notice of Preparation

As the CEQA lead agency, the City is responsible for determining the scope and content of this PEIR, a process referred to as "scoping." As part of the scoping process, the City considered the environmental resources present on site and in the surrounding area and identified the probable environmental effects of the project. On May 20, 2020, the City posted a Notice of Preparation (NOP) with the Riverside County Clerk's Office in accordance with Section 15082 of the CEQA Guidelines. The 30-day public review period for the NOP began on May 20, 2020, and ended on June 18, 2020. The NOP and notices of NOP availability were mailed to public agencies, organizations, and other interested individuals to solicit their comments on the scope and content of the environmental analysis. The City also held a public scoping meeting on June 2, 2020.

Several specific environmental issues were raised in the comments on the NOP. A summary of these comments and the PEIR chapters or sections in which they are addressed are provided in Table 1-2. Only comments that pertain to the environmental scope of this PEIR are summarized.

Table 1-2. Notice of Preparation Comment Letter Summary

Comment Letter No.	Commenter	Subject of Comment	Location in PEIR Where Comment Is Addressed
1	California Native American Heritage Commission	Recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic region of the water service area and describes AB 52 tribal consultation requirements.	Section 3.5, Cultural Resources; Section 3.18, Tribal Cultural Resources
2	South Coast Air Quality Management District	Recommends using the CEQA Air Quality Handbook and CalEEMod land use emissions software and calculating both regional and localized air quality impacts. Recommends that the PEIR should calculate both construction and operational emissions.	Section 3.3, Air Quality
3	Riverside County Flood Control and Water Conservation District	States that the project facilities should be designed and constructed in a manner to avoid conflicts with the district's Master Drainage Plan facilities. Work that involves district rights-of-way, easements, or facilities will require an encroachment permit from the district. The district would be a CEQA responsible agency.	Chapter 2, Project Description; Section 3.10, Hydrology and Water Quality; and Section 3.19, Utilities and Service Systems
4	Orange County Water District	Discusses discharge rates to Santa Ana River and impacts to riparian habitat and endangered species.	Section 3.4, Biological Resources; Section 3.10, Hydrology and Water Quality

Table 1-2. Notice of Preparation Comment Letter Summary

Comment Letter No.	Commenter	Subject of Comment	Location in PEIR Where Comment Is Addressed
5	Metropolitan Water District of Southern California	States that the Metropolitan Water District would be a CEQA responsible agency. The project description and appropriate impact analysis should include a brief statement of the proposed potable water conversion incentives with the district.	Chapter 2, Project Description; Section 3.10, Hydrology and Water Quality, and Section 3.19, Utilities and Service Systems
6	California Department of Fish and Wildlife	States that the PEIR should include an assessment of biological resources, including habitat types, a general biological inventory of species that have the potential to be on site, and a complete inventory of sensitive species located in the project footprint and off-site areas. Recommends protocol surveys for state and federally listed endangered species and a state threatened species. States that the PEIR should provide a thorough discussion of the direct, indirect, and cumulative impacts expected to adversely affect biological resources as a result of the project. The discussion should include project-related changes on drainage patterns and water quality on, upstream, and downstream of the project site; potential indirect project impacts on biological resources; and impacts to adjacent open space lands. Recommends that the PEIR describe and analyze a range of reasonable alternatives and identify mitigation measures that would avoid or minimize impacts.	Section 3.4, Biological Resources

Notes: AB = Assembly Bill; CalEEMod = California Emissions Estimator Model; CEQA = California Environmental Quality Act; PEIR = program environmental impact report

1.4.1.2 Program Environmental Impact Report

The Draft PEIR is being circulated for 45-day public review period beginning September 16, 2020, and ending November 2, 2020. Interested agencies and members of the public are invited to provide written comments on the Draft PEIR to the City at the address provided below.

The Draft PEIR is available to the public for review on the City's website at www.CoronaCA.gov/RWMP and at the following locations:

City of Corona, Public Works Department
Ulises Escalona, Associate Engineer
400 S. Vicentia Avenue, Suite 210
Corona, California 92882
P: (951) 279-3512

Corona Public Library
650 South Main Street
Corona, California 92882

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

Ulises Escalona, Associate Engineer
City of Corona, Public Works Department
400 S. Vicentia Avenue, Suite 210
Corona, California 92882
ulises.escalona@coronaca.gov

Upon completion of the 45-day public review period, the City will review all written comments received and prepare written responses for each. A Final PEIR will incorporate the received comments, responses to the comments, and any changes to the Draft PEIR that result from comments. The Final PEIR will be presented to the City Council for potential certification as the environmental document for the project. If the City Council decides to certify the Final PEIR, it will make the necessary findings required by CEQA and CEQA Guidelines regarding the extent and nature of the impacts presented in the Final PEIR. The Final PEIR must be certified by the City before making a decision to approve the project. Public input is encouraged at all public hearings and meetings before the Planning Commission and City Council concerning the project.

Public agencies that submit comments during the 45-day public review period on the Draft PEIR will receive written responses to their comments at least 10 days before final action on the project. Agencies, organizations, and individuals who comment on the Draft PEIR will be notified of the availability of the Final PEIR and the date of the public hearings.

1.4.2 CEQA Findings and Mitigation Monitoring and Reporting Program

When a public agency approves a project for which an EIR has been certified that has identified one or more significant environmental effects, CEQA requires that the lead agency make one or more written findings for each of those significant effects, accompanied by a brief explanation of the rationale for each finding. Because significant environmental effects have been identified in this PEIR, findings will be required for the project at the time of its approval.

CEQA requires that, when a public agency makes findings based on an EIR, the public agency must adopt a reporting or monitoring program for those measures that it has adopted or made conditions of project approval to mitigate or avoid significant effects on the environment. The reporting or monitoring program must be designed to ensure compliance during project implementation. A Mitigation Monitoring and Reporting Program for the project will be prepared and included with the Final PEIR.

1.5 Organization of the Program Environmental Impact Report

This PEIR is organized into three volumes. Volume I addresses the potential environmental impacts of the physical development of the project. Associated technical appendices are contained

in Volume II. When the PEIR is finalized, Volume III will be produced and contain the Draft PEIR comments, the responses to comments, a summary of Draft PEIR revisions or enhancements, and the Mitigation Monitoring and Reporting Program for the project.

The PEIR is organized as follows:

- **Executive Summary.** Summarizes the project, environmental impacts that would result from implementation of the project, recommended mitigation measures that would avoid or reduce impacts, and the level of significance of impacts before and after mitigation.
- **Chapter 1, Introduction.** Provides an introduction and overview describing the background of the project, the purpose and intended use of this PEIR, and the review and certification process.
- **Chapter 2, Project Description.** Provides a detailed description of the project, including the location, project objectives, project features, and construction methods. This chapter also includes a list of discretionary actions, decisions, and approvals that would be required for the project.
- **Chapter 3, Environmental Analysis.** Describes the existing physical conditions for each resource area; lists the applicable laws and regulations and thresholds of significance related to the specific resource; describes the impact assessment methods; identifies the direct, indirect, and cumulative impacts that would result from implementation of the project; and provides feasible mitigation measures that would eliminate or reduce the identified impacts.
- **Chapter 4, Other CEQA Considerations.** Provides discussions required by CEQA regarding unavoidable significant effects, growth-inducing impacts, and environmental effects found not to be significant.
- **Chapter 5, Alternatives to the Proposed Project.** Describes alternatives to the project that could avoid or substantially lessen significant effects and evaluates their environmental effects compared to the project.
- **Chapter 6, Preparers and Persons Contacted.** Identifies those who prepared this PEIR and others who were contacted during its preparation.
- **Chapter 7, References.** Provides a list of references used in the analysis of each resource area.

1.6 Documents Incorporated By Reference

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

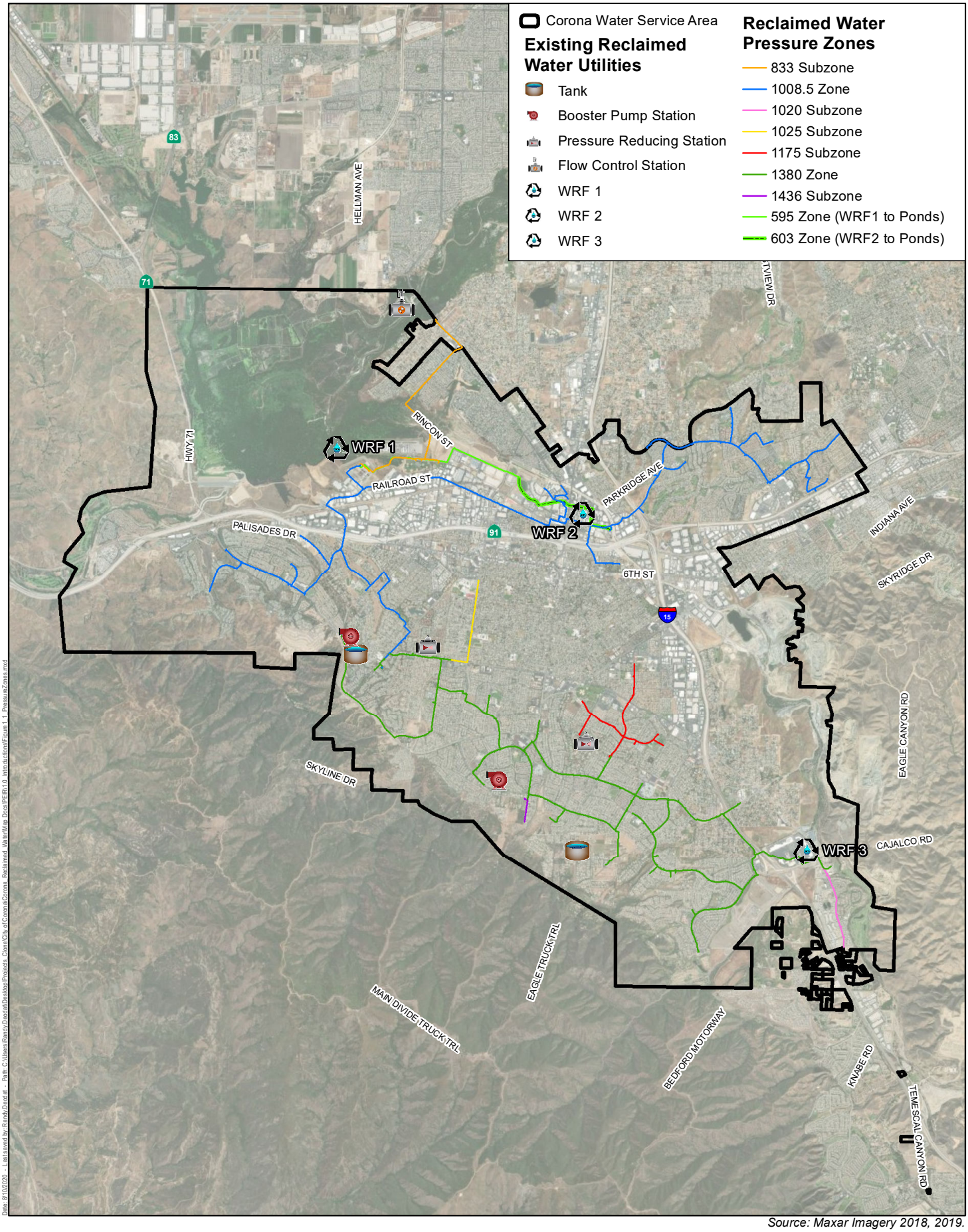
- City of Corona Reclaimed Water Master Plan (2018)
- City of Corona 2020–2040 General Plan and EIR (2020)
- County of Riverside General Plan and EIR (2015)

- South Coast Air Quality Management District Air Quality Management Plan (2016)
- Western Riverside Multiple Species Habitat Conservation Plan (2003)

In each instance where a document is incorporated by reference, this PEIR briefly summarizes the incorporated document or the incorporated data if the document cannot be summarized. In addition, this PEIR explains the relationship between the incorporated part of the referenced document and this PEIR.

This PEIR also relies on previously adopted regional and statewide plans and programs, agency standards, and background studies in its analyses, such as the South Coast Air Quality Management District Air Quality Management Plan. Documents incorporated by reference are available for review at the City of Corona, Planning Department, 400 S. Vincentia Avenue, Corona, California 92882.

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Source: Maxar Imagery 2018, 2019.

Harris & Associates

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Miles

Figure 1-1

Existing Reclaimed Water System

City of Corona 2018 Reclaimed Water Master Plan

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Chapter 2 Project Description

The 2018 Reclaimed Water Master Plan (project or 2018 RWMP) is an update to the City of Corona's (City's) adopted Reclaimed Water Master Plan (2001), which provides guidance to create infrastructure to efficiently use treated effluent from its existing and future wastewater reclamation facilities (WRFs) supplemented by non-potable groundwater from the Bedford Basin to reduce dependence on imported water and potable groundwater. The project identifies the extent and types of reclaimed water development needed to achieve the City's physical, economic, and environmental goals.

2.1 Project Location

Regional Location

The City is in the northwestern portion of the County of Riverside (County), near the convergence of the Counties of Los Angeles, Orange, and Riverside, 45 miles southeast of the City of Los Angeles, as shown on Figure 2-1, Regional Location, and Figure 2-2, Project Overview. The City is in the Temescal Valley, which is framed by mountains and the Prado Flood Control Basin. The City is bordered by the City of Norco to the north, the City of Riverside to the east, unincorporated Riverside County to the west and south, the Cleveland National Forest to the south/southwest, and the Prado Flood Control Basin to the northeast.

The City is defined in the County by its transportation infrastructure. Two major freeways and one railroad transect the City. Riverside Freeway (State Route 91) runs east–west directly connecting the economic center of the County of Orange to the Inland Empire, while Interstate 15 runs north–south. In addition, the Burlington Northern Santa Fe Railway transects the center of the City, running parallel to State Route 91.

Water Service Area

The City's water service area encompasses approximately 39 square miles and delineates the extent of the City's potable water, reclaimed water and wastewater services. The water service area boundary differs slightly from the City's jurisdictional boundary because it also includes the unincorporated communities of El Cerrito and Coronita and parts of Temescal Canyon, as shown on Figure 2-3, Water Service Area. The water service area is a jurisdictional boundary bordered by the neighboring water service areas for the Cities of Norco and Eastvale to the north, the City of Riverside to the northeast, the Home Gardens County Water District to the east, and the Temescal Valley Water District to the south. The southeastern portion of the water service area is generally bounded by unincorporated County lands. The southwestern portion of the water service area is bounded by the Cleveland National Forest and other County lands.

2.2 Project Purpose

The primary purpose of the 2018 RWMP is to assist the City with meeting its goals for reclaimed water use through implementation of appropriate projects, programs, and additional studies.

2.3 Project Objectives

The project objectives are as follows:

1. Expand and improve the City's recycled water program in accordance with Ordinance 2854 (Recycled Water Rules and Regulations)
2. Prioritize and implement system improvements pursuant to the 2018 Reclaimed Water Master Plan to maximize reclaimed water supply availability and reduce the use of potable water
3. Improve water supply system performance by facilitating supply management and maximizing water resources
4. Efficiently implement priority improvement projects to manage and distribute new sources of water supply as they become available

2.4 Projects Identified in the 2018 RWMP

This section describes the proposed infrastructure and improvements to the reclaimed water system identified in the 2018 RWMP. Future projects would be categorized as sources of supply, large distribution pipelines, medium distribution pipelines, small distribution pipelines, conversion of adjacent customers, data management, and additional studies. Table 2-1 provides a summary of the projects identified in the 2018 RWMP. Figures 2-4a through 2-4d show the locations of the project components in the water service area.

Table 2-1. Summary of Projects

Number	Project Component	Location	Description
Sources of Supply Projects			
1	WRCRWA Booster Pump Station	WRCRWA	The booster pumping stations would pump WRCRWA supply to the 833 Subzone.
2	WRCRWA Transmission Pipeline	Between WRCRWA and River FCS-833 Subzone	The transmission pipeline would connect the WRCRWA booster pumping station to the 833 Subzone.
3	WRCRWA Flow Control Improvements	Between Butterfield and WRF1 Tank	These control stations would direct WRCRWA supply to the Lincoln-Cota Ponds and the WRF1 Tank.

Table 2-1. Summary of Projects

Number	Project Component	Location	Description
4	Rimpau California Pipeline	Between Central Park and Chase Park	This transmission pipeline would provide the additional capacity needed to move WRCRWA supply to demands south of the water service area between City Park and Chase Park.
5	Chase Booster Pump Station	Chase Park	The booster pump station at Chase Park would an operational component of the Rimpau California Pipeline.
6	Chase Tank	Chase Park	The storage facility at Chase Park would be an operational component of the Rimpau California Pipeline.
Large Distribution Pipelines			
7	Buena Vista Tenth Pipeline	Railroad Street and Rimpau Avenue via Buena Vista Avenue and Tenth Street	This pipeline would reinforce the primary loop between WRF1 at the 1380 Zone following construction of the Rimpau California Pipeline.
8	Ontario Slipline	Compton Avenue and Lincoln Avenue	This sliplined pipeline would form a secondary loop along the length of the 1175 Subzone.
9	River Pipeline	River Road from Corydon Avenue through Main Street	This pipeline would expand the 833 Subzone north of Temescal Creek and west of Interstate 15.
10	Sampson Pipeline	Central Park and McKinley Street	This pipeline would form a secondary loop in the 1008.5 Zone to improve performance and eliminate the need for additional local storage.
Medium Distribution Pipelines			
11	Old Temescal Pipeline	Fullerton Avenue and Interstate 15	This pipeline would convert 15.1 gpm of potable water demand for irrigation to reclaimed water demand.
12	Lincoln Foothill Pipeline	Lincoln Avenue between Highgrove Street and Foothill Parkway	This pipeline would convert 12.5 gpm of potable water demand for irrigation to reclaimed water demand at one church and six existing LMD meters.
13	Avenida Del Vista Pipeline	Via Del Rio and MFR demands north of Via Santiago	This pipeline would convert 19.8 gpm of potable water demand for irrigation to reclaimed water demand at three MFR complexes.

Table 2-1. Summary of Projects

Number	Project Component	Location	Description
14	Border Pipeline	Brentwood Drive and MFR demands north of Tenth Street	This pipeline would convert 36.4 gpm of potable water demand for irrigation to reclaimed water demand at numerous MFR and CII complexes.
15	Promenade Pipeline	McKinley Avenue and Cresta Verde Park	This pipeline would convert 26.9 gpm of potable water demand for irrigation to reclaimed water demand at 2 MFR complexes and 15 existing landscaping irrigation meters.
16	Research Pipeline	CII demands west of Auto Center Drive	This pipeline would convert 9 gpm of potable water demand for irrigation to reclaimed water demand.
17	Smith Pipeline	Railroad Street and Pomona Road	This pipeline would convert 13.6 gpm of potable water demand for irrigation and car washing to reclaimed water demand.
18	Via Pacifica Pipeline	MFR and LMD demand north of Ontario Avenue	This pipeline would convert 21.3 gpm of potable water demand for irrigation to reclaimed water demand at two LMD meters and one MFR complex.
19	Tehachapi Pipeline	McKinley Avenue and Tehachapi Park	This pipeline would convert 6.2 gpm of potable water demand for irrigation to reclaimed water demand.
Small Distribution Pipelines			
20	Jenks Pipeline	North and south of Railroad Street	The pipeline would convert 5.8 gpm of potable water demand for irrigation to reclaimed water demand.
21	Airport Circle Pipeline	South of Railroad Street	The pipeline would convert 4.1 gpm of potable water demand for irrigation to reclaimed water demand.
22	Helicopter Pipeline	South of Railroad Street	This pipeline would convert 3.9 gpm of potable water demand for irrigation to reclaimed water demand.
23	Glider Pipeline	South of Railroad Street	The pipeline would convert 1.3 gpm of potable water demand for irrigation to reclaimed water demand.

Table 2-1. Summary of Projects

Number	Project Component	Location	Description
24	Citation Pipeline	South of Railroad Street	This pipeline would convert 1.2 gpm of potable water demand for irrigation to reclaimed water demand.
25	Klug Pipeline	North and south of Railroad Street	This pipeline would convert 3.9 gpm of potable water demand for irrigation to reclaimed water demand.
26	Monica Pipeline	North of Railroad Street	The pipeline would convert 3.2 gpm of potable water demand for irrigation to reclaimed water demand.
27	Chase Hudson Pipeline	LMD demands at Chase Drive and Hudson Avenue	This pipeline would convert 4.7 gpm at two LMD meters from potable water demand for irrigation to reclaimed water demand.
28	Cessna Pipeline	North of Railroad Street	This pipeline would convert 3 gpm of potable water demand for irrigation to reclaimed water demand.
29	Main Citrus Pipeline	Main Street at Citrus Avenue and four CII customers at Main Street and Magnolia Avenue	This pipeline would convert 21.4 gpm of potable water demand for irrigation to reclaimed water demand for CII customers.

Source: City of Corona 2018.

Notes: CII = commercial, industrial, and institutional; gpm = gallons per minute; LMD = landscape maintenance district; MFR = multi-family residential; WRCRWA = Western Riverside County Regional Wastewater Authority; WRF = water reclamation facility

2.4.1 Sources of Supply

The project includes the following six sources of supply projects that involve future supply from the Western Riverside County Regional Wastewater Authority (WRCRWA). The projects are necessary to accommodate the shift in supply from the existing WRF3 to WRCRWA and would assure adequate supply and transmission capacity related to reclaimed water from WRCRWA (see Figure 2-4a, Source of Supply Project). The projects focus on transmission and system performance.

2.4.1.1 WRCRWA Booster Pump Station

This source of supply project would replace the existing booster pump station that completes the transmission system loop between the existing WRCRWA Plant at 14634 River Road in the City of Eastvale and existing WRF1 Tank and would provide reclaimed water to the 833 Subzone. Final design would meet the requirements of the agreement between the WRCRWA and the City, which includes delivery of 2.4 million gallons per day of reclaimed water.

2.4.1.2 WRCRWA Transmission Pipeline

This source of supply project would construct a 5,133-foot-long, 20-inch-wide transmission pipeline connecting WRCRWA Plant Booster Pump Station 833 Subzone to the River Flow Control Station (FCS)-833 Subzone. The pipeline would be in the River Road easement from the WRCRWA's facilities at 14634 River Road in the City of Eastvale to its intersection with Bluff Street in the City of Norco. This pipeline would provide the primary transmission from the WRCRWA plant to the City. This project is currently under design and was evaluated in the 2016 Initial Study and Mitigated Negative Declaration for the Proposition 1 – Reclaimed Water Distribution Facilities.

2.4.1.3 WRCRWA Flow Control Improvements

Three control valve stations are required to direct flow from the WRCRWA to the desired destinations in the existing system. This source of supply project would control flows from the WRCRWA plant to deliver reclaimed water to either the Lincoln-Cota Ponds or the existing WRF1 Tank. A pressure-reducing valve (PRV) would be installed to reduce pressure to avoid cavitation in the downstream flow control valves. A flow control valve and flow meters would be installed to manage the flow of reclaimed water to the ponds and to the WRF1 Tank, which would include installing a pressure-reducing and flow control station using a Bailey PRV. A Cla-Val flow control valve and flow meters would be installed at Butterfield Park to control flow from the WRCRWA plant to the Lincoln-Cota Ponds and the WRF1 Tank. In addition, a bypass assembly near the existing WRF1 Booster Pump Station Ponds would be constructed to deliver reclaimed water to the existing WRF1 Tank.

2.4.1.4 Rimpau California Pipeline

This source of supply project would provide the additional capacity needed to move the WRCRWA supply to an area of demand in southern portion of the water service area between City Park and Chase Park. It would convert 75.5 gpm (121.7 acre-feet per year [AFY]) of potable water demand for irrigation to reclaimed water demand.

The pipeline would connect to the terminus of the existing 12-inch transmission main in Quarry Street at City Park and install 19,700 feet of new 20-inch pipe in Rimpau Avenue (between Central Park and California Avenue) and California Avenue (between Rimpau Avenue and Chase Park). This project would include installation of 2,400 feet of 12-inch pipe in Rimpau Avenue and Olympic Drive, stub-outs for future pipelines at Circle City Drive and Sixth Street, 25 fire hydrants, and 56 new meters to serve commercial, industrial, and institutional (CII) and multi-family residential (MFR) irrigation demand. It would also convert one existing irrigation meter at Chase Park to a reclaimed water meter.

2.4.1.5 Chase Booster Pump Station

This source of supply project would complete the primary loop between the existing WRF1 and the 1380 Zone and would provide redundancy in conjunction with the existing Border Tank facility for serving large demands in areas south of the City. It would construct a booster pump station adjacent to the future Chase Tank, install 1,600 feet of new 12-inch pipe in Chase Park and California Avenue, and install two fire hydrants.

2.4.1.6 Chase Tank

This source of supply project would include the construction of a 2-million-gallon storage tank at Chase Park in the southeastern portion of the site. The storage tank would provide equalization in the 1008.5 Zone, provide a primary loop between the 1008.5 Zone and the 1380 Zone, and provide operational storage, equalization, and redundancy in the 1008.5 Zone in conjunction with the existing Border Tank facility.

2.4.2 Large Distribution Pipelines

Approximately 27 miles of distribution pipelines are proposed to supply irrigation demands at schools, parks, City landscaping, and the industrial, commercial, institutional (CII) and MFR sectors. The project proposes four large distribution pipelines to open previously unserved neighborhoods, commercial zones, and industrial zones to reclaimed water service as described below (see Figure 2-4b, Large Distribution Pipelines).

2.4.2.1 Buena Vista Tenth Pipeline

This large distribution pipeline would reinforce the primary loop between WRF1 and the 1380 Zone following the construction of the Rimpau California Pipeline. It would convert 126.9 gpm (204.6 AFY) of potable water demand for irrigation to reclaimed water demand, including the connection of an existing 18-inch transmission main on Railroad Street to Buena Vista Avenue, and to a future 20-inch transmission main in Rimpau Avenue at Circle City Drive. The Buena Vista Tenth Pipeline would also include the installation of 23,200 feet of new 12-inch pipeline, 45 fire hydrants, and 63 new meters and convert 20 existing irrigation meters.

2.4.2.2 Ontario Slipline

This large distribution pipeline would serve as a CII/MFR/park/school demand converter and would form a secondary loop along the length of the 1175 Subzone. It would use trenchless technology to minimize traffic and substructure congestion. The Ontario Slipline would convert 130.8 gpm (211 AFY) of potable water demand for irrigation to reclaimed water demand and facilitate the possibility of converting other CII demands (e.g., cooling water replenishment, industrial process water, industrial cleaning, dual plumbing). Other components include the connection to the terminus of the existing 8-inch main in Fullerton Avenue, connection to an

existing 8-inch line in Lincoln Avenue, and adjustment of Ontario PRV-1025 Subzone to serve the 1175 Zone. Additionally, the Ontario Slipline would include sliplining 16,200 feet of existing Elsinore Valley Municipal Water District agricultural pipeline, installation of 10,200 feet of 12-inch pipeline, installation of 50 fire hydrants, installation of 52 new meters to serve CII/MFR irrigation demand, and conversion of 24 existing irrigation meters.

2.4.2.3 River Pipeline

This large distribution pipeline would expand the 833 Subzone north of Temescal Creek and west of Interstate 15. It would convert 126.5 gpm (204 AFY) of potable water demand for irrigation to reclaimed water demand and would investigate the possibility of converting other CII demands. The River Pipeline would connect to an existing 20-inch transmission main at the intersection of Corydon Avenue and River Road; install 13,900 feet of new 12-inch pipe in River Road, Cota Street, and Parkridge Avenue; install 28 new fire hydrants and 20 new meters; and convert 21 existing irrigation meters.

2.4.2.4 Sampson Pipeline

This large distribution pipeline would include the conversion of transmission and distribution pipelines in the 1008.5 Zone and would form a secondary loop in the 1008.5 Zone to improve performance and eliminate the need for additional local storage. The Sampson Pipeline proposes to convert 137.8 gpm (222.2 AFY) of potable water demand for irrigation and car washing to reclaimed water demand, investigate the possibility of converting other CII demands, and examine the possibility of adding American Asphalt as a customer for dust control, aggregate cleaning, and equipment cleaning. This project component would include the connection to the existing 12-inch distribution main at the intersection of McKinley Street and Promenade Avenue and the future 20-inch transmission main in Rimpau Avenue at Sixth Street near Central Park, installation of 37,600 feet of new 12-inch pipeline, installation of 75 fire hydrants, installation of 141 new meters to serve CII irrigation demand, and conversion of 10 existing irrigation meters.

2.4.3 Medium Distribution Pipelines

The project proposes the following nine new medium distribution pipelines to target large demand opportunities with a single feed pipe (see Figure 2-4c, Medium Distribution Pipelines).

2.4.3.1 Old Temescal Pipeline

This medium distribution pipeline would convert 15.1 gpm (24.2 AFY) of potable water demand for irrigation to reclaimed water demand and investigate the possibility of converting other CII demands. The Old Temescal Pipeline would connect to the existing main in Fullerton Avenue, install 4,500 feet of new 8-inch pipe in Old Temescal Road, install 10 fire hydrants and 15 new meters, and convert 5 existing meters to serve CII irrigation demand. This project component was

evaluated in the 2016 Initial Study and Mitigated Negative Declaration for the Proposition 1 – Reclaimed Water Distribution Facilities.

2.4.3.2 Lincoln Foothill Pipeline

This medium distribution pipeline would convert 12.5 gpm (20.2 AFY) of potable water demand for irrigation to reclaimed water demand at one church and six existing landscape maintenance district (LMD) meters in the 1380 Zone. The Lincoln Foothill Pipeline would connect to the existing 20-inch transmission main at Highgrove Street and Lincoln Avenue, install 2,700 feet of new 12-inch pipe in Lincoln Avenue between Highgrove Street and Foothill Parkway, install three fire hydrants and one new meter to serve institutional irrigation demand, and reconnect six existing LMD meters.

2.4.3.3 Avenida Del Vista Pipeline

This medium distribution pipeline would convert 19.8 gpm (31.9 AFY) of potable water demand for irrigation to reclaimed water demand at three MFR complexes. It would provide a connection to an existing 20-inch transmission main at the intersection of Via Del Rio and Kirkwood Drive, install 3,700 feet of new 12-inch pipe in Via Del Rio and Avenida Del Vista, install seven fire hydrants and one new meter, and connect to three existing irrigation meters to serve the MFR irrigation demand.

2.4.3.4 Border Pipeline

This medium distribution pipeline would convert 36.4 gpm (58.7 AFY) of potable water demand for irrigation to reclaimed water demand at numerous MFR and CII complexes and would investigate the possibility of recreational impoundment replenishment and converting other CII demands. The Border Pipeline would connect to an existing 20-inch transmission main at the intersection of Border Avenue and Brentwood Drive; install 5,400 feet of new 12-inch pipe in Border Avenue, Sherman Avenue, and Eighth Street; and install 10 fire hydrants and 40 new meters to serve MFR and CII irrigation demand.

2.4.3.5 Promenade Pipeline

This medium distribution pipeline would convert 26.9 gpm (43.4 AFY) of potable water demand for irrigation to reclaimed water demand at 2 MFR complexes and 15 existing landscaping irrigation meters and investigate the possibility of additional irrigation conversion for greenways and portions of the Cresta Verde Golf Course. The Promenade Pipeline would connect to an existing 16-inch transmission main in McKinley Street at Promenade Avenue and optionally install an 8-inch PRV at the connection point. It would also install 7,600 feet of new 12-inch pipe in Promenade Avenue, 15 fire hydrants, and 2 new meters to serve MFR irrigation demand and connect 15 existing irrigation meters. Portions of this pipeline from McKinney Street to Cresta Verde Golf Course and Driving Range were included in the 2016 Initial Study and Mitigated Negative Declaration for the Proposition 1 – Reclaimed Water Distribution Facilities.

2.4.3.6 Research Pipeline

This medium distribution pipeline would assist in CII demand conversion by converting 9 gpm (14.6 AFY) of potable water demand for irrigation to reclaimed water demand and would investigate the possibility of converting other CII demands. It would provide a connection to an existing 24-inch transmission main in Auto Center Drive at Research Drive and install an 8-inch PRV at the connection, 2,600 feet of a new 12-inch pipeline in Research Drive and Wardlow Road, five fire hydrants, and seven new meters to serve CII irrigation demand.

2.4.3.7 Smith Pipeline

This medium distribution pipeline would convert 13.6 gpm (22 AFY) of potable water demand for irrigation and car washing to reclaimed water demand and investigate the possibility of converting other CII demands. The Smith Pipeline would connect to an existing 18-inch transmission main in Railroad Street at Smith Avenue and install an 8-inch PRV at connection, 2,800 feet of new 12-inch pipe in Smith Avenue between Railroad Street and Pomona Road, 5 fire hydrants, and 20 new meters to serve CII irrigation demand and 1 new meter to serve a car wash.

2.4.3.8 Via Pacifica Pipeline

This medium distribution pipeline would convert 21.3 gpm (34.4 AFY) of potable water demand for irrigation to reclaimed water demand at two LMD meters and one MFR complex in the 1380 Zone. The Via Pacifica Pipeline would connect to an existing 20-inch transmission main in Via Pacifica at Ontario Avenue and install an 8-inch PRV at the connection, 1,200 feet of new 12-inch pipeline in Via Pacifica between Ontario Avenue and Mahogany Street, two fire hydrants, and one new meter to serve MFR irrigation demand and connect to two existing LMD meters.

2.4.3.9 Tehachapi Pipeline

This medium distribution pipeline would convert 6.2 gpm (10 AFY) of potable water demand from irrigation to reclaimed water demand. The proposed Tehachapi Pipeline would connect to an existing 12-inch transmission main in McKinley Street at Mount Humphries Street and install 1,400 feet of new 12-inch pipe in Elizabeth Lane, Jenks Drive, and Jenks Circle and three fire hydrants and connect to one existing meter at Tehachapi Park.

2.4.4 Small Distribution Pipelines

The project proposes 10 small distribution pipelines to target demand opportunities near existing pipelines as described below (see Figure 2-4d, Small Distribution Pipelines).

2.4.4.1 Jenks Pipeline

This small distribution pipeline would convert 5.8 gpm (9.2 AFY) of potable water demand for irrigation to reclaimed water demand and investigate the possibility of converting other CII

demands. The Jenks Pipeline would connect to an existing 18-inch transmission main in Railroad Street at Elizabeth Lane and install 1,700 feet of new 12-inch pipe in Elizabeth Lane, Jenks Drive, and Jenks Circle; 3 fire hydrants; and 22 new meters to serve CII irrigation demand. This pipeline would also include the optional installation of an 8-inch PRV at the connection point.

2.4.4.2 Airport Circle Pipeline

This CII demand small distribution pipeline would include the conversion of 4.1 gpm (6.5 AFY) of potable water demand for irrigation to reclaimed water demand and would investigate the possibility of converting other CII demands. The Airport Circle Pipeline would connect to an existing 18-inch transmission main in Railroad Street at Airport Circle and install 400 feet of new 12-inch pipe in Airport Circle, one fire hydrant, and two new meters to serve CII irrigation demand.

2.4.4.3 Helicopter Pipeline

This small distribution pipeline in the 1008.5 Zone would convert 3.9 gpm (6.3 AFY) of potable water demand for irrigation to reclaimed water demand and investigate the possibility of converting other CII demands. The Helicopter Pipeline would connect to an existing 18-inch transmission main in Railroad Street at Helicopter Street and install 500 feet of new 12-inch pipe in Helicopter Circle, one fire hydrant, and four new meters to serve CII irrigation demand.

2.4.4.4 Glider Pipeline

This small distribution pipeline would convert 1.3 gpm (2.1 AFY) of potable water demand for irrigation to reclaimed water demand in the 1008.5 Zone and would investigate the possibility of converting other CII demands. The Glider Pipeline would connect to an existing 18-inch transmission main in Railroad Street at Elizabeth Lane and install 500 feet of new 12-inch pipe in Glider Circle, one new fire hydrant, and five new meters to serve the CII irrigation demand.

2.4.4.5 Citation Pipeline

This small distribution pipeline would convert 1.2 gpm (2 AFY) of potable water demand for irrigation to reclaimed water demand in the 1008.5 Zone and would investigate the possibility of converting other CII demands. The Citation Pipeline would connect to an existing 18-inch transmission main in Railroad Street at Citation Circle and install 500 feet of new 12-inch pipeline in Citation Circle, one fire hydrant, and five new meters to serve CII irrigation demand.

2.4.4.6 Klug Pipeline

This small distribution pipeline would convert 3.9 gpm (6.2 AFY) of potable water demand for irrigation to reclaimed water demand in the 1008.5 Zone. The Klug Pipeline would connect to an existing 18-inch transmission main in Railroad Street at Klug Circle and install 1,300 feet of new 12-inch pipe in Klug Circle, three new fire hydrants, and seven new meters to serve CII irrigation demand.

2.4.4.7 Monica Pipeline

This small distribution pipeline would convert 3.2 gpm (5.2 AFY) of potable water demand for irrigation to reclaimed water demand in the 1088.5 Zone. The Monica Pipeline would connect to an existing 18-inch transmission main in Railroad Street at Monica Circle and install 500 new feet of 12-inch pipe in Monica Circle, one fire hydrant, and one new meter and connect two existing meters to serve CII irrigation demand.

2.4.4.8 Chase Hudson Pipeline

This small distribution pipeline is an LMD demand conversion project in the 1380 Zone that would convert 4.7 gpm (7.6 AFY) at two LMD meters from potable water demand for irrigation to reclaimed water demand. It would connect to an existing 12-inch distribution main in Chase Drive at Fullerton Avenue on the upstream side (1380 Zone) of the Fullerton PRV-1175 Subzone and install 1,000 feet of new 12-inch pipe in Chase Drive and Hudson Avenue and two fire hydrants and reconnect two existing meters.

2.4.4.9 Cessna Pipeline

This small distribution pipeline would convert 3 gpm (4.9 AFY) of potable water demand for irrigation to reclaimed water demand in the 1088.5 Zone. It would connect to an existing 18-inch transmission main in Railroad Street at Cessna Circle and install 300 feet of 12-inch pipe in Cessna Circle, one new fire hydrant, and two new meters to serve CII irrigation demand.

2.4.4.10 Main Citrus Pipeline

This small distribution pipeline would convert 21.4 gpm (34.5 AFY) of potable water demand for irrigation to reclaimed water demand for CII customers in the 1380 Zone. It would connect to an existing 12-inch distribution main in Main Street at Citrus Way and install 900 feet of new 12-inch pipeline in the Main Street promenade, two new fire hydrants, and four meters to serve CII irrigation demand.

2.4.5 Conversion of Adjacent Customers

Customers adjacent to existing pipelines should be converted to reclaimed water when possible. The adjacent demands for the City include commercial, institutional, MFR, and single-family residential.

The conversion would convert 139.9 gpm (225.7 AFY) of potable water demand for irrigation to reclaimed water demand by adding small irrigated areas one at a time throughout the system and would investigate the possibility of converting other CII demands (e.g., cooling water replenishment, industrial process water, industrial cleaning, dual plumbing). It would require the addition of new laterals and meters as necessary to capture irrigation demand adjacent to existing distribution pipelines.

2.4.6 Data Management Projects

The City has an extensive automation system for its water facilities called Supervisory Control and Data Acquisition (SCADA). SCADA is used primarily for operational control and management of the City's water, wastewater, and reclaimed water assets. The following enhancements would expand the use of SCADA to resource management and demand management.

2.4.6.1 SCADA Upgrade for Supply Management

This data management program includes SCADA upgrades for supply management, SCADA interfaces and monitors protocols for supply allocation, instantaneous demand, and monthly reconciliation of supply and billing, which would help facilitate supply management and resource maximization. The upgrade would install eight SCADA flow monitors to fill gaps in comprehensive supply monitoring and connect to existing remote terminal units at WRF1, WRF2, and WRF3; program SCADA human-machine interfaces for (1) monitoring instantaneous reclaimed water system demand, (2) monitoring reclaimed water supply allocation, and (3) reconciling supply and billing to compute non-revenue reclaimed water; and produce regular reports that summarize and monetize supply allocation.

2.4.6.2 Irrigation Monitoring

The bulk of irrigation demand is controlled by the City and the Corona-Norco Unified School District. Supply is controlled by the City. There is an opportunity to improve system performance during high-demand periods by adjusting irrigation demand patterns through coordination between operations, engineering, and landscape maintenance. The irrigation monitoring system would facilitate the coordination effort and enhance system performance. It would include the installation of SCADA flow registers at large irrigation meters controlled by the City and the school district; develop methods for adjusting irrigation demand patterns; facilitate data collection, reduction, and transfer among operations, engineering, and landscaping maintenance; and implement irrigation demand pattern adjustments as needed during high-demand periods.

2.4.7 Additional Studies

The 2018 RWMP recommends two studies related to future uses of reclaimed water that would recognize opportunities for the City's expansion of the reclaimed water system. The studies would focus on the entire water service area and would assist the City in refining user demands for irrigation and groundwater recharge. The following additional studies are recommended related to future uses of reclaimed water. Preparation of the studies is statutorily exempt from the California Environmental Quality Act (CEQA) pursuant to CEQA Guidelines, Section 15262, and, therefore, is not evaluated in this Program Environmental Impact Report (PEIR). Implementation of any findings or recommendations developed as a result of the additional studies is not covered under this PEIR and would require independent CEQA review.

2.4.7.1 County Irrigation Ordinance Study

The City adopted County Ordinance 859.3 regarding water-efficient landscape requirements for new construction and retrofit and the establishment of water budgets. The study would review the ramifications and monitoring requirements for implementation of the ordinance and is anticipated to produce changes in irrigation behavior, demand, and parcel-level compliance calculations.

In addition, the study would review the implications of the ordinance in terms of data collection, methods to identify excessive irrigation use, options for developers, resources, and grants available to implement concepts, quantification of impacts on potable, and reclaimed water demand and revenue. To gather sufficient data, the City will prepare and refine a sample geographical information system (GIS) database to determine impacts and issues surrounding compliance, recommend application of the sample GIS database to the entire water service area, estimate cost of implementation, and prepare recommendations for updating the City's GIS database.

2.4.7.2 Injection Well Study

The Injection Well Study would evaluate the viability of adding injection wells for recharge of the Temescal Basin. These wells would be an alternative to diverting reclaimed water to the ponds. Anticipated benefits of using injection wells include longer detention time for recharged reclaimed water and a higher recovery rate for recharged reclaimed water. The Injection Well Study anticipates coordinating with Groundwater Management Planning efforts; identifying the regions of the aquifer conducive to injection; identifying possible well locations; estimating benefits in terms of detention time, recovery rate, and redundancy; estimating the cost of implementation; preparing the cost-benefit analysis; and preparing recommendations.

2.4.7.3 Prioritization and Cost Study for the Reclaimed Water Capital Improvement Program

The ultimate goal of a Capital Improvement Program is to provide the City with a long-range planning tool, orchestrate construction of reclaimed water infrastructure improvements in an orderly manner, and keep pace with the City's growth. To accomplish this goal, it is necessary to determine the estimated cost of the needed improvements and to prioritize the projects in a manner that will guarantee that reliable service is maintained in a fiscally responsible manner. Funding mechanisms to finance the improvements can then be identified to implement the program.

The viability of a reclaimed water project is based on the City's reclaimed water policy that includes (1) technical feasibility, (2) financial feasibility, and (3) economic feasibility. In addition, there are intangibles that may make a specific project more or less attractive. By using the Capital Improvement Program, the City is able to prioritize and implement the reclaimed water projects in a manner that is most beneficial for the City and its goals.

2.4.8 Construction Methods

Following certification of the PEIR, the City would determine the implementation schedule for the construction of the improvements contemplated under the project. Once selected for construction, the City would develop project-specific plans and specifications for each project, perform a project-level CEQA review, and file the appropriate documentation for the necessary permits and approvals in advance of awarding a construction contract. For the purposes of this PEIR, the City has applied a standard construction zone of impact for linear construction, in addition to approximating the area of direct impact for staging areas or other temporary use areas. Typical construction methods for project components are described below.

Pipeline construction would require piping, trenching, backfilling, asphalt restoration, and striping. Trench dimensions for pipeline projects would be approximately 4 feet wide and 5 feet deep. Material removed would be replaced with import (sand bedding, aggregate base backfill, and asphalt concrete), and the spoils would be transported to an appropriate disposal facility.

Pump station construction would require piping, trenching, backfilling, foundation and grading, building construction, SCADA controls, and site restoration as needed.

Storage tanks would require piping, trenching, backfilling, foundation and grading, tank construction, SCADA controls, and site restoration as needed.

Table 2-2 provides an estimated time frame for construction for each project included in the 2018 RWMP.

Table 2-2. Project Construction Duration

Number	Project Component	Duration in Years
	Sources of Supply	
1	WRCRWA Booster Pump Station (in progress)	2
2	WRCRWA Transmission Pipeline (In progress)	2
3	WRCRWA Flow Control Improvements	2
4	Rimpau California Pipeline	4
5	Chase Booster Pump Station	3
6	Chase Tank	3
	Large Distribution Pipelines	
7	Buena Vista Tenth Pipeline	4
8	Ontario Slipline	4
9	River Pipeline	3
10	Sampson Pipeline	4
	Medium Distribution Pipelines	
11	Old Temescal Pipeline (in progress)	2
12	Lincoln Foothill Pipeline	2
13	Avenida Del Vista Pipeline	2

Table 2-2. Project Construction Duration

Number	Project Component	Duration in Years
14	Border Pipeline	2
15	Promenade Pipeline	3
16	Research Pipeline	2
17	Smith Pipeline	2
18	Via Pacifica Pipeline	2
19	Tehachapi Pipeline	2
Small Distribution Pipelines		
20	Jenks Pipeline	2
21	Airport Circle Pipeline	1
22	Helicopter Pipeline	1
23	Glider Pipeline	1
24	Citation Pipeline	1
25	Klug Pipeline	2
26	Monica Pipeline	1
27	Chase Hudson Pipeline	2
28	Cessna Pipeline	1
29	Main Citrus Pipeline	

Source: City of Corona 2018.

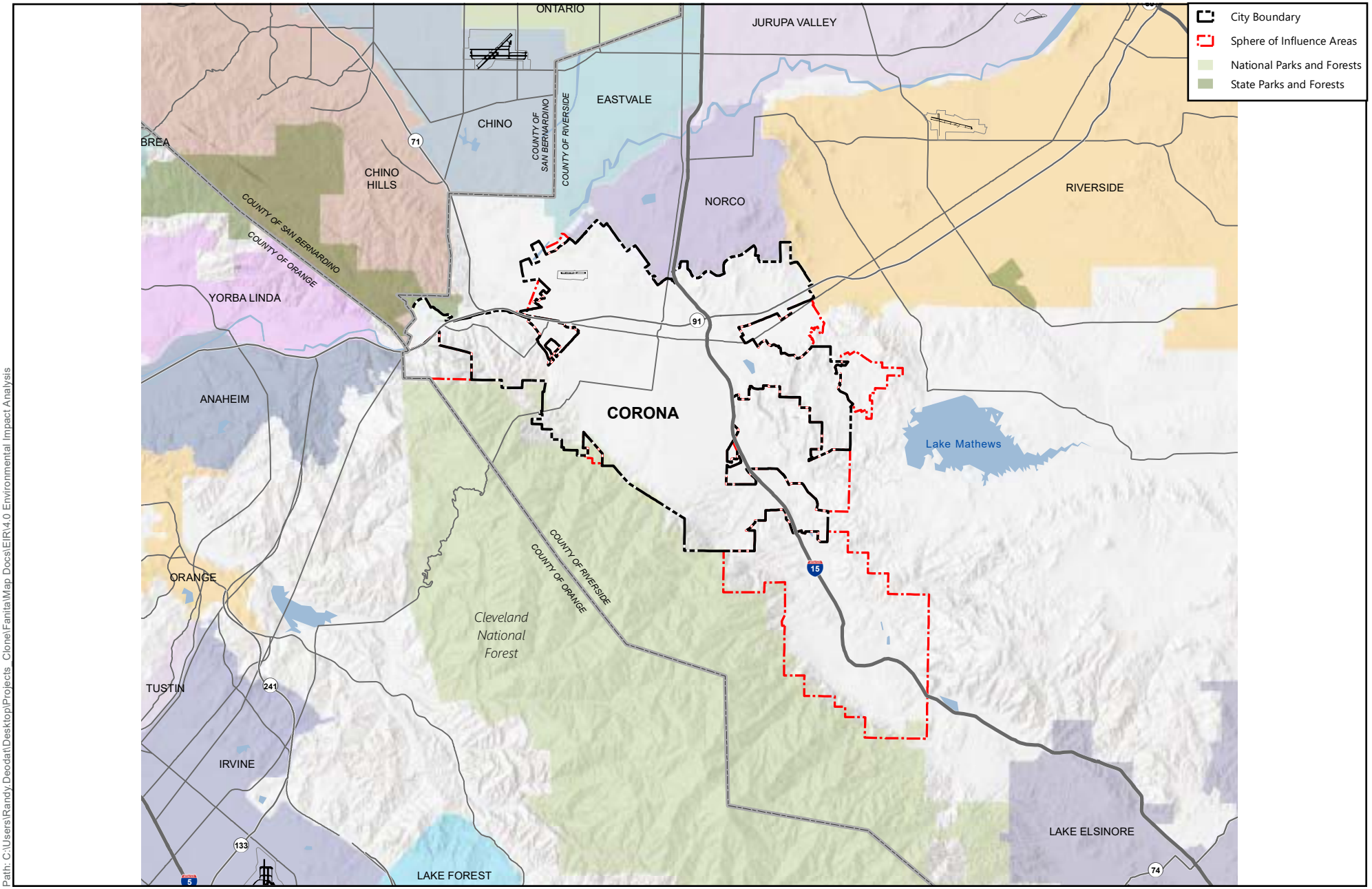
2.6 Discretionary Actions

The project is a "discretionary project," which is defined in Section 15357 of the CEQA Guidelines as "a project that requires the exercise of judgment or deliberation when the public agency or body decides to approve or disapprove a particular activity." The project would require approval of several discretionary actions by the City and other responsible agencies, which are listed in Table 2-3, Discretionary Actions.

Table 2-3. Discretionary Actions

Action	Approving Agency
Certification of the Environmental Impact Report and adoption of the Mitigation Monitoring and Reporting Program, Findings of Fact, and Statement of Overriding Considerations	City
Clean Water Act Section 401 Water Quality Certification and National Pollutant Discharge Elimination System Construction Permits	Santa Ana Regional Water Quality Control Board
Clean Water Act Section 404 Permit	U.S. Army Corps of Engineers
California Fish and Game Code Section 1602 Permit	California Department of Fish and Wildlife
Section 7 of the Endangered Species Act	U.S. Fish and Wildlife Service
Encroachment Permit	California Department of Transportation
Encroachment Permit	Riverside County Flood Control and Water Conservation District

Notes: City = City of Corona



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Source: Placeworks 2017.

Harris & Associates

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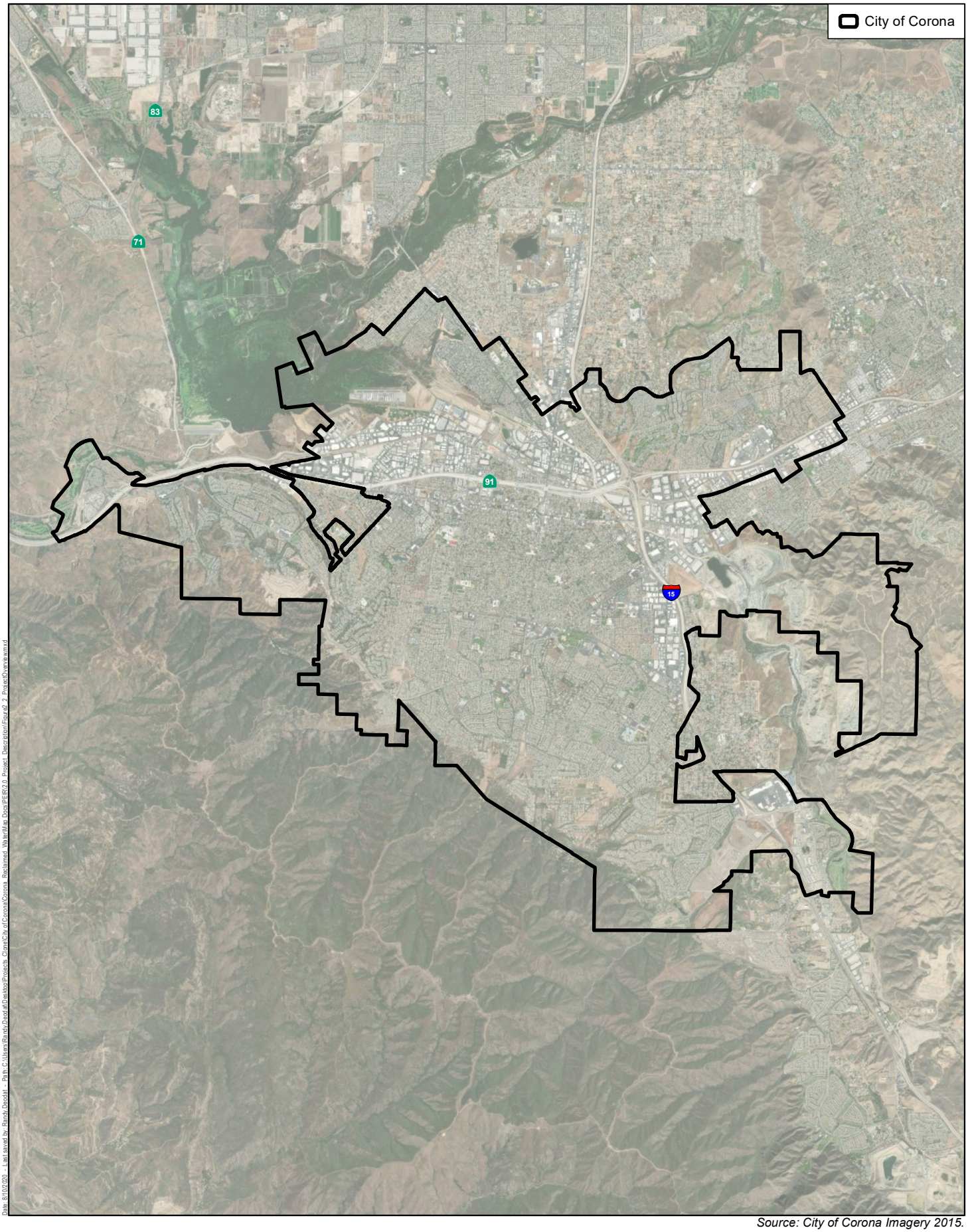
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Figure 2-1

Regional Location

City of Corona 2018 Reclaimed Water Master Plan

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Source: City of Corona Imagery 2015.

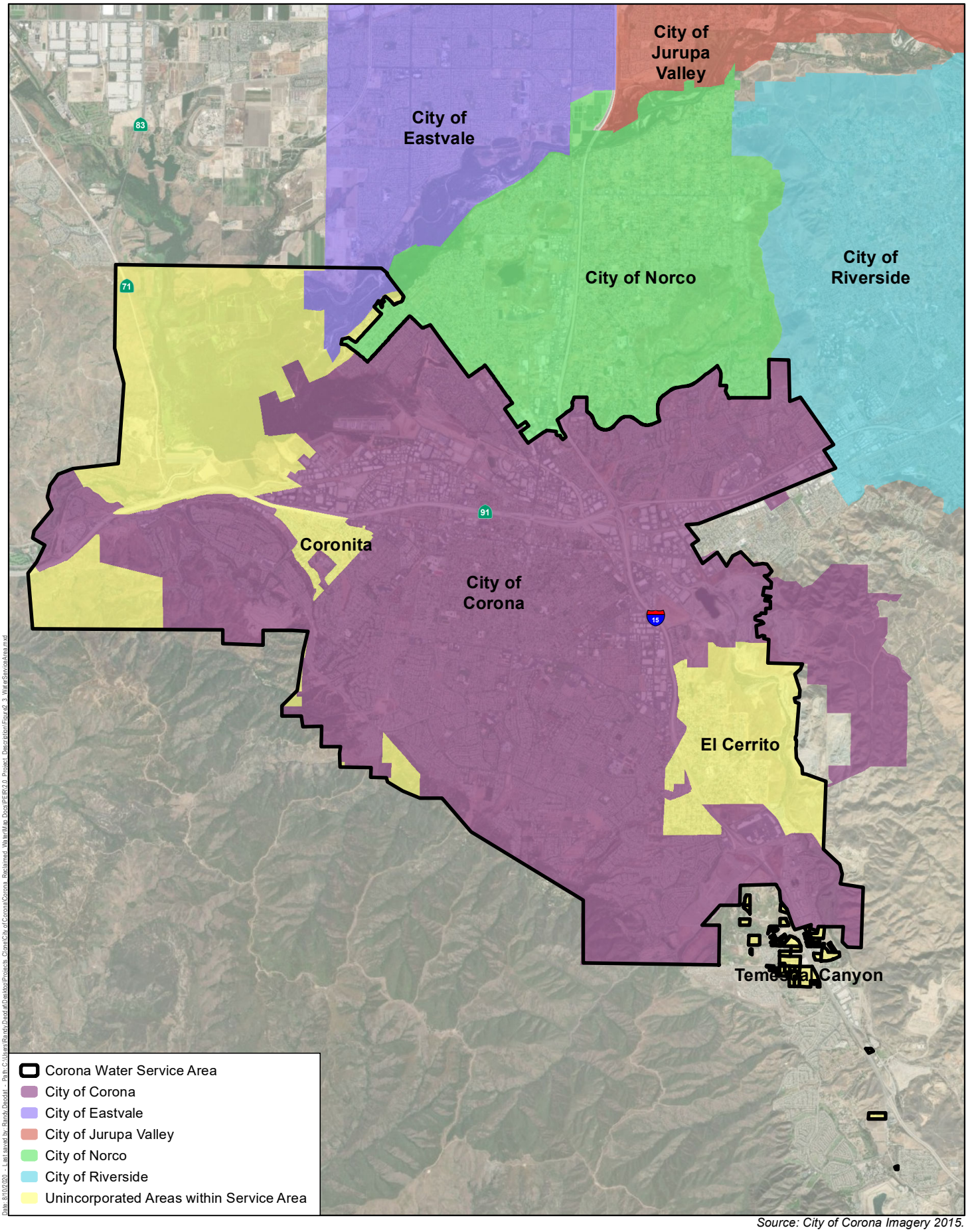
Harris & Associates

Figure 2-2

Project Overview

City of Corona 2018 Reclaimed Water Master Plan

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Source: City of Corona Imagery 2015.

Harris & Associates

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Miles

Figure 2-3

Water Service Area

City of Corona 2018 Reclaimed Water Master Plan

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Source: County of Riverside Imagery 2016.

Harris & Associates

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0 2,000 4,000

Feet

Figure 2-4a

Source of Supply Projects

City of Corona 2018 Reclaimed Water Master Plan

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Source: County of Riverside Imagery 2016.

Harris & Associates

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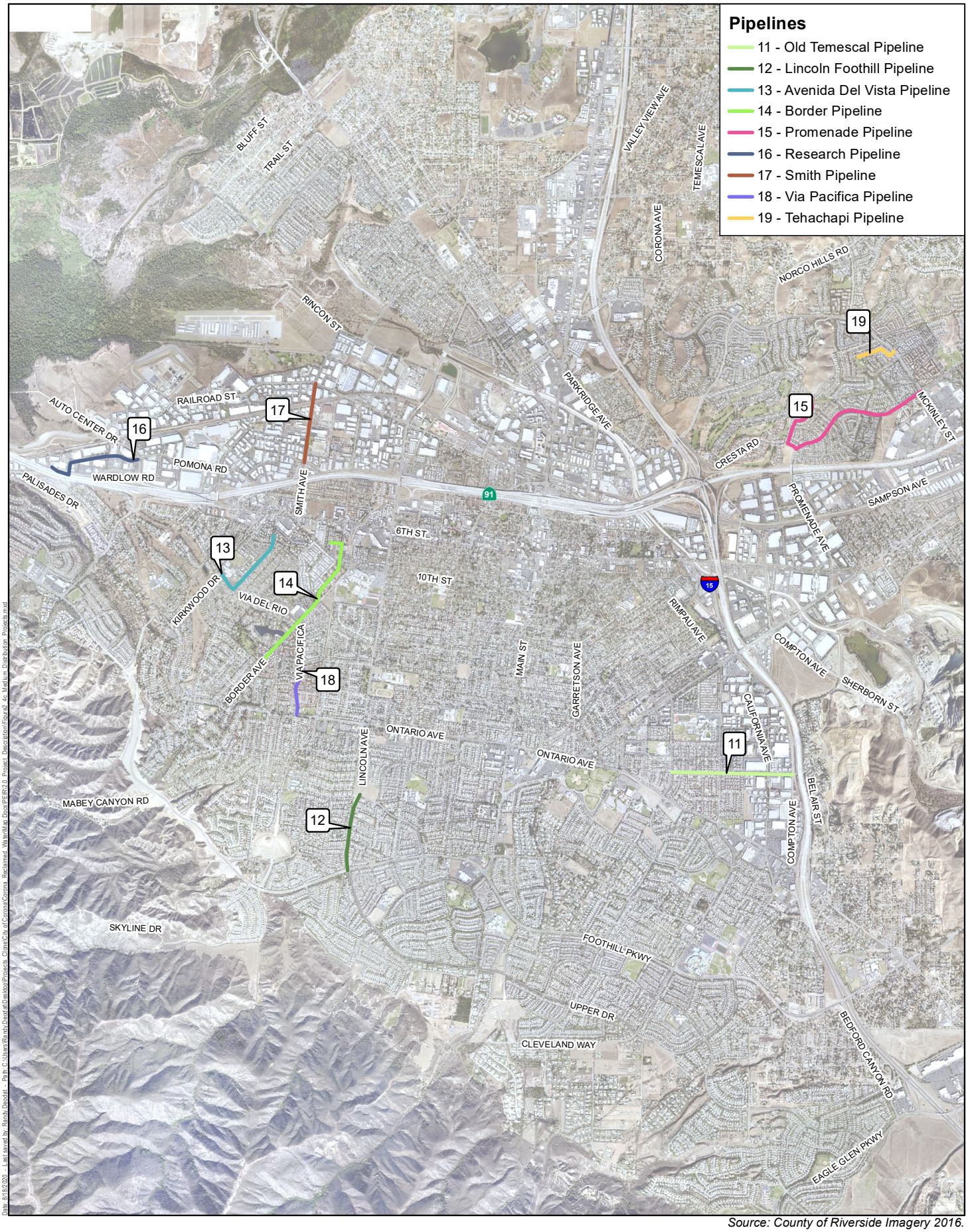
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Figure 2-4b

Large Distribution Pipelines

City of Corona 2018 Reclaimed Water Master Plan

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Source: County of Riverside Imagery 2016.

Harris & Associates

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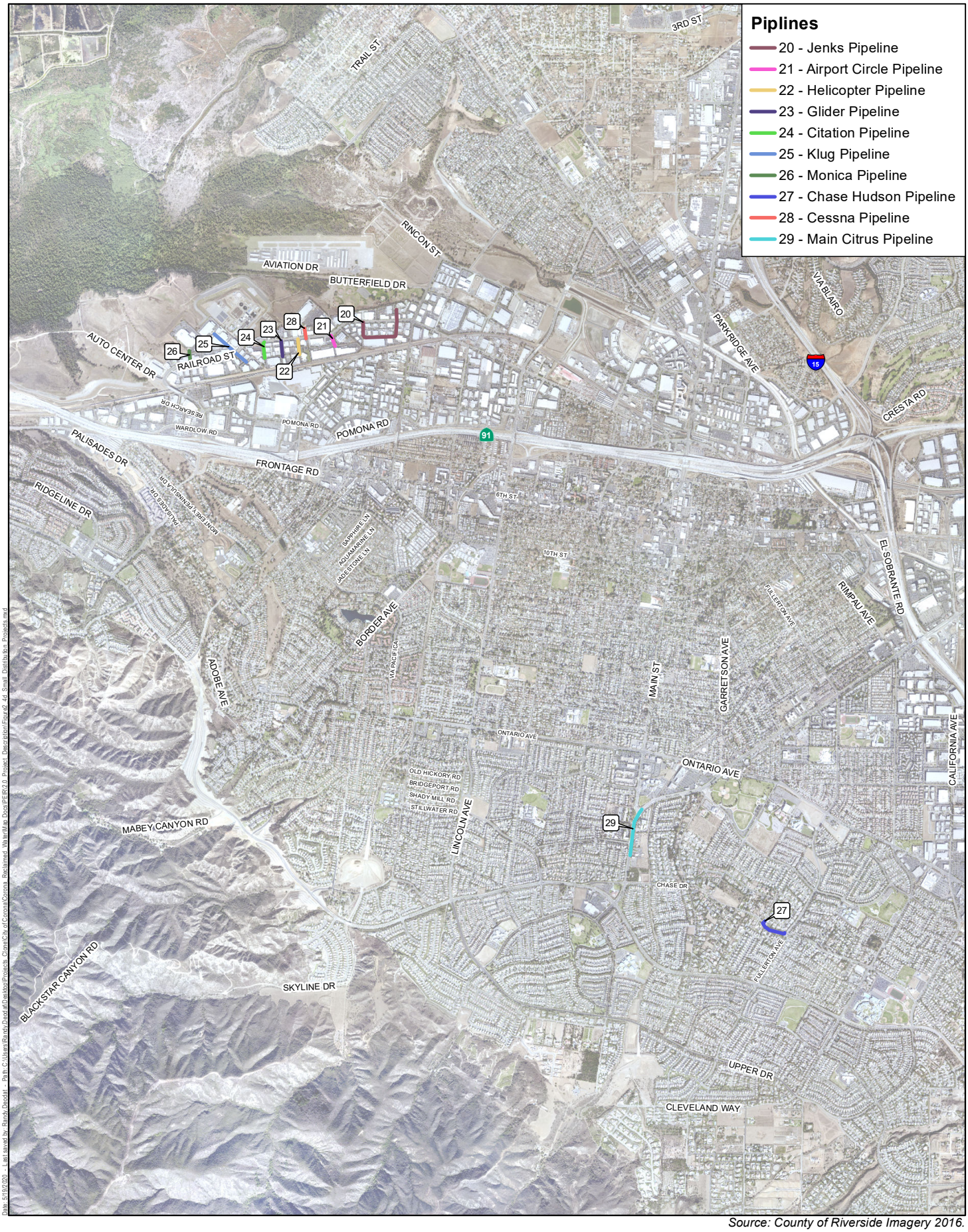
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Figure 2-4c

Medium Distribution Pipelines

City of Corona 2018 Reclaimed Water Master Plan

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Source: County of Riverside Imagery 2016.

Harris & Associates

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Feet

Figure 2-4d

Small Distribution Pipelines

City of Corona 2018 Reclaimed Water Master Plan

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Chapter 3 Environmental Analysis

Sections 3.1 through 3.20 of this Program Environmental Impact Report (PEIR) contain a discussion of the potential significant environmental impacts from implementation of the 2018 Reclaimed Water Master Plan (project or 2018 RWMP), including information related to existing site conditions; applicable regulations; direct, indirect, and cumulative environmental impact analyses; and mitigation measures that would reduce or avoid environmental impacts.

Potential Significant Environmental Impacts

This chapter provides an analysis of the following potential significant environmental impacts of the project:

- Section 3.1, Aesthetics
- Section 3.2, Agriculture and Forestry
- Section 3.3, Air Quality
- Section 3.4, Biological Resources
- Section 3.5, Cultural Resources
- Section 3.6, Energy
- Section 3.7, Geology, Soils, and Paleontological Resources
- Section 3.8, Greenhouse Gas Emissions
- Section 3.9, Hazards and Hazardous Materials
- Section 3.10, Hydrology and Water Quality
- Section 3.11, Land Use and Planning
- Section 3.12, Mineral Resources
- Section 3.13, Noise
- Section 3.14, Population and Housing
- Section 3.15, Public Services
- Section 3.16, Recreation
- Section 3.17, Transportation
- Section 3.18, Tribal Cultural Resources
- Section 3.19, Utilities and Service Systems
- Section 3.20, Wildfire

Sections 3.1 through 3.20 provide a detailed discussion of the environmental setting, regulatory setting, thresholds of significance, direct and cumulative impacts associated with the project, and mitigation measures designed to reduce significant impacts where required and when feasible. The residual impacts following the implementation of any mitigation measure are also discussed. A description of each subsection is provided below.

Environmental Setting

According to Section 15125 of the California Environmental Quality Act (CEQA) Guidelines, an environmental impact report (EIR) must include a description of the existing physical environmental conditions in the vicinity of a project to provide the "baseline condition" against which project-related impacts are compared. Normally, the baseline condition is the physical condition that exists when the Notice of Preparation is published. The Notice of Preparation for this PEIR was published on May 20, 2020.

Regulatory Setting

This subsection provides a summary of regulations, plans, policies, and laws that are relevant to each environmental topic at the federal, state, and regional and/or local levels.

Thresholds of Significance

Impact significance criteria are used to determine whether potential environmental effects are significant. The impact significance criteria used in this analysis are primarily based on Appendix G of the CEQA Guidelines and define the type, amount, and extent of impact that would be considered a significant, adverse change in the environment. The thresholds of significance are intended to assist the reader in understanding how and why an EIR reaches a conclusion that an impact is significant.

Environmental Analysis

Impact Analysis

The analysis of environmental impacts considers both the construction and operational aspects of implementation of the project. As required by Section 15126.2(a) of the CEQA Guidelines, direct, indirect, short-term, extended-term, on-site, and off-site impacts are addressed as appropriate for the resource area being analyzed.

Level of Significance Before Mitigation

This subsection uses the following categories to describe the level of significance of impacts identified during the course of the environmental analysis.

No Impact. This term is used when the project's construction or operation would have no adverse impact on a resource area.

Less Than Significant. This term is used to refer to (1) impacts resulting from implementation of the project that are not likely to exceed the defined thresholds of significance and (2) potentially significant impacts that are reduced to a level that does not exceed the thresholds of significance after implementation of mitigation measures.

Significant. This term is used to refer to impacts resulting from implementation of the project that exceed the thresholds of significance before identification of mitigation measures. A "significant effect" is defined by Section 15382 of the CEQA Guidelines as "a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment [but] may be considered in determining whether the physical change is significant."

Significant and Unavoidable. This term is used to refer to significant impacts resulting from implementation of the project that cannot be eliminated or reduced to below applicable thresholds of significance through implementation of feasible mitigation measures.

Mitigation Measures

Section 15126.4 of the CEQA Guidelines requires an EIR to "describe feasible measures which could minimize significant adverse impacts" if avoidance is not possible. CEQA Guidelines, Section 15364, defines "feasible" as "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors." This subsection lists the mitigation measures that could reduce the severity of impacts identified in the Impact Analysis subsection.

Level of Significance After Mitigation

This subsection includes a summary of project impacts after the implementation of feasible mitigation measures prescribed for the project.

Cumulative Impacts and Mitigation

CEQA requires that EIRs discuss cumulative impacts in addition to project impacts. In accordance with CEQA, the discussion of cumulative impacts must reflect the severity of the impacts and the likelihood of their occurrence; however, the discussion need not be as detailed as the discussion of environmental impacts attributable to the project alone. Further, the discussion is guided by the standards of practicality and reasonableness. According to Section 15355 of the CEQA Guidelines, "cumulative impacts" are defined as the following:

> Two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.
>
> (a) The individual effects may be changes resulting from a single project or a number of separate projects.
>
> (b) The cumulative impact from several projects is the change in the environment, which results from the incremental impact of the project when added to other closely related past, present, and reasonably

> foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

Section 15130(a)(1) of the CEQA Guidelines further states that a "cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts."

In addition, CEQA also requires that EIRs discuss the cumulative impacts of a project when the project's incremental effect is cumulatively considerable. Therefore, the discussion of cumulative impacts in an EIR evaluates whether the impacts of the project will be significant when considered in combination with past, present, and reasonably foreseeable future projects and whether the project would make a cumulatively considerable contribution to those impacts. CEQA recognizes that the analysis of cumulative impacts need not be as detailed as the analysis of project-related impacts but, instead, should "be guided by the standards of practicality and reasonableness" (CEQA Guidelines, Section 15130[b]). CEQA Guidelines, Section 15130, indicates that, where a lead agency is examining a project with an incremental effect that is not cumulatively considerable, it need not consider the effect significant but shall briefly describe the basis for its conclusion. As further clarified by Section 15065(a)(3) of the CEQA Guidelines, "cumulatively considerable" means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, other current projects, and probable future projects. CEQA Guidelines, Section 15130(a)(3), allows a project's contribution to be rendered less than cumulatively considerable with implementation of or funding its fair share of a mitigation measure or measures designed to alleviate the cumulative impact.

The geographic scope of the cumulative impact analysis varies depending on the specific resource area being analyzed. The geographic scope defines the geographic area in which projects may contribute to a specific cumulative impact. Therefore, past, present, and reasonably foreseeable future projects within the defined geographic area for a given cumulative issue must be considered.

CEQA Guidelines, Section 15130(b), presents two possible approaches for considering past, present, and reasonably foreseeable future projects. It indicates that either of the following could be used:

- A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency
- A summary of projections contained in an adopted General Plan or related planning document or in a prior environmental document that has been adopted or certified that described or evaluated regional or area-wide conditions contributing to the cumulative impact

Based on the programmatic nature of the project, the cumulative impact analysis contained in this PEIR applies the summary of projections approach described previously. Consistent with Section 15130(b)(1)(B) of the CEQA Guidelines, this PEIR analyzes the environmental impacts of adopting the 2018 RWMP, which contemplates new reclaimed water facilities. As a result, this PEIR addresses the cumulative impacts of these facilities in conjunction with new development planned in the City of Corona and nearby unincorporated areas in the County of Riverside.

Key planning documents used in the cumulative analysis and incorporated by reference in this PEIR include the following:

- City of Corona Reclaimed Water Master Plan (2018)
- City of Corona 2020–2040 General Plan and EIR (2020)
- County of Riverside General Plan and EIR (2015)
- South Coast Air Quality Management District Air Quality Management Plan (2016)
- Western Riverside Multiple Species Habitat Conservation Plan (2003)

Conclusion

This subsection summarizes whether each of the project's significant environmental impacts discussed and analyzed in the impact analysis has or has not been reduced to below a level of significance through mitigation. This subsection includes a discussion supported by a synopsis of the rationale for the conclusion.

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3.1 Aesthetics

This section discusses the potential impacts to the visual character of the 2018 Reclaimed Water Master Plan (project or 2018 RWMP) and surrounding areas from implementation of the project. The analysis in this section is based in part on the following information: City of Corona 2020–2040 General Plan (City of Corona 2020).

3.1.1 Environmental Setting

This section describes the environmental setting as it relates to aesthetics for the City of Corona's (City's) water service area. The project proposes reclaimed water facilities in various locations throughout the water service area.

3.1.1.1 Community Character

The City and water service area are characterized by lush and diverse landscape, which can be seen from freeway entries, neighborhoods, industrial parks, and historic districts. The intensity and scale of the City's greenery is most evident when viewing the City from a distance, where the trees appear as an urban forest. The City's primary entry at 6th Street is well marked with street trees and signage at the Interstate (I-) 15 and State Route (SR-) 91. The City has established landscape assessment districts to maintain streetscapes, lighting, parkways, and medians. These districts primarily cover neighborhoods in southern, western, and northeastern areas of the City. Community landscape may be best appreciated from Green River Road, Ridgeline Drive, Foothill Parkway, Upper Drive, Promenade Avenue, McKinley Street, and the southern side of Hidden Valley Parkway (City of Corona 2020).

The City's structure, form, and character can be categorized into four types: historic core, residential neighborhoods, commercial and mixed-use nodes, and industrial corridors. These types, as follows are used to generally categorize development throughout the area by physical features, such as character, form, and structure:

- **Historic Core.** The heart of the City's historic core is Grand Boulevard, a circle street that is 3 miles in circumference, 1 mile in diameter, and 100 feet wide. A variety of ornamental trees along its periphery creates a sense of place and identity. Unifying urban design elements in the historic core—landscaping and street lights, compatible building heights, and walkable blocks—complement the historic buildings. Two principal thoroughfares, Main Street (north–south) and 6th Street (east–west), intersect at the center of the circle. SR-91 and railroad tracks cross Grand Boulevard to the north; Magnolia Avenue runs diagonally through central Corona. Inside the circle, a grid of pedestrian-oriented, rectangular blocks and streets create neighborhoods and small commercial nodes. Most residential neighborhoods consist of single-family and low-density multi-family homes, most of which are accessed by a rear alley. Somewhat

larger, oddly shaped lots along the periphery and facing Grand Boulevard create the opportunity for the stately homes that give this area its historic residential feel. Historic homes meet contemporary buildings along Main Street and 6th Street, the commercial core of this area. Corona Regional Medical Center, medical and professional offices, the library, and the Corona Mall make up this commercial node. The surrounding neighborhoods contain historic homes of varying vintages, and the streets and frontages are pedestrian in scale.

- **Residential Neighborhoods.** Typical of Southern California suburban subdivisions, most of the City's suburban neighborhoods contain single-family detached units, with some clusters of duplexes, townhomes, condominiums, and apartments. The architecture largely echoes design styles used throughout the region, with Spanish and Mediterranean influences, surfaced with stucco, and painted in earth tones. Dedicated common open space creates opportunities for community gathering spaces. Suburban neighborhoods are generally toward the periphery of the historic core, south of Ontario Avenue, west of Lincoln Avenue, and in the northeastern and northwestern corners of the City. Residential areas outside the historic core show a typical suburban neighborhood form—inward orientation of housing on cul-de-sacs and curvilinear streets. Community-serving commercial centers exist at major street intersections of the primary entries and in most neighborhoods. Typically, these contain a mix of auto-oriented, local-serving retail and convenience uses with a major anchor tenant. Generally, buildings are set back from the street with ample parking between the building and street frontage.
- **Commercial and Mixed-Use Nodes.** In addition to neighborhood commercial centers, the City has a number of commercial nodes that serve as major employment centers in addition to meeting local and regional shopping needs. These nodes make up the areas of 6th Street and Main Street, Magnolia Avenue and I-15, Ontario Avenue and I-15, Cajalco Road and I-15 (The Crossings), and Dos Lagos just south of the Crossings. These areas are a mix of retail, commercial, service, and office uses, depending on the location. Many of the City's commercial nodes are characterized by large parcel sizes and deep lots of varying sizes. Site design is similar for the large and small parcels—typically, buildings are at the rear of the property, and surface parking is provided between the structures and street frontage. The older commercial shopping centers and office and business complexes developed during the postwar boom as independent, auto-oriented destinations with limited continuity in design, architectural articulation, landscape, or amenities. Few pedestrian walkways or public spaces provide internal connectivity. Big-box buildings are occasionally broken by freestanding pads for business along frontages.
- **Industrial Corridors.** There are two major industrial corridors in the City. The first is a broad corridor that parallels SR-91 and the railroad across the north-central part of the

City. It begins at the Prado Basin and extends east to the I-15 and SR-91 interchange and south to Ontario Avenue. The second industrial corridor is in Temescal Valley along I-15. These corridors include large parcels developed within a larger, "supergrid" network of streets and contain industrial uses with variable physical form and quality. Older industrial uses typically consist of large, box-like buildings with limited architectural treatment. Many sites are not landscaped or have minimal decorative screening or walls, and the area lacks unifying design elements.

3.1.1.2 Visual Resources

The City is situated on a river plain and is bounded on three sides by mountains, the Santa Ana Mountains, Gavilan Hills, and Chino Hills, which dominate most viewsheds in the City. Additionally, the Temescal Wash bisects the City. This intersection of mountains, valleys, and plains creates a visually dynamic landscape of varying shapes, colors, and textures. These resources are described below.

Scenic Mountain Views

Scenic mountain views surround the City. West and south are the Chino Hills and the Santa Ana Mountains. The Cleveland National Forest, composed of evergreen native chaparral, is considered a scenic resource for the community. The surrounding mountains are the dominant natural feature in most views, providing a dramatic visual contrast to the flat topography in the City.

Surrounding mountains also frame views of the City from its freeway entries. These views are visible from the eastbound approach into the City from SR-91. SR-91 runs through the Santa Ana Canyon, and its viewshed near the western portion of the City is bounded by the Chino Hills to the north and the foothills of the Santa Ana Mountains to the south, with the narrow gap between these hills framing the first visual impression of the City. The Chino Hills then turn abruptly north, the Santa Ana Mountain foothills trend southeast, and the gap between the two frames a wide vista that includes Prado Basin with the foothills of the San Bernardino Mountains as a backdrop.

Scenic City Views

Roads that traverse the water service area provide scenic views of the City, its hillsides, and environs. SR-91 meanders through the Santa Ana Canyon and provides views of the Cleveland National Forest and Chino Hills. I-15 extends south through Temescal Canyon between the Cleveland National Forest and Gavilan Plateau, providing panoramic views of the valley floor and surrounding hills. Cajalco Road, which extends east from Temescal Canyon to Mead Valley over the Gavilan Plateau, is also eligible for designation as a County of Riverside (County) scenic corridor.

Significant views of the City are also visible from I-15 as it descends from the Norco Hills north of the City, providing a grand entrance. Significant views of the City can be found from many

ridges and peaks surrounding the City, as well as from within the canyons of the surrounding mountain ranges. Wide, open vistas associated with these natural features dominate the visual image of the City.

Scenic Corridors

Figure 3.1-1, Scenic Corridors, shows the location of the local and state scenic corridors in the water service area. The City's Scenic Highway Plan is a composite of vistas, activity centers, corridors and pathways, edge areas, and entry and approach areas. The plan provides for the establishment, development, and protection of the City's highways and corridors for scenic purposes (City of Corona 2020). The plan includes the following elements:

- **Scenic Corridors.** Visible land area outside the highway right-of-way; generally described as the view from the road.
- **Rural Designated Scenic Highway.** A route that traverses a defined corridor within which natural scenic resources and aesthetic values are protected and enhanced.
- **Urban Designated Scenic Highway.** A route that traverses a defined visual corridor that offers an unhindered view of attractive urban scenes.
- **Unique Functions of a Scenic Highway.** Views for enjoyment of highway users, visual relief from urban development, connection between activity centers, City identification, and accents to entranceways and special areas of the City.

Table 3.1-1 lists the scenic corridors in the City and the water service area.

Table 3.1-1. Scenic Corridors in Corona

Scenic Corridors	Location
Local Corridors	
Grand Boulevard	Views of the City's historic core, particularly historic residential estates along the edge of the Grand Boulevard Circle, and mature trees in the parkway
Main Street from 3rd Street to southern terminus	Views of the City's historic core, the Santa Ana Mountains to the west and south, and the low foothills of the San Bernardino Mountains to the east
Ontario Avenue, from Mangular Street to State Street	Views of the Santa Ana Mountains to the west and the low foothills of the San Bernardino Mountains to the east
Chase Drive from Foothill Parkway to Spring Meadows	Views of the Santa Ana Mountains to the west and the low foothills of the San Bernardino Mountains to the east
Foothill Parkway, from Paseo Grande to Bedford Canyon Road	Views looking north to the Prado Basin to the west and the hills and valleys leading toward the San Bernardino Mountains to the north and east
Magnolia, from Ontario Avenue to Rimpau Avenue	Views of the Santa Ana Mountains and the narrow pass between the San Bernardino Mountain foothills to the northwestern end of the City
Green River Rd, from SR-91 to Palisades Drive	Views of a narrow canyon
Palisades Drive from Green River to Sertas Club Drive	Views of the narrow canyon
Eagle Glen Parkway, from I-15 to southern terminus	Views of the City from the top of the eastern slope of Eagle Glen Parkway

Table 3.1-1. Scenic Corridors in Corona

Scenic Corridors	Location
Interstate, State, and County Corridors	
SR-71	SR-71 traverses on the eastern side of the Chino Hills, offering view of preserved hillsides on western edge of Chino Hills State Park
SR-91 and I-15	SR-91 offers views of the Santa Ana Canyon and the Norco/Corona Hills; I-15 offers views of Temescal Valley
Cajalco Road	Cajalco Road is a County-eligible scenic corridor that extends eastward from I-15 at the City's border up to the Gavilan Plateau

Notes: City = City of Corona; County = County of Riverside; I- Interstate; SR- = State Route

Prominent Scenic Vistas

The City benefits from a variety of scenic vistas. The wide, open vistas are associated with natural features that dominate the visual image of the City. Internally, the visual elements of major arterials, such as Grand Boulevard, provide unique vistas that characterize individual neighborhoods.

Significant vistas include the following:

- Prado Basin views from Sierra del Oro, which encompass the basin to the south and canyon areas to the west
- View south to the Santa Ana Mountains from the I-15/SR-91 freeway interchange
- Southern view of the foothills from major north–south streets south of Ontario Avenue
- Views of the San Gabriel Mountains from the higher elevations south of Ontario Avenue

Eagle Glen Parkway in the eastern area of the City provides views of scenic vistas in the City. Eagle Glen Parkway runs along the top of the western slope of Eagle Glen Parkway. Another scenic road is Palisades Drive/Green River Road south of the SR-71 and SR-91 interchange. This corridor passes through a narrow canyon slot. Views from South Corona, including Ontario Avenue and Foothill Boulevard that traverse the higher slope areas, provide views looking north. This includes the Prado Basin to the west and the hills and valleys leading to the San Bernardino Mountains to the north and east.

The Prado Basin is dramatic and densely covered by trees adapted to its moist environment. Its green mass is best seen from Sierra del Oro, SR-71 near its intersection with SR-91, and the industrial and residential areas flanking the basin in the northwestern quadrant of the City.

3.1.1.3 Light and Glare

Sources of light and glare in the City and water service area include building (interior and exterior), security, sign illumination, and parking area lighting. Other sources of nighttime light and glare include street lights and vehicular traffic along surrounding roadways. Because the City is adjacent to urbanized cities, including Norco and Eastvale to the north, ambient light in the community is impacted by the adjacent land uses. However, the City is also guarded from excessive light

spillover by Prado Basin to the northwest and the Cleveland National Forest to the west, which have few sources of light, allowing for clear day and nighttime views. Similarly, east and south of the City are the communities that make up the water service area, including Home Gardens, El Cerrito, and Temescal Canyon, which include vacant land and natural open space that allow for clear day and nighttime views.

3.1.2 Regulatory Setting

This section describes the federal, state, and local regulatory framework adopted to protect visual resources.

3.1.2.1 Federal

There are no applicable federal regulations that apply to visual resources.

3.1.2.2 State

California Department of Transportation 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 2684, and 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 the following three criteria described in Caltrans' Guidelines for Official Designation of Scenic Highways (2008):

- **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.

3.1.2.3 Local

City of Corona 2020–2040 General Plan

The following goals and policies in the City of Corona 2020–2040 General Plan are relevant to aesthetics (City of Corona 2020).

Land Use Element

Goal LU-15. A mix of governmental service, institutional, educational, recreational, and utility facilities that support the needs of Corona's residents and businesses and improve the quality of life in the community.

Policy LU-15.1. Accommodate existing schools, parks, government, fire and police facilities, utility, and institutional uses suited to serving the local needs of Corona residents and business in accordance with the land use plan's designations and applicable design and development policies.

Policy LU-15.2. Allow for the development of new schools, parks, government, fire and police facilities, utility, and institutional uses in any location of the City, regardless of the land use plan's designation, provided the use is environmentally suitable and compatible with adjoining land uses, and adequate infrastructure can be provided.

Policy LU-15.3. Promote collaborative and creative solutions between the public and private sectors to develop additional schools, parks, and other public facilities in the City and sphere of influence.

Policy LU-15.4. Ensure that the City's public buildings, sites, and infrastructure are designed to be compatible in scale, mass, character, and architecture with the district and neighborhood in which they are located and pertinent design and development characteristics specified by this plan.

Policy LU-15.5. Encourage non-City public agencies to design their structures and improvements to achieve a high level of visual and architectural quality and complement adjoining uses.

Goal LU-16. Open spaces that provide Corona's residents with opportunities to enjoy the natural environment, provide visual "relief" from urban development, protect significant plant and animal habitats, and protect development from natural environmental hazards.

Policy LU-16.3. Protect viewsheds by prohibiting the placement of electrical transmission lines, substations, and other types of overhead or at grade heavy infrastructure into public open space or other sensitive areas.

Policy LU-16.4. Design improvements constructed in public open spaces to reflect their natural environmental setting in form, materials, and colors and to ensure compatibility with adjoining residential, commercial, and industrial uses.

Policy LU-16.5. Require that improvements required to be placed in open space areas (e.g., reservoirs, lighting, and other infrastructure) be designed to minimize the impact on the landscape, avoid obstructing viewsheds, and be shielded to the extent feasible by landscaping, trees, and other natural forms.

Community Design Element

Goal CD-6. Develop and implement land use controls that preserve significant visual resources from potential loss or disruption.

Policy CD-6.1. Ensure unobstructed view corridors or viewsheds of the San Bernardino, Santa Ana, and San Gabriel Mountains, the Chino and La Sierra Hills, and other significant natural features from public spaces such as parks, termination of streets and community trails, community centers, and school properties, where feasible, as part of the design of development projects.

Policy CD-6.4. Require that projects be designed and sited to maintain the natural topographic, physiographic, and aesthetic viewshed characteristics of those features, utilizing the following conditions:

- Minimize the area and height of cuts and fills to the extent technically achievable, ensuring that slope tops and bottoms are rounded and facilitate a smooth and seamless transition where natural and built slopes intersect.
- Configure development sites to mimic predevelopment natural topography by clustering sites and individual units and avoiding extensive fragmentation of steep slopes, "stair stepping" and varying terraces of structures, and/or other design practices.
- Minimize the size of flat development pads in site grading to that necessary to accommodate the building footprint, a reasonable amount of useable outdoor space, and structural and site stability.
- Encourage building architectural design styles, forms and shapes, materials, and building siting to complement rather than visually dominate their landscape setting.
- Minimize the height of retaining walls, and design with smooth flowing forms that follow topography and with material colors and textures that blend in with the surrounding landscape.
- Plant hillside and canyon slopes with natural species of drought-tolerant plants to soften the visual impact of land grading, retaining walls, structures, and roads and maintain (to the extent feasible) natural vegetation.
- Restore disrupted vegetation, wildlife habitat, natural water courses, drainage swales, and other important viewshed features. Vegetation should be arranged in informal masses to create a textured slope characteristic of natural chaparral mountain slope terrain.

Goal CD-7. Maintain, establish, develop, and protect the City's highways and corridors for scenic purposes.

Policy CD-7.1. Review, update, and expand the City's Scenic Highway Plan to keep visual resources associated with the City's highways and roadways current; consider designation roads along the City's hillsides bordering the City as potential candidates for scenic roads or highways.

Policy CD-7.3. Minimize to the extent feasible the installation or expansion of poles, billboards, and other above-ground appurtenances from detracting from the views along the City's scenic highways and corridors; phase out uses that impair scenic views.

Corona Design Guidelines

Citywide design guidance is primarily provided through two documents: Residential Development Design Guidelines and Industrial Development Design Guidelines. Additionally, adopted specific plans for certain areas of the City have design guidelines for commercial, industrial, and residential use. The guidelines accompany mandatory site development regulations in the zoning ordinance and specific plans. These documents also provide procedural guidance for applicants and guidelines for City staff in reviewing and approving designs and verifying compliance.

Landscape Design Guidelines

Landscaping is also an important part of the City's built environment. Well-designed landscaping can assist in softening the impact of developments and creating a more human-scale environment. Residential, commercial, and industrial landscape design guidelines were adopted by the City in 2010 with the goal of creating pleasant and attractive properties throughout the City. They are intended to promote a sense of community, create a more pleasant living and working environment, and promote water and resource conservation.

The City's current landscaping guidelines cover a range of topics, including design features, planting plan requirements, drainage, and irrigation. When reviewing plans, the City will consider the proposed combination of water-conserving trees, shrubs, subshrubs, vines, ground cover, and accent lighting. Additionally, projects are encouraged to use low-impact development methods, including porous paving, stormwater cisterns, extensive bioswales, and roof gardens. Hardscape site amenities may include boulders, recycling fountains, walls, art and sculptures, fences and benches.

The City also established landscape assessment districts to maintain streetscapes, lighting, parkways, and medians. These districts primarily cover neighborhoods in southern, western, and northeastern areas of the City.

Corona Zoning Ordinance

The Corona Municipal Code, Title 17, Zoning, provides provisions to guide development in a way that maintains the City's community character and visual resources in each land use district. The zoning ordinance regulates density, design, height, and setbacks for each of the zoning districts. In addition, the zoning ordinance provides minimum standards for landscaping (Chapter 17.70, Landscaping, Fences, Walls, and Hedges) and signage (Chapter 17.74, Signs).

Hillside Grading Ordinance

The City has supplemental regulations in areas with a slope of 15 percent or more as part of the City's Hillside District (Chapter 17.59, Hillside District) in order to:

- Encourage development clustering that contributes to the provision of new corridors.
- Encourage development design that reflects the distinct environmental and topographical characteristics of the land. Encourage the clustering of development on the most gently sloping portions of the site.
- Encourage innovative architectural, landscaping, circulation, and site design.
- Discourage mass grading of large pads and excessive terracing except where soils stability dictates grading and re-compacting for public safety.
- Encourage design and building practices to ensure maximum safety from wildfire hazard.

3.1.3 Thresholds of Significance

According to Appendix G of the California Environmental Quality Act Guidelines, "except as provided in Public Resources Code Section 21099," a significant impact related to aesthetics would occur if the project would (CEQA Guidelines, Section 15000 et seq.):

1. Have a substantial adverse effect on a scenic vista.
2. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.
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 a publicly accessible vantage point.) If the project is in an urbanized area, conflict with applicable zoning and other regulations governing scenic quality.
4. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

3.1.4 Environmental Analysis

3.1.4.1 Threshold 1: Scenic Vista

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

Impact Analysis

As discussed previously, four designated scenic vistas exist in the water service area as shown on Figure 3.1-2, Scenic Vistas: (1) the Prado Basin views from Sierra del Oro, which encompass the basin to the south and canyon areas to the west; (2) the view south to the Santa Ana Mountains from the I-15 and SR-91 freeway interchange; (3) the southern view of the San Bernardino foothills from major north–south streets south of Ontario Avenue; and (4) the views of the San Gabriel Mountains from the higher elevations south of Ontario Avenue.

Project components include the installation of transmission pipelines, construction of a new water storage tank, pump stations, and flow control improvements. Construction activities would require the use of heavy equipment, excavation and grading, and storage of materials on site (including stockpiled soil) in a designated staging area. Construction is estimated to last from 1 year for the small distribution projects to 4 years for the large distribution projects. Construction-related aesthetic impacts, including the use of heavy equipment, would be temporary in nature because the development of the pipelines identified in the 2018 RWMP would occur along a linear area, and construction would not occur in one area over an extended period of time. Therefore, construction of the project would not have an adverse effect on scenic vistas.

The 2018 RWMP includes the operation of the belowground pipelines and aboveground facilities including the Chase Tank and Chase Booster Pump Station, Western Riverside County Regional Wastewater Authority (WRCRWA) Booster Pump Station, and WRCRWA Flow Control Improvements projects. Upon completion of construction, pipelines would be buried underground, and trenches would be backfilled with on-site material, and the surface elevation would be restored to match the original ground surface and pavement surface elevations.

Visibility of the proposed aboveground facilities would vary based on distance from the water service area and presence of intervening vegetation and structures. The Chase Booster Pump Station and the WRCRWA Booster Pump Station would include aboveground turbine pumps necessary to deliver reclaimed water from reclamation treatment plants to the reclaimed system, and lift water from lower zones to the higher zones. The WRCRWA Flow Control Improvements would include aboveground flow control valves and flow meters to manage the flow of reclaimed water. These facilities would be colored purple because the City uses purple pipes to distinguish reclaimed water facilities from potable water infrastructure. These facilities would have a low profile and would be relatively small in nature. In addition, the Chase Tank would be partially buried based on the elevations of the project location. However, as shown on Figure 3.1-2, these facilities would not be in a visibly prominent location and block public views of the four identified scenic vistas. Therefore, the 2018 RWMP project components would not have a substantial effect on scenic vistas.

Level of Significance Before Mitigation

Implementation of the project would not have a substantial adverse effect on a scenic vista, and impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Because no mitigation measures are required, impacts would remain less than significant.

3.1.4.2 Threshold 2: State Scenic Highway

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

Impact Analysis

There are no officially designated state scenic highways in the water service area. However, SR-72, I-15, and the portion of SR-91 west of the SR-91 and I-15 interchange are designated eligible to be state scenic highways according to the California Scenic Highway Mapping System (Caltrans 2011). In addition, the City has designated scenic corridors as identified in Table 3.1-1 and shown on Figure 3.1-1.

The 2018 RWMP project components include the installation of transmission pipelines, construction of a new water tank, pump stations, and flow control improvements. Construction would occur mainly in public roadway rights-of-way and existing developed areas. These areas generally do not contain trees, rock outcroppings, or historic resources, and none are in a state scenic highway. Because no designated state scenic highways occur in the water service area, the project would not have the potential to damage scenic resources, including trees, rock outcroppings, or historic buildings, in a state scenic highway. Refer to Section 3.5, Cultural Resources, for impacts related to historic structures.

Level of Significance Before Mitigation

Implementation of the project would not substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings, in a state scenic highway. Impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Because no mitigation measures are required, impacts would remain less than significant.

3.1.4.3 Threshold 3: Substantial Degradation of the Existing Visual Character or Conflict with Applicable Regulations

Would the project, in non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings. (Public views are those that are

experienced from a 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?

Impact Analysis

The 2018 RWMP project components include the installation of transmission pipelines, construction of a new water tank, pump stations, and flow control improvements. Construction activities would require the use of heavy equipment, excavation and grading, and storage of materials on site (including stockpiled soil) in a designated staging area. Regarding the installation of pipelines, construction is estimated to last from 1 year for the small distribution projects to 4 years for the large distribution projects. Construction-related aesthetic impacts, including the use of large-sized heavy equipment, would be temporary in nature because the development of the pipelines identified in the 2018 RWMP would occur along a linear area, and construction would not occur in one area over an extended period of time.

Upon completion, trenches for pipeline installation would be backfilled with on-site material, and the surface elevation would be restored to match the original ground surface and pavement surface elevations. Therefore, installation and construction of the project would not have an adverse effect on scenic vistas.

The project includes the operation of the belowground pipelines and proposed aboveground facilities including the Chase Tank and Chase Booster Pump Station, WRCRWA Booster Pump Station, and WRCRWA Flow Control Improvements projects. Upon completion of construction, pipelines would be buried underground, trenches would be backfilled with on-site material, and the surface elevation would be restored to match the original ground surface and pavement surface elevations.

The Chase Tank and Chase Booster Pump Station would be constructed at Chase Park, which is currently a City park with playground facilities and open lawn areas. It is in a residential portion of the water service area with single-family residences directly north and west. The United Methodist Church is directly east, and the Harvest Christian Fellowship and Santiago High School are south. The Chase Tank would be partially buried underground based on the elevation of its location. The Chase Booster Pump Station would include aboveground turbine pumps necessary to deliver reclaimed water from reclamation treatment plants to the reclaimed system, and lift water from lower zones to the higher zones. Pumps and associated features of the pump station would be colored purple because the City uses purple pipes to distinguish reclaimed water facilities from potable water infrastructure.

The WRCRWA Booster Pump Station would be constructed adjacent to the existing WRCRWA facilities and an existing residential community. As stated previously, the pump stations would include aboveground turbine pumps painted the color purple. The WRCRWA Flow Control Improvements would be constructed directly north of Butterfield Park near the Corona Municipal

Airport. The WRCRWA Flow Control Improvements would include aboveground flow control valves and flow meters to manage the flow of reclaimed water. Infrastructure would be painted purple to distinguish the reclaimed water infrastructure. The operation of the aboveground facilities could present a significant permanent change to the visual character of the surrounding area.

Level of Significance Before Mitigation

The Chase Tank and Chase Booster Pump Station, WRCRWA Booster Pump Station, and WRCRWA Flow Control Improvements projects identified in the 2018 RWMP would substantially degrade the existing visual character or quality of public views of the water service area and its surroundings and would conflict with applicable zoning and other regulations governing scenic quality. The proposed pipelines identified in the 2018 RWMP would not substantially degrade the existing visual character or quality of public views of the water service area and its surroundings and would conflict with applicable zoning and other regulations governing scenic quality.

Mitigation Measures

AES-1: **Landscape Plan.** To screen aboveground project facilities during facility design, the design consultant shall prepare a Landscape Plan for each aboveground project facility identified in the 2018 Reclaimed Water Master Plan, including the Chase Tank facility. The Landscape Plan shall include measures to restore disturbed areas by re-establishing existing topography, including replanting trees or reseeding with a native seed mix typical of the immediately surrounding area. The Landscape Plan shall include a required seed mix and plant palette. Vegetation screening shall be included in the Landscape Plan to shield proposed aboveground facilities from public view. The Landscape Plan shall include a Monitoring Plan to ensure that site restoration and vegetation establishment is successful.

Level of Significance After Mitigation

Implementation of Mitigation Measure AES-1 would require the development of a Landscaping Plan, which would require visual screening of aboveground facilities from public views. Impacts would be reduced to a less than significant level with mitigation.

3.1.4.4 Threshold 4: Nighttime Light and Glare

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

Impact Analysis

Project facilities would not create a new source of substantial light that would adversely affect daytime or nighttime views in the area. Exterior emergency lighting would be installed around

project facilities, including water tanks and pump stations. Exterior lighting could adversely affect nighttime views by introducing a new source of light and glare. However, nighttime security lighting would comply with Chapter 17.86 of the Corona Municipal Code, which requires that exterior lighting be equipped with directional shields that aim light down to minimize spillover onto adjacent properties, sensitive land uses, open space areas, and public roadways.

Project facilities would not create a new source of glare that would adversely affect daytime or nighttime views in the area. Aboveground project components identified in the 2018 RWMP would be painted the color purple to distinguish them as reclaimed water facilities and would not contain reflective surfaces that would result in daytime glare. Therefore, the project would not adversely affect day or nighttime views in the area.

Level of Significance Before Mitigation

Implementation of the project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area. Impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Because no mitigation measures are required, impacts would remain less than significant.

3.1.5 Cumulative Impacts and Mitigation

3.1.5.1 Cumulative Threshold 1: Scenic Vistas

The geographic scope of potential cumulative impacts to scenic vistas is the local viewsheds that could be affected by the future projects in the water service area. A significant cumulative impact related to scenic vistas would occur if the cumulative projects and 2018 RWMP would cause view blockage to scenic vistas. New development in the water service area would have the potential to result in significant impacts to scenic vistas. However, adherence to development and design standards and implementation of the City of Corona 2020–2040 General Plan policies would ensure that future development would not have a substantial adverse impact on scenic vistas. Projects identified in the 2018 RWMP would not cause view blockage of the designated scenic vistas. Therefore, the project would not have a cumulatively considerable contribution to a cumulative impact related to scenic vistas.

3.1.5.2 Cumulative Threshold 2: State Scenic Highways

The geographic scope of potential cumulative impacts to state scenic highways is the water service area. No designated state scenic highways occur in the water service area. Therefore, the project would not contribute considerably to a cumulative impact to state scenic highways.

3.1.5.3 Cumulative Threshold 3: Substantial Degradation of the Existing Visual Character or Conflict with Applicable Regulations

The geographic scope of potential cumulative impacts to existing visual character is the water service area. A significant cumulative impact would occur if cumulative projects would change the overall visual character of the area. Implementation of the project with future development could result in a cumulatively significant impact related to existing visual character because of the change in the setting of the surrounding communities. Development would be required to comply with existing regulations that assist in maintaining the City's character, including the City's residential and industrial development design guidelines. In addition, the City's Zoning Ordinance would ensure that development under the City of Corona 2020–2040 General Plan would continue to maintain and be compatible with the City's visual character. Furthermore, the project would require a mitigation measure to be implemented for visually prominent aboveground structures with the potential to result in significant permanent change to the visual character of the surrounding area. Mitigation Measure AES-1 would require the development of a Landscaping Plan, which would require visual screening of aboveground facilities from public views. Similarly, it is anticipated that sites or landscapes that could be affected by related regional projects would also be required to mitigate for their impacts to existing visual quality and character. Therefore, the project would not contribute considerably to a cumulative impact to community character or conflict with applicable zoning or regulations.

3.1.5.4 Cumulative Threshold 4: Nighttime Lighting and Glare

The geographic scope of potential cumulative impacts from nighttime lighting or glare is the water service area. Implementation of the project with future development could increase nighttime light and glare in the City. Increased light would be generated by streetlights, residential lighting, parking lot lights, new commercial and mixed-use development, and signage. Increased lighting would potentially adversely affect adjacent properties and the overall nighttime lighting levels in the City. Increased glare in the City could potentially occur because of new development including building materials, roofing materials, or windows that would reflect sunlight. However, development and redevelopment projects in the City, including the 2018 RWMP, would be required to comply with the City's landscape design guidelines, Corona Municipal Code and 2020–2040 General Plan policies pertaining to light and glare which would ensure that any potential spillover would be minimized and would not result in a cumulative impact. Therefore, the project would not contribute considerably to a cumulative impact related to nighttime lighting and glare.

3.1.6 Conclusion

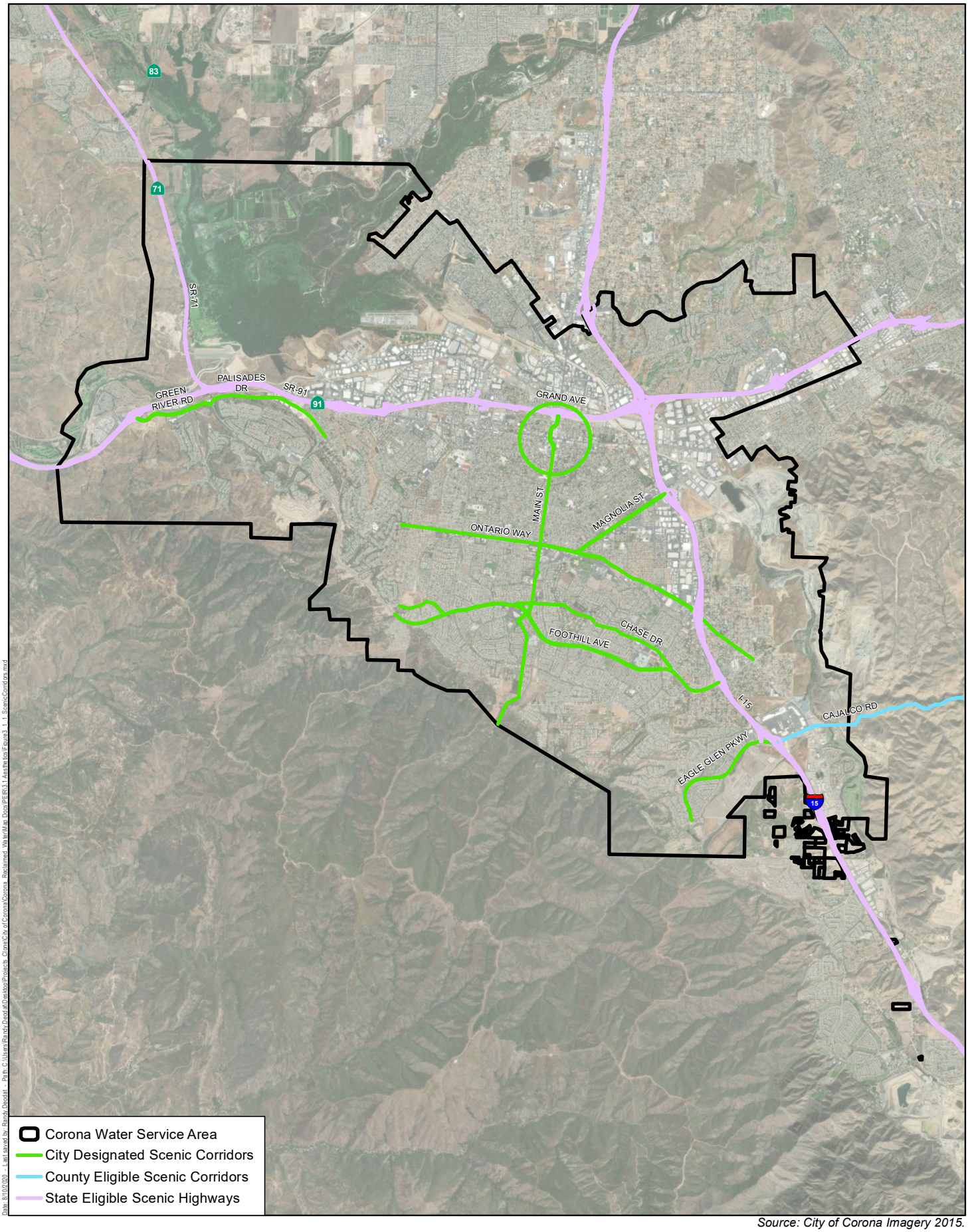
Construction of the project components associated with the 2018 RWMP would not result in an adverse effect on scenic vistas. Direct and cumulative impacts would be less than significant.

There are no officially designated state scenic highways in the water service area. Construction would not result in the impact to any scenic resources, including rock outcroppings, trees, or historic resources in a state scenic highway. Direct and cumulative impacts would be less than significant.

Construction of visually prominent facilities, such as water storage tanks, could present a significant permanent change to the visual character of the surrounding area. Implementation of Mitigation Measure AES-1 would require the development of a Landscaping Plan, which would provide a landscape buffer around the aboveground facilities and would serve as a visual screening to shield the facilities from public views. Direct and cumulative impacts would be less than significant.

Nighttime security lighting would be required for the aboveground 2018 RWMP project components. Nighttime security lighting would be required to comply with the Corona Municipal Code and City of Corona 2020–2040 General Plan policies pertaining to light and glare, which ensure that any potential spillover from nighttime lighting would be minimized. Direct and cumulative impacts would be less than significant.

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Source: City of Corona Imagery 2015.

Harris & Associates

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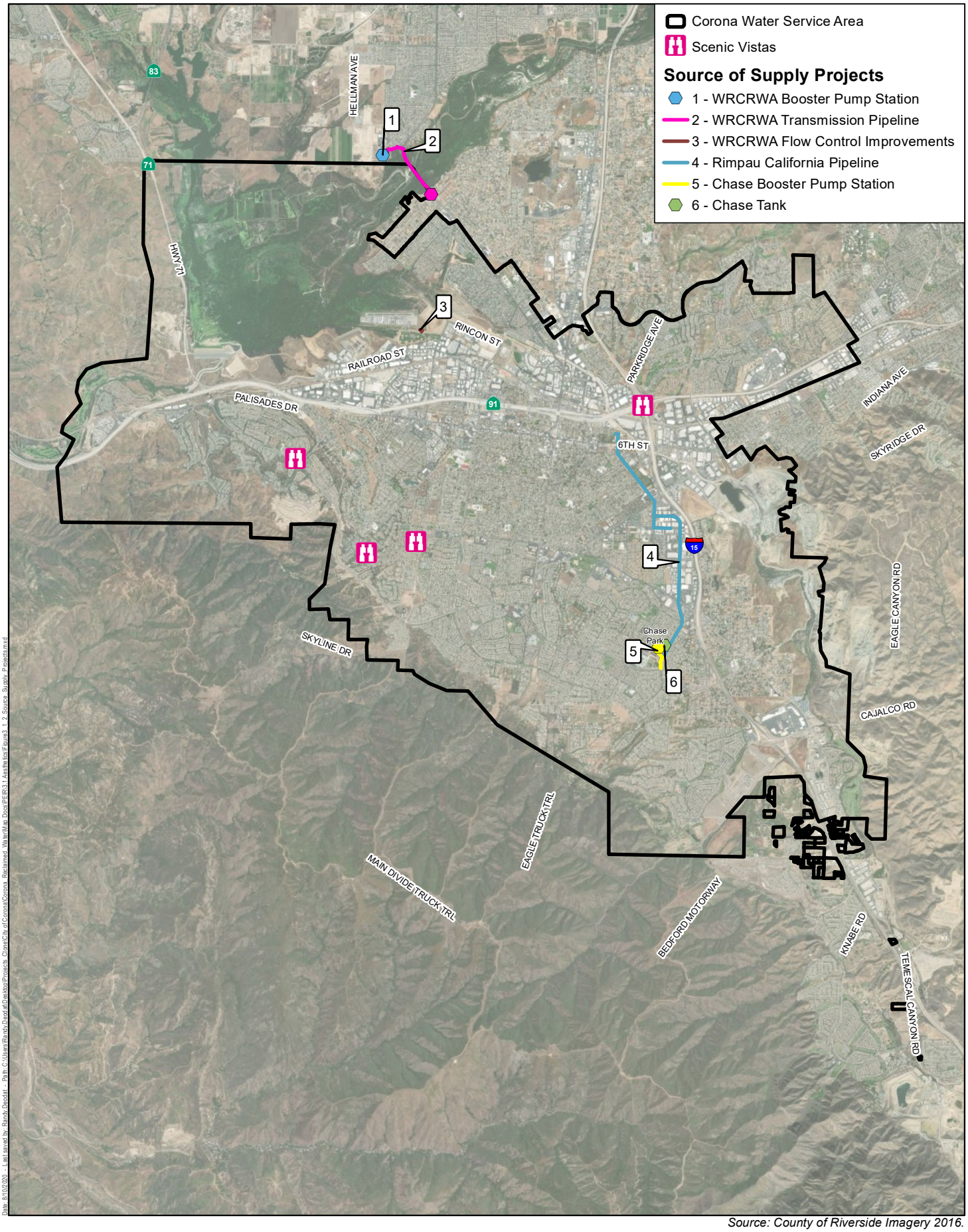
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Figure 3.1-1

Scenic Corridors

City of Corona 2018 Reclaimed Water Master Plan

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Source: County of Riverside Imagery 2016.

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Figure 3.1-2

Scenic Vistas

City of Corona 2018 Reclaimed Water Master Plan

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3.2 Agriculture and Forestry Resources

This section discusses the potential impacts to agriculture and forestry resources in the City of Corona's (City's) water service area that may result from the implementation of the 2018 Reclaimed Water Master Plan (project or 2018 RWMP). The analysis in this section is based in part on the following information: City of Corona 2020–2040 General Plan (City of Corona 2020).

3.2.1 Environmental Setting

This section describes the environmental setting as it relates to agriculture and forestry services for the water service area. The project proposes reclaimed water facilities in various locations throughout the water service area.

3.2.1.1 Regional Environmental Setting

Agricultural Uses

Farmland

Historically, agricultural preserves and uses covered a significant portion of the City. Figure 3.2-1, Agricultural Resources, depicts the location of agricultural resources in the City and its water service area according to the State of California's Farmland Mapping and Monitoring Program (FMMP). The vast majority of productive farmland is in the southwestern area of the City, and the majority of grazing land is east of Interstate 15 in the County of Riverside (County). Table 3.2-1 summarizes acreage of agricultural resources in the City and the surrounding jurisdictions.

Table 3.2-1. Agricultural Resources in the Water Service Area

Agricultural Lands	City of Corona (acres)	Surrounding Jurisdictions (acres)	Total
Prime Farmland	98	18	116
Farmland of Statewide Importance	24	49	73
Unique Farmland	86	401	487
Farmland of Local Importance	1,214	861	2,075
Grazing Land	1,762	4,163	5,925
Total	**3,183**	**5,491**	**8,674**
Agricultural Preserves	NA	331	331

Source: County of Riverside 2019.
Notes: NA = not applicable

Prime Farmland is farmland with the best combination of physical and chemical features (soil quality, growing season, moisture supply) able to support long-term agricultural production. This land has the soil quality, growing seasons, and moisture needed to produce sustained high yields.

Farmland of Statewide Importance is farmland other than Prime Farmland with a good combination of physical and chemical characteristics but with minor shortcomings, such as greater slopes or less ability to store soil moisture. The land must also have been under irrigated production within past 4 years.

Unique Farmland is land consisting of lesser quality soils used to produce the state's leading agricultural crops. This land is usually irrigated but may include nonirrigated orchards or vineyards as found in some climatic zones. The land must also have been under irrigated production within the past 4 years.

Farmland of Local Importance is land that would be classified as Prime Farmland or Farmland of Statewide Importance but lacks available irrigation water. This land could be planted with dryland crops of barley, oats, and wheat and includes land in production of major crops, dairy lands, or land within agricultural zones or contracts.

Grazing Land is land on which existing vegetation is suited to the grazing of livestock. The minimum mapping unit for grazing land is 40 acres. These lands compose the majority of the agricultural resources in the City.

Forest Land and Timberland

The City's western border is shared by the Cleveland National Forest, which is managed by the U.S. Forest Service. County portions of the Cleveland National Forest reach moderate elevations of 2,000 to 3,000 feet above mean sea level and generally do not support large expanses of mature conifers.

The City's hillside and canyons contain a mix of riparian forest, southern sycamore alder riparian woodland, and southern coast live oak riparian forest. Montane coniferous forest resources are also in several locations of the City, including the westernmost Sierra del Oro area, Eagle Valley, western interface with the Cleveland National Forest, and portions of El Cerrito. The Prado Basin also contains areas with forestland, riparian scrub, and woodland forest.

Isolated woodlands that could fall under the definition of forest land per California Public Resource Code, Section 12220(g), are in Temescal Canyon, at the western boundary of the City (adjacent to Cleveland National Forest), and west of Coronita. Additionally, riparian scrub, woodland, and forest lands are predominately found in El Cerrito, Temescal Canyon, and the northern portion of the City, east of the Prado Basin. The woodlands are primarily on water and flood control, vacant, open space, and natural open space lands. Scattered forest in the California Department of Forestry and Fire Protection data also shows greater concentrations of woodlands north and east from the City.

Williamson Act Contract

The Williamson Act establishes a mechanism for saving agricultural land by allowing counties to create agricultural preserves and then to enter into contracts with landowners in those preserves. A Williamson Act contract obligates the landowner to maintain the land as agricultural land for 10 or more years with resulting tax benefits. Absent contrary action, each year the contract renews for an additional year so that the use restrictions are always in place for the next 9 to 10 years. Several methods to terminate a Williamson Act contract exist, including nonrenewal and cancellation. The procedures for cancelling a Williamson Act contract require that the cancellation be in the public interest.

On February 22, 2006, the Williamson Act contract for a preserve in the City was terminated, and currently, no Williamson Act contracts exist in the water service area.

Other Agricultural Uses

Historically, agricultural preserves and uses occurred in a significant portion of the City and was the livelihood for many of the early settlers in the City. The City no longer has any agricultural preserves within its incorporated boundary. However, several large preserves remain adjacent to its eastern boundary, most notably in Eagle Valley. While large-scale agriculture no longer exists in the City, urban agriculture, such as community gardens and backyard farming, has become a more popular practice.

3.2.2 Regulatory Setting

This section describes the federal, state, and local regulatory framework adopted to protect agriculture and forestry services.

3.2.2.1 Federal

There are no applicable federal regulations that apply to agriculture and forestry services.

3.2.2.2 State

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 9-year termination process, during which the annual tax assessment for the property gradually increases.

California Government Code, Section 51104(g)

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

- **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** means an area that has been zoned pursuant to Sections 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."

County boards of supervisors may designate areas of timberland preserve, referred to as "Timberland Production Zones," which restrict the land's use to the production of timber for an initial 10-year term in return for lower property taxes.

California Public Resources Code, Section 12220(g)

California Public Resources Code, Section 12220(g) defines "forest land" for the purposes of CEQA. According to the code, "forest land" is 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.

Farming Mapping and Monitoring Program

The California Natural Resources Agency is charged with restoring, protecting, and maintaining the state's natural, cultural, and historic resources. Within it, the California Department of Conservation provides technical services and information to promote informed land use decisions and sound management of the state's natural resources. The California Department of Conservation manages the FMMP, which supports agriculture throughout California by developing maps and statistical data for analyzing land use impacts to farmland. Every 2 years,

the FMMP publishes a field report for each county in the state. The most recent field report for the County was published in 2016.

Forest Taxation Reform Act and Z'berg-Nejedly Forest Practice Act

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.

3.2.2.3 Local

City of Corona 2020–2040 General Plan

The following goals and policies in the City of Corona 2020–2040 General Plan are relevant to agriculture and forestry services (City of Corona 2020).

Environmental Resources Element

Goal ER-8. Protection of forest and vegetation resources in the City of Corona.

Policy ER-8.1. Cooperate with federal and state agencies to achieve the sustainable conservation of forest lands as a means of providing open space and protecting natural resources and MSHCP [Multiple Species Habitat Conservation Plan] habitat.

Policy ER-8.2. Support conservation programs to reforest privately held forest lands.

City of Corona Municipal Code

The Corona Municipal Code has an Agricultural Zone defined by Chapter 17.06 and two overlay zones—Agricultural Products (AP) and Animal Keeping and Agricultural Operation (AA)—defined by Chapter 17.62 that allow for agricultural uses. The Agricultural Zone was developed to accommodate the agricultural land uses that existed in the City before urbanization. The Agricultural Products (AP) Overlay Zone was originally developed during the early 1980s to allow the retail sale of agricultural products on land where the product is grown and has an Agricultural Zone. The Animal Keeping and Agricultural Operation (AA) Overlay Zone was created in 2013 when the City attempted to annex Temescal Valley. Following is more information on the overlay zones:

- The Agricultural Zone is intended as a district for general agricultural purposes, with appropriate single-family residences and customary accessory buildings.
- The Agricultural Products (AP) Overlay Zone allows for an interim use of land for the retail sales of plant goods, fruits, vegetables, and associated products that conform to the Agricultural Zone that will provide improvements in conformance with the general health, safety, and general welfare of the City. This zoning designation will continue to allow for existing agricultural land uses.

- The Agricultural Operation (AA) Overlay Zone accommodates the rural-residential properties in Temescal Valley that were annexed to the City. The Agricultural Operation (AA) Overlay Zone allows for field crops, vegetable gardening, greenhouses, and tree crops; noncommercial keeping of certain animals associated with more rural agricultural land uses (cattle, sheep, horses); and other ancillary uses consistent with the overlay zone.

Riverside County General Plan

The Riverside County General Plan contains policies to support agricultural uses. The Open Space Element includes policies to preserve Prime Farmland; encourage compatible agricultural uses; and work with agencies to reduce soil erosion, improve soil quality, address pest management, encourage the conservation of forestlands and natural habitats in the Western Riverside County Multi-Species Habitat Conservation Plan, and conserve the oak tree resources in the County. Land Use Element policies encourage viable agricultural uses through land use regulation, Williamson Act contracts, the County's right-to-farm ordinance, tax incentive programs, and other land use programs.

The Temescal Canyon Area Plan (TCAP) contains goals and policies to support efforts to conserve soils needed for plants and habitat. These include supporting the conservation of rocky soils coinciding with coastal sage scrub (TCAP 19.15), preservation of clay soils for sensitive plant species (TCAP 19.6), and conservation of sandy soils for chaparral (TCAP 19.7). The TCAP also has a land use designation for row crops, nurseries, dairies, poultry farms, processing plants, and other related uses. Limited agricultural uses are allowed in the many rural and open space designations. Although County policies address agricultural uses, the TCAP does not have separate policies that encourage or preserve existing agricultural land uses.

3.2.3 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a significant impact related to agriculture and forestry services would occur if the project would (CEQA Guidelines, Section 15000 et seq.):

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.
2. Conflict with existing zoning for agricultural use, or a Williamson Act contract.
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)).
4. Result in the loss of forest land or conversion of forest land to non-forest use.
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.

3.2.4 Environmental Analysis

3.2.4.1 Threshold 1: Conversion of Farmland

Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

Impact Analysis

The project proposes to expand the existing reclaimed water services in the water service area. Project components include water storage tanks, pump stations, and distribution pipelines. Project components would be in areas with limited classified farmland and either be confined to existing facilities or easements or in existing rights-of-way (ROWs). Implementation of the project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the FMMP of the California Resources Agency, to non-agricultural use.

Level of Significance Before Mitigation

The implementation of the project would not convert farmland to non-agricultural uses. No impact would occur.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Because no mitigation measures are required, no impacts would occur.

3.2.4.2 Threshold 2: Conflict with Agricultural Zone or Williamson Act Contract

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

Impact Analysis

The project proposes to expand the existing reclaimed water services in the water service area. Project components include water storage tanks, pump stations, and distribution pipelines that are primarily in or adjacent to existing facilities or ROWs. In addition, no Williamson Act contract lands are in the water service area. Consequently, implementation of the project would not conflict with existing zoning for agricultural use or a Williamson Act contract.

Level of Significance Before Mitigation

Implementation of the project would not conflict with existing zoning for agricultural use or Williamson Act contract. No impacts would occur.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Because no mitigation measures are required, no impacts would occur.

3.2.4.3 Threshold 3: Conflict with Zoning for Forest Land or Timberland

Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?

Impact Analysis

The project proposes to expand the existing reclaimed water services in the water service area. As shown on Figure 3.4-3, Critical Habitat, in Section 3.4, Biological Resources, oak woodland is dominated by coast live oak woodland and occurs in the southwestern portion of the water service area on the eastern side of the Santa Ana Mountains. In addition, there are no current or planned fixed commercial timber operations subject to a Timber Harvesting Plan in southwest Riverside County, and no timber production zones in the water service area.

Project components include water storage tanks, pump stations, and distribution pipelines and are primarily in or adjacent to existing facilities or ROWs. Implementation of projects identified in the 2018 RWMP would not conflict with existing zoning for, or cause rezoning of, forest land or timberland.

Level of Significance Before Mitigation

Implementation of the project would not conflict with existing zoning for, or cause rezoning of, forest land (as defined in California Public Resources Code, Section 12220[g]), timberland (as defined by California Public Resources Code, Section 4526), or timberland zoned Timberland Production (as defined by California Government Code, Section 51104[g]). No impact would occur.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Because no mitigation measures are required, no impacts would occur.

3.2.4.4 Threshold 4: Loss or Conversion of Forest Land

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

Impact Analysis

The project proposes to expand the existing reclaimed water services in the water service area. Project components include water storage tanks, pump stations, and distribution pipelines primarily in or adjacent to existing facilities or ROWs. Therefore, the project would not result in substantial land disturbance that could result in the loss or conversion of forest land to non-forest uses.

Level of Significance Before Mitigation

Implementation of the project would not result in the loss of forest land or conversion of forest land to non-forest use. No impact would occur.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Because no mitigation measures are required, no impacts would occur.

3.2.4.5 Threshold 5: Other Changes to the Existing Environment

Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

Impact Analysis

The project proposes to expand the existing reclaimed water services in the water service area. Project components include storage tanks, pump stations, and distribution pipelines primarily in or adjacent to existing facilities or ROWs. Therefore, it would not result in substantial land disturbance. Implementation of the project would not result in changes in the existing environment that could result in conversion of farmland to non-agricultural use or conversion of forest land to non-forest use.

Level of Significance Before Mitigation

Implementation of the project would not involve other changes in the existing environment that, due to their location or nature, could result in conversion of farmland to non-agricultural use or conversion of forest land to non-forest use. No impact would occur.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Because no mitigation measures are required, no impacts would occur.

3.2.5 Cumulative Impacts

3.2.5.1 Cumulative Threshold 1: Conversion of Farmland

The geographic context for the analysis of cumulative impacts related to the potential conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance encompasses the water service area. Development of cumulative projects could result in the permanent conversion of classified farmland. The associated loss of agricultural production would be a significant impact. However, construction of projects identified in the 2018 RWMP would be in areas with limited classified farmland. Project components would be primarily confined to existing facilities or existing ROWs. Therefore, no classified agricultural lands would be converted to non-agricultural uses as a result of the implementation of the project. The project's contribution would not be cumulatively considerable.

3.2.5.2 Cumulative Threshold 2: Conflict with Agricultural Zone or Williamson Act Contract

The geographic context for the analysis of cumulative impacts related to the conflict with the Williamson Act Zone encompasses City's water service area. Development of cumulative projects could conflict existing zoning or the Williamson Act Zone, which would result in a significant impact to agricultural resources in the region. However, construction of projects identified in the 2018 RWMP would not be on land designated in a Williamson Act contract. Project components that are on or adjacent to agricultural lands would be confined to existing facilities or ROWs and would not result in a conflict. The project's contribution would not be cumulatively considerable.

3.2.5.3 Cumulative Threshold 3: Conflict with Zoning for Forest Land or Timberland

The geographic context for the analysis of cumulative impacts related to the conflict with zoning for forestland or timberland encompasses the water service area. There are no current or planned fixed commercial timber operations subject to a Timber Harvesting Plan in the water service area. Therefore, development of cumulative projects would not result in the loss or conversion of timberland to non-forest uses. The project's contribution would not be cumulatively considerable.

3.2.5.4 Cumulative Threshold 4: Loss or Conversion of Forest Land

The geographic context for the analysis of cumulative impacts related to the conflict with zoning for forestland or timberland encompasses the water service area. Due to the limited forest land in the water service area, development of cumulative projects would not result in loss or conversion of timberland to non-forest uses. The project's contribution would not be cumulatively considerable.

3.2.5.5 Cumulative Threshold 5: Other Changes to the Existing Environment

The geographic context for the analysis of cumulative impacts related to the potential conversion of farmland encompasses the water service area. Development of cumulative projects could result other changes to the existing environmental that could result in the permanent conversion of farmland. The associated loss of agricultural production would be a significant impact. However, construction of projects identified in the 2018 RWMP would be in areas with limited farmland. Project components that are on or adjacent to agricultural lands would be confined to existing facilities or existing ROWs. Therefore, no classified agricultural lands would be converted to non-agricultural uses as a result of the implementation of the project. The project's contribution would not be cumulatively considerable.

3.2.6 Conclusion

Implementation of the project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the FMMP of the California Resources Agency to non-agricultural use. No direct or cumulative impacts would occur.

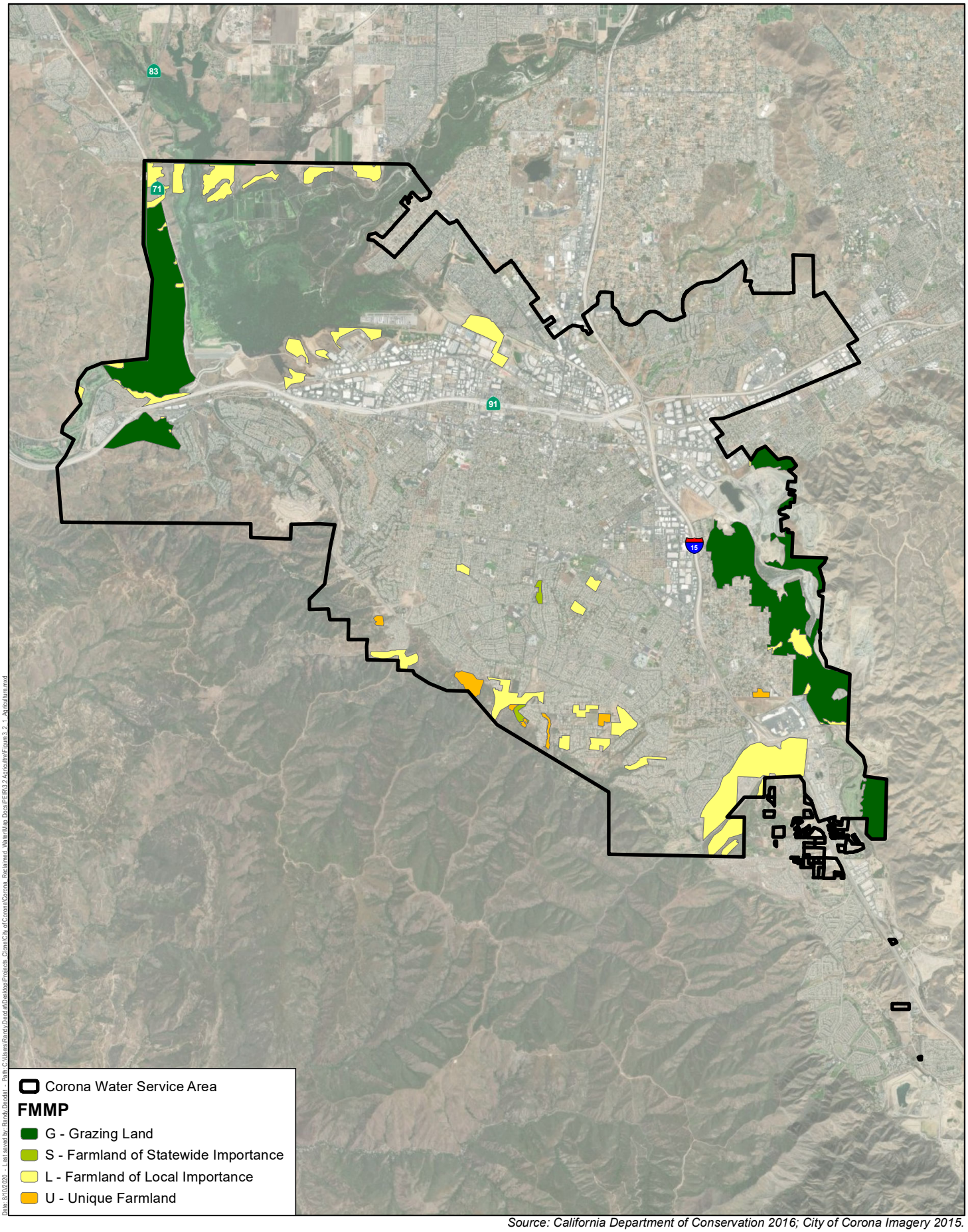
Implementation of the project would not convert Williamson Act land to non-agricultural use. No direct or cumulative impacts would occur.

Implementation of the project would not conflict with existing zoning for, or cause rezoning of, forest land (as defined in California Public Resources Code, Section 12220[g]), timberland (as defined by California Public Resources Code, Section 4526), or timberland zoned Timberland Production (as defined by California Government Code, Section 51104[g]). No direct or cumulative impacts would occur.

Implementation of the project would not result in the loss of forest land or conversion of forest land to non-forest use. No direct or cumulative impacts would occur.

Implementation of the project would not involve other changes in the existing environment that, due to their location or nature, could result in conversion of farmland to non-agricultural use or conversion of forest land to non-forest use. No direct or cumulative impacts would occur.

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Source: California Department of Conservation 2016; City of Corona Imagery 2015.

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Figure 3.2-1

Agricultural Resources

City of Corona 2018 Reclaimed Water Master Plan

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3.3 Air Quality

This section describes the potential impacts to air quality in the City of Corona's (City's) water service area that may result from the implementation of the 2018 Reclaimed Water Master Plan (2018 RWMP or project). The analysis in this section is based in part on the following information: City of Corona Reclaimed Water Master Plan Air Quality Technical Memorandum prepared by Harris & Associates (2020) for the project (Appendix B), City of Corona General Plan Update Technical Background Report (City of Corona 2019), and City of Corona Reclaimed Water Master Plan Environmental Impact Report (City of Corona 2001).

3.3.1 Environmental Setting

This section describes the environmental setting as it relates to air quality for the water service area. The project proposes reclaimed water facilities in various locations throughout the water service area.

3.3.1.1 Climate

The proposed project is in the South Coast Air Basin (SCAB). The SCAB is an area of approximately 6,600 square miles that encompasses all of Orange County and the non-desert portions of the Counties of Los Angeles, Riverside, and San Bernardino. The SCAB and water service area's climate is technically referred to as an interior valley sub-climate of Southern California's Mediterranean climate and is characterized by warm summers, mild winters, infrequent rainfall, moderate breezes, and generally mild weather (City of Corona 2001).

Climate is determined by variations in temperature, rainfall, humidity, and prevailing winds. Average temperature in the water service area is 65 degrees Fahrenheit (°F), with an average low temperature of 50°F in the winter and high temperature of over 80°F in the summer. Over the course of the year, the temperature typically varies from 42°F to 90°F and is rarely below 34°F or above 99°F. Almost all annual rainfall in the water service area occurs between October and March. Average rainfall in the water service area averages 12.5 inches per year; however, rainfall ranging from 3 to 35 inches per year has been recorded in the water service area vicinity. The annual humidity is approximately 57 percent. Daytime winds are from the west–northwest at 6–8 miles per hour as air moves locally through the area and regionally onshore from the Pacific Ocean to the Mojave Desert interior of Southern California (City of Corona 2001).

The water service area experiences strong temperature inversions characteristic of the SCAB. In the summer, the coastal areas of the basin experience marine/subsidence inversion; in the winter, radiation inversion occurs when cold air from the surrounding mountains sinks to the valley floor. These topographical and meteorological conditions of the SCAB strongly influence air quality. The calm winds flowing from west to northwest combined with storm temperature inversions

determine the regional pattern of air pollution transport and control the rate of pollution dispersion (City of Corona 2001).

Daytime winds in the SCAB allow for good local mixing. However, airflow across the populated area of the Los Angeles Basin brings polluted air into the County of Riverside in the afternoon. At night, air drains off surrounding mountains and then pools on the valley floor in the water service area. These breezes are cool and clean but allow for stagnation of air in the water service area vicinity. Strong temperature inversions limit the vertical depth through which pollution can be mixed. The marine/subsidence inversion allows for good local mixing but acts like a lid over the SCAB. The radiation inversions, in conjunction with calm winds, trap pollutants such as automobile exhaust near the surface (City of Corona 2001).

3.3.1.2 Air Pollutants and Effects

Air pollutant emissions in the SCAB are generated by stationary and mobile sources. Stationary sources can be divided into two major subcategories: point and area sources. Point sources occur at an identified location and are usually associated with manufacturing and industry. Examples of point sources are boilers or combustion equipment that produce electricity or generate heat. Area sources are widely distributed and produce many small emissions. Examples of area sources include residential and commercial water heaters and lawn mowers. Mobile sources refer to emissions from motor vehicles, including tailpipe and evaporative emissions, and are classified as either on-road or off-road. On-road sources may be legally operated on roadways and highways. Off-road sources include aircraft, ships, trains, racecars, and self-propelled construction equipment. Mobile sources account for the majority of air pollutant emissions in the SCAB (SCAQMD 2017a).

The criteria air pollutants pertinent to the analysis in this Program Environmental Impact Report are carbon monoxide (CO), nitrogen oxides (NO_x), ozone (O_3), particulate matter (respirable [PM_{10}] and fine particulate matter [$PM_{2.5}$]), and sulfur dioxide (SO_2). The following describes the health effects for each of these criteria air pollutants.

Carbon Monoxide (CO)

CO is a colorless, odorless, poisonous gas produced by combustion processes, primarily mobile sources. When CO gets into the body, it combines with chemicals in the blood and prevents blood from providing oxygen to cells, tissues, and organs. Because the body requires oxygen for energy, high-level exposure to CO can cause serious health effects, including death (USEPA 2016).

Nitrogen Oxides (NO_x)

NO_x is a general term pertaining to compounds including nitric oxide (NO), nitrogen dioxide (NO_2), and other oxides of nitrogen. NO_x is produced from burning fuels, including gasoline,

diesel, and coal. NO_x reacts with volatile organic compounds (VOCs) to form ground-level O_3 (smog). NO_x is linked to a number of adverse respiratory systems effects (USEPA 2019a).

Ozone (O_3)

Ground-level O_3 is not emitted directly into the air but is formed by chemical reactions of "precursor" pollutants (NO_x and VOCs) in the presence of sunlight. Major emissions sources include NO_x and VOC emissions from industrial facilities and electric utilities, motor vehicle exhaust, gasoline vapors, and chemical solvents. O_3 can trigger a variety of health problems, particularly for sensitive receptors, including children, older adults, and people of all ages who have lung diseases, such as asthma (USEPA 2018).

Particulate Matter (PM_{10} and $PM_{2.5}$)

Particulate matter includes dust, metals, organic compounds, and other tiny particles of solid materials that are released into and move around the air. Particulates are produced by many sources, including the burning of diesel fuels by trucks and buses, industrial processes, and fires. Particulate pollution can cause nose and throat irritation and heart and lung problems. Particulate matter is measured in microns, which are 1 millionth of a meter in length (or 1 thousandth of a millimeter). PM_{10} is small (i.e., respirable) particulate matter measuring no more than 10 microns in diameter, while $PM_{2.5}$ is fine particulate matter measuring no more than 2.5 microns in diameter (CARB 2020a).

Sulfur Dioxide (SO_2)

SO_2 is formed primarily by the combustion of sulfur-containing fossil fuels, especially at power plants and industrial facilities. SO_2 is linked to a number of adverse effects on the respiratory system (USEPA 2019b).

Toxic Air Contaminants

Toxic air contaminants (TACs) are generated by a number of sources, including stationary sources such as dry cleaners, gas stations, combustion sources, and laboratories; mobile sources such as automobiles; and area sources such as landfills. The two primary emissions of concern regarding health effects for land development projects are CO and diesel particulate matter (DPM). The health effects of CO are described previously. DPM is a mixture of many exhaust particles and gases that is produced when an engine burns diesel fuel. Compounds found in diesel exhaust are carcinogenic. Some short-term (acute) effects of diesel exhaust exposure include eye, nose, throat, and lung irritation and headaches and dizziness. Long-term exposure is linked to increased risk of cardiovascular, cardiopulmonary, and respiratory disease and lung cancer (OSHA 2013).

3.3.1.3 Existing Ambient Air Quality

Existing ambient air quality, historical trends, and projections are best documented by measurements made by the South Coast Air Quality Management District (SCAQMD). The City is in Source Receptor Area 22, Riverside Valley (Corona/Norco Area). The air quality monitoring station closest to the City is the Norco-Norconian Monitoring Station. The station only monitors PM_{10}. Additional data for O_3, NO_2, and $PM_{2.5}$ are provided by the Riverside Rubidoux Monitoring Station. Data for CO and SO_2 are not available for recent years at nearby stations. The most current 2 years of data monitored at these stations are included in Table 3.3-1.

Table 3.3-1. Ambient Air Quality Monitoring Summary

Pollutant/Standard	Number of Days Threshold Were Exceeded and Maximum Levels During Such Violations	
	2017	2018
O_3		
State 1-Hour ≥ 0.09 ppm (days exceed threshold)	47	22
State 8-hour ≥ 0.07 ppm (days exceed threshold)	82	57
Federal 8-Hour > 0.07 ppm (days exceed threshold)	81	53
Max. 1-Hour Conc. (ppm)	0.145	0.123
Max. 8-Hour Conc. (ppm)	0.118	0.101
NO_2		
State 1-Hour ≥ 0.18 ppm (days exceed threshold)	0	0
Federal 1-Hour ≥ 0.100 ppm (days exceed threshold)	0	0
Max. 1-Hour Conc. (ppb)	0.0630	0.0554
PM_{10}		
State 24-Hour > 50 µg/m³ (days exceed threshold)	8	3
Federal 24-Hour > 150 µg/m³ (days exceed threshold)	0	0
Max. 24-Hour Conc. (µg/m³)	85.1	100.9
$PM_{2.5}$		
Federal 24-Hour > 35 µg/m³ (days exceed threshold)	7	3
Max. 24-Hour Conc. (µg/m³)[1]	50.3	66.3

Source: CARB 2020b.

Notes: µg/m³ = microgram per liter; NO_2 = nitrogen dioxide; O_3 = ozone; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; ppb = parts per billion; ppm = parts per million

[1] Data include exceptional events, such as wildfires.

3.3.2 Regulatory Setting

This section describes the federal, state, and local regulatory framework adopted to protect air quality.

3.3.2.1 Federal

Clean Air Act

The Clean Air Act (CAA) of 1970 is the comprehensive federal law that regulates air emissions from stationary and mobile sources. The CAA authorizes the U.S. Environmental Protection Agency (USEPA) to establish National Ambient Air Quality Standards (NAAQS) to protect public health and public welfare and to regulate emissions of hazardous air pollutants. Current NAAQS are listed in Table 3.3-2. The primary standards listed below have been set at levels intended to protect public health. The USEPA has classified air basins (or portions thereof) as being in "attainment," "nonattainment," or "unclassified" for each criteria air pollutant based on whether or not the NAAQS have been achieved. If an area is designated unclassified, it is because inadequate air quality data were available as a basis for a nonattainment or attainment designation. The USEPA classifies the SCAB as in attainment for the federal CO, NO_2, lead, PM_{10}, and SO_2 standards. It is classified as nonattainment for $PM_{2.5}$ and O_3. Table 3.3-3 lists the attainment status of the SCAB for criteria pollutants.

Table 3.3-2. National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]	Federal Standards[2]	
		Concentration[3]	Primary[3, 4]	Secondary[3, 5]
O_3[6]	1-hour	0.09 ppm (180 µg/m³)	—	Same as Primary Standards
	8-hour	0.070 ppm (137 µg/m³)	0.070 ppm (137 µg/m³)	
PM_{10}[7]	24 Hour	50 µg/m³	150 µg/m³	Same as Primary Standards
	Annual Arithmetic Mean	20 µg/m³	—	
$PM_{2.5}$[7]	24 Hour	—	35 µg/m³	Same as Primary Standards
	Annual Arithmetic Mean	12 µg/m³	12 µg/m³	15 µg/m³
CO	8-hour	9 ppm (10 mg/m³)	9 ppm (10 mg/m³)	None
	1-hour	20 ppm (23 mg/m³)	35 ppm (40 mg/m³)	
NO_2[8]	Annual Arithmetic Mean	0.030 ppm (57 µg/m³)	0.053 ppm (100 µg/m³)	Same as Primary Standard
	1-hour	0.18 ppm (470 mg/m³)	100 ppb (188 µg/m³)	
SO_2[9]	Annual Arithmetic Mean	—	0.030 ppm (for certain areas)	—
	24 Hour	0.04 ppm (105 µg/m³)	0.14 ppm (for certain areas)	—
	3 Hour	—	—	0.5 ppm (1300 µg/m³)
	1-hour	0.25 ppm (655 µg/m³)	75 ppb (196 µg/m³)	—
Lead[10, 11]	30 Day Average	1.5 µg/m³	—	—
	Calendar Quarter	—	1.5 µg/m³ (for certain areas)	Same as Primary Standard

Table 3.3-2. National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]	Federal Standards[2]	
		Concentration[3]	Primary[3, 4]	Secondary[3, 5]
	Rolling 3-Month Average[7]	—	0.15 µg/m^3	
Visibility-Reducing Particles[12]	8-hour	See Footnote 12.	No Federal Standards	
Sulfates	24 Hour	25 µg/m^3	No Federal Standards	
Hydrogen Sulfide	1-hour	0.03 ppm (42 µg/m^3)	No Federal Standards	
Vinyl Chloride[10]	24 Hour	0.01 ppm (26 µg/m^3)	No Federal Standards	

Source: CARB 2020b.

Notes: µg/m^3 = micrograms per kilogram; CO = carbon monoxide; NO_2 = nitrogen dioxide; O_3 = ozone; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; ppb = parts per billion; ppm = parts per million; SO_2 = sulfur dioxide

[1] California standards for O_3, CO, SO_2 (1-hour and 24-hour), NO_2, PM_{10}, $PM_{2.5}$, and visibility-reducing particles are values that are not to be exceeded. The standards for sulfates, lead, hydrogen sulfide, and vinyl chloride standards are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[2] National standards (other than O_3, particulate matter, and those based on annual averages) are not to be exceeded more than once per year. The O_3 standard is attained when the fourth highest 8-hour concentration measured at each site in 1 year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than 1. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact the USEPA for further clarification and current national policies.

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

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

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

[6] On October 1, 2015, the national 8-hour O_3 primary and secondary standards were lowered from 0.075 to 0.070 ppm.

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

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

[9] On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

Note that the 1-hour national standard is in units of ppb. California standards are in units of ppm. To directly compare the 1-hour national standard to the California standard, the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

[10] The California Air Resources Board (CARB) had identified lead and vinyl chloride as TACs with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[11] The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 µg/m^3 as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

[12] In 1989, CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are “extinction of 0.23 per kilometer” and “extinction of 0.07 per kilometer” for the statewide and Lake Tahoe Air Basin standards, respectively.

Table 3.3-3. South Coast Air Basin Attainment Status

Pollutant	California Standards	Federal Standards
O_3 1-Hour	**Nonattainment**	No Federal Standard
O_3 8-Hour	**Nonattainment (Extreme)**	**Nonattainment (Extreme)**
PM_{10}	**Nonattainment (Serious)**	Attainment/Maintenance
$PM_{2.5}$	**Nonattainment**	Nonattainment (Serious)
CO	Attainment	Attainment
NO_2	Attainment	Attainment/Maintenance
Lead	Attainment	Nonattainment (Los Angeles County only[1])
SO_2	Attainment	Attainment
All others	Attainment/Unclassified	Attainment/Unclassified

Source: SCAQMD 2017b.

Notes: CO = carbon monoxide; NO_2 = nitrogen dioxide; O_3 = ozone; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; SO_2 = sulfur dioxide

Bold = Nonattainment pollutant

[1] In 2010, the Los Angeles portion of the SCAB was designated nonattainment for lead under the new federal and existing state ambient air quality standards as a result of large industrial emitters. Remaining areas within the SCAB are unclassified.

The CAA requires states to develop a plan to attain and maintain the NAAQS in all areas of the country and a specific plan to attain the standards for each area designated nonattainment for an NAAQS. These plans, known as State Implementation Plans (SIPs), are developed by state and local air quality management agencies and submitted to the USEPA for approval. The SIP includes strategies and control measures to attain the NAAQS by deadlines established by the CAA. The SIP is periodically modified to reflect the latest emissions inventories, plans, and rules and regulations of air basins as reported by the agencies with jurisdiction over them.

3.3.2.2 State

Air Quality and Land Use Handbook: A Community Health Perspective

CARB has also developed the Air Quality and Land Use Handbook: A Community Health Perspective to provide guidance on land use compatibility with sources of TACs (CARB 2005). These sources include freeways and high-traffic roads, commercial distribution centers, rail yards, refineries, dry cleaners, gasoline stations, and industrial facilities. The handbook is not a law or adopted policy but offers advisory recommendations for the siting of sensitive receptors near uses associated with TACs. The handbook indicates that land use agencies have to balance other considerations, including housing and transportation needs, economic development priorities, and other quality-of-life issues.

California Ambient Air Quality Standards

CARB, a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and state air pollution control programs in California. The CAA allows states to adopt ambient air quality standards and other regulations if they are at least as stringent as federal standards. California has adopted ambient standards (the California Ambient Air Quality Standards [CAAQS]) that are equal to or stricter than the federal standards for six criteria air pollutants. The CAAQS are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations and provided in Table 3.3-2. Similar to the federal CAA, areas have been designated as attainment, nonattainment, or unclassified with respect to the state ambient air quality standards. The SCAB is in nonattainment with the CAAQS for O_3, PM_{10}, and $PM_{2.5}$. The SCAB is designated as an attainment area for the state CO, NO, SO_2, lead, and sulfates standards.

Diesel Risk Reduction Plan

CARB adopted a Diesel Risk Reduction Plan, which recommends control measures to achieve a DPM reduction of 85 percent by 2020 from year 2000 levels. Recent regulations and programs include the low-sulfur diesel fuel requirement and more stringent emission standards for heavy-duty diesel trucks and off-road in-use diesel equipment. As emissions are reduced, it is expected that the risks associated with exposure to the emissions will also be reduced.

Toxic Air Contaminant Regulations

California regulates TACs primarily through the Toxic Air Contaminant Identification and Control Act (Assembly Bill 1807) (Tanner Act) and the Air Toxics "Hot Spots" Information and Assessment Act (Assembly Bill 2588) (Hot Spots Act). The Tanner Act sets forth a formal procedure for CARB to designate substances as TACs. This includes research, public participation, and scientific peer review before CARB designates a substance as a TAC. The Hot Spots Act requires existing facilities that emit toxic substances above specified levels to (1) prepare a toxic emission inventory, (2) prepare a risk assessment if emissions are significant (i.e., 10 tons per year or on the air district's Hot Spots Risk Assessment List), (3) notify the public of significant risk levels, and (4) prepare and implement risk reduction measures.

3.3.2.3 Local

South Coast Air Quality Monitoring District

The SCAQMD is the air pollution control agency for Orange County and the urban portions of the Counties of Los Angeles, Riverside, and San Bernardino. The SCAQMD is the agency responsible for improving air quality in the SCAB and ensuring that the National and California AAQS are attained and maintained. It is responsible for preparing the Air Quality Management Plan (AQMP)

for the SCAB in coordination with the Southern California Association of Governments (SCAG). Since 1979, a number of AQMPs have been prepared.

On March 3, 2017, the SCAQMD adopted the 2016 AQMP, an update to the 2012 AQMP. The 2016 AQMP addresses strategies and measures to attain the following NAAQS:

- 2008 8-hour O_3 standard by year 2031
- 2012 annual $PM_{2.5}$ standard by year 2025
- 2006 24-hour $PM_{2.5}$ standard by year 2019
- 1997 8-hour O_3 standard by year 2023
- 1979 1-hour O_3 standard by year 2022

The 2016 AQMP is composed of stationary and mobile source emission reductions from regulatory control measures, incentive-based programs, co-benefits from climate programs, mobile source strategies, and reductions from federal sources such as aircrafts, locomotives, and ocean-going vessels. The 2016 AQMP includes 15 measures to reduce mobile source emissions. These measures include identifying actions to mitigate and reduce emissions associated with new development and redevelopment projects; to reduce facility-based (i.e., commercial marine ports, rail yards, and intermodal facilities; warehouse and distribution centers; and commercial airports, in addition to new and redevelopment projects), on-road, and off-road mobile sources of emissions; and to identify the benefits of incentive programs in reducing emissions.

The SCAQMD is also responsible for establishing and enforcing local air quality rules and regulations that address the requirements of federal and state air quality laws. Development projects in the City may be subject to the following SCAQMD rules (as well as others).

Rule 401, Visible Emissions. Prevents the discharge of pollutant emissions from an emissions source that results in visible emissions. Specifically, the rule prohibits the discharge of any air contaminant into the atmosphere by a person from any single source of emission for a period or periods aggregating more than 3 minutes in any 1 hour that is as dark as or darker than designated No. 1 on the Ringelmann Chart, as published by the U.S. Bureau of Mines.

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

Rule 403, Fugitive Dust. Reduces the amount of particulate matter entrained in the ambient air as a result of anthropogenic (human-made) fugitive dust sources by requiring actions to prevent, reduce, or mitigate fugitive dust emissions.

Rule 1113, Architectural Coatings. Limits the VOC content of architectural coatings used on projects in the SCAQMD. Any person who supplies, sells, offers for sale, or manufactures any architectural coating for use on projects in the SCAQMD must comply with the current VOC standards set in this rule.

Rule 1403, Asbestos Emissions from Demolition/Renovation Activities. Specifies work practice requirements to limit asbestos emissions from building demolition and renovation activities, including the removal and associated disturbance of asbestos-containing materials.

3.3.3 Thresholds of Significance

According to Appendix G of the California Environmental Quality Act (CEQA) Guidelines, a significant impact related to air quality would occur if the project would (CEQA Guidelines, Section 15000 et seq.):

1. Conflict with or obstruct implementation of the applicable air quality plan
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
3. Expose sensitive receptors to substantial pollutant concentrations
4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people

For air quality, the City has not adopted specific Citywide significance thresholds but instead relies on significance thresholds identified by the SCAQMD (2019). The SCAQMD identifies emissions thresholds for mass daily emissions and localized significance impacts, as outlined below.

3.3.3.1 Mass Daily Emissions

The SCAQMD mass daily emissions threshold applies to federally regulated air pollutants except lead, which is not exceeded in the SCAB. The SCAQMD thresholds provide a basis for making regional significance determinations for construction activity based on the maximum daily emissions during the construction period, which provides a "worst-case" analysis of the construction emissions. Similarly, significance determinations for operational emissions are based on the maximum daily emissions during the operational phase. Daily construction and operational emissions associated with the project would be significant if they exceeded the thresholds in Table 3.3-4. Emissions exceeding these thresholds would be deemed to constitute a cumulatively considerable net increase of criteria pollutants for which the water service area is in nonattainment under an applicable federal or state ambient air quality standard.

Table 3.3-4. South Coast Air Quality Management District Air Quality Mass Daily Thresholds

Pollutant	Construction Threshold (lbs/day)	Operational Threshold (lbs/day)
CO	550	550
NO_x	100	55
PM_{10}	150	150
$PM_{2.5}$	55	55
SO_x	150	150
VOC	75	55

Source: SCAQMD 2019.

Notes: CO = carbon monoxide; NO_x = nitrogen oxides; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; SO_x = sulfur oxides; VOC = volatile organic compound

3.3.3.2 Localized Significance Thresholds

The SCAQMD also identifies localized significance thresholds (LSTs), as shown in Table 3.3-5, to determine if the impacts to air quality are significant based on localized exceedances of the NAAQS and or CAAQS. LSTs represent the maximum emissions from a project that will not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard at the nearest sensitive receptor. LSTs are identified for NO_2, CO, PM_{10}, and $PM_{2.5}$ generated at a project site. Localized construction and operational emissions thresholds are determined as a function of the water service area (acres) and receptor distance (meters) from boundary of site. The LSTs applicable to the projects proposed in the 2018 RWMP are listed in Table 3.3-5**.**

Table 3.3-5. Source Receptor Area Norco/Corona Localized Significance Thresholds

Water Service Area/ Distance to Receptor	Air Pollutant (Relevant Ambient Air Quality Standards)	Allowable Emissions (lbs/day)	
		Construction	Operation
1 acre/25 meters	NO_x	118	118
	CO	674	674
	PM_{10}	4	1
	$PM_{2.5}$	3	1
2 acres/25 meters	NO_x	170	170
	CO	1,007	1,007
	PM_{10}	6	2
	$PM_{2.5}$	5	2

Source: SCAQMD 2009.

Notes: CO = carbon monoxide; NO_x = nitrogen oxides; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter

3.3.4 Environmental Analysis

3.3.4.1 Threshold 1: Consistency with Applicable Air Quality Plan

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

Based on Appendix G of CEQA Guidelines, an impact would be considered significant if implementation of the project would result in a conflict with or obstruct implementation of the 2016 AQMP or applicable portions of the SIP. The following two criteria are used to determine consistency with the 2016 AQMP, as defined in Chapter 12, Sections 12.2 and 12.3, of the SCAQMD's CEQA Air Quality Handbook:

- **Consistency Criterion No. 1:** The proposed project will not result in an increase in the frequency or severity of existing air quality violations (i.e., exceedances of NAAQS or CAAQS) or cause or contribute to new violations, or delay the timely attainment of air quality standards or the interim emissions reductions specified in the 2016 AQMP.
- **Consistency Criterion No. 2:** The proposed project will not exceed the assumptions in the 2016 AQMP in increments based on the year of project buildout phase.

Projects that do not meet these criteria would be deemed to conflict with or obstruct implementation of the applicable air quality plan.

Impact Analysis

The violations that Consistency Criterion No. 1 refers to are the CAAQS and NAAQS. CAAQS and NAAQS violations would occur if LSTs or regional significance thresholds were exceeded. As demonstrated in Section 3.3.4.2, implementation of the project would not exceed the applicable regional significance thresholds or LSTs for construction or operational activity. Therefore, the project would not conflict with the 2016 AQMP according to this criterion.

Regarding Consistency Criterion No. 2, project consistency with any regional air quality plan is determined in terms of whether overall growth has been correctly anticipated in any given subregion. Projects that propose development that is consistent with the growth anticipated by the City of Corona 2020–2040 General Plan and the SCAG's growth forecasts would be consistent with the AQMP. The project would be consistent with land use and growth assumptions included in these plans because it does not propose any growth-inducing features beyond the planned growth in the City of Corona 2020–2040 General Plan.

Level of Significance Before Mitigation

Impacts of the project related to violations of applicable air quality plans would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Because no mitigation measures are required, impacts would remain less than significant.

3.3.4.2 Threshold 2: No Net Increase of Any Criteria Pollutants

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

Impact Analysis

Construction and operational impacts of the project are addressed separately below.

Construction Impacts

Project construction emissions were estimated using the California Emissions Estimator Model (CalEEMod), version 2016.3.2, based on construction information provided by the City. A construction scenario that represents the maximum construction that may occur simultaneously in a given 12-month period was used to estimate maximum daily criteria pollutants from implementation of the project. Detailed assumptions and modeling data sheets are provided in Appendix B. Construction is anticipated to begin in late 2020. It was assumed that an average of three projects would occur in any given year based on the number of projects included in the 2018 RWMP and the time frame until buildout (29 projects in 10 years). The Sampson Pipeline Project was selected from the 2018 RWMP project list to represent the worst-case maximum daily emissions that could occur from any project. The Sampson Pipeline Project is calculated to require the greatest total amount of soil import and export and the most material movement in the shortest amount of time. Approximately 3,482 truck trips would be required over a 9-month construction period for a maximum average of 20 one-way truck trips per day. Therefore, assuming simultaneous construction of three projects with the construction intensity of the Sampson Pipeline Project represents a conservative worst-case scenario. For comparison, cut quantities are anticipated to vary between 37 cubic yards and 24,200 cubic yards for the remaining projects proposed in the 2018 RWMP compared to 27,852 cubic yards for the Sampson Pipeline Project.

Modeling assumes watering of excavated material twice daily for consistency with the best available control measures required by SCAQMD Rule 403. Table 3.3-6 provides the estimated disturbance area and import and export required for the Sampson Pipeline Project. It is assumed that import and export trips would be phased over the entire construction period.

Table 3.3-6. Sampson Pipeline Project Construction Assumptions

Project Name	Construction Schedule (months)	Disturbance Area (acres)	Material to Import (cubic yards)	Material to Export (cubic yards)
Sampson Pipeline	9	3.45	27,852	22,281

Source: Appendix B.

Maximum daily emissions levels associated with construction of the worst-case scenario projects are provided in Table 3.3-7. Maximum emissions are conservative because less intense construction is anticipated to occur simultaneously, and segments that would be completed in later years are anticipated to benefit from more stringent emissions standards. As shown in Table 3.3-7, the project would not exceed SCAQMD construction thresholds for any pollutant. Therefore, the proposed project would not result in a significant impact related to criteria pollutant emissions during construction. Because emissions of criteria pollutants under the project would be below the applicable thresholds, which are established to assist maintaining or achieving regional attainment in the SCAB, construction would not result in a cumulatively considerable contribution to regional acute and long-term health impacts related to nonattainment of the ambient air quality standards.

Table 3.3-7. Estimated Construction Daily Maximum Air Pollutant Emissions (lbs/day)

Project	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Individual Project (Sampson Pipeline)	3	31	19	<1	5	3
Maximum from Simultaneous Construction[1]	**9**	**93**	**57**	**<1**	**15**	**9**
SCAQMD Threshold	75	100	550	150	150	55
Significant Impact?	*No*	*No*	*No*	*No*	*No*	*No*

Notes: CO = carbon monoxide; NO_X = oxides of nitrogen; PM_{10} = particulate matter less than 10 microns; $PM_{2.5}$ = particulate matter less than 2.5 microns; SO_X = oxides of sulfur; VOC = volatile organic compound

Emission quantities are rounded to the nearest whole number. Exact values are provided in Appendix B.

[1] Assumes emissions equal to Sampson Pipeline Project would occur for three simultaneous projects.

An LST analysis applies to exposure of receptors in the immediate vicinity of construction; therefore, it applies to each project proposed individually in the 2018 RWMP. The analysis below represents the worst-case daily emissions for the project anticipated to require the most intense daily construction (Sampson Pipeline Project). This project is used to screen for potential LST impacts from implementation of any 2018 RWMP project. Projects would be throughout the City in proximity to existing development; therefore, the most conservative thresholds for receptors located at 25 meters are applied. Emissions are compared to the 1-acre and 2-acre thresholds because disturbance areas of individual projects in the 2018 RWMP range from 0 to 2.42. The analysis is conservative for individual receptors because construction would generally be linear so that individual receptors would be varying distances from construction. Construction equipment exhaust combined with fugitive particulate matter emissions has the potential to expose sensitive receptors to criteria air pollutant emissions because these emissions would occur in the water service area.

Consistent with the SCAQMD methods, off-site vehicle and truck trips that would be spread out over commute and haul routes are not included in the LST analysis (SCAQMD 2008). As shown in Table 3.3-8, project emissions would not exceed the LSTs. A project the size of the Sampson Pipeline Project is projected to meet the 1-acre particulate matter thresholds; however, projects

requiring this amount of material movement would have project sites larger than 2 acres. For comparison, the Sampson Pipeline Project would result in the disturbance of approximately 3.45 acres in approximately 9 months, or approximately 800 square feet per day. The project with a disturbance area of less than 2 acres that would require the highest predicted average disturbance per day is the River Pipeline Project, which would result in the disturbance of 1.28 acres in approximately 6.5 months, or 400 square feet per day. Projects proposed in the 2018 RWMP that would have a disturbance area of less than 2 acres would require less intense material movement; therefore, daily emissions would be reduced compared to Sampson Pipeline Project and would not exceed the LST. Therefore, on-site construction of the project does not violate air quality standards and does not constitute a significant air quality impact.

Table 3.3-8. Estimated Construction Daily Maximum Air Pollutant Emissions (lbs/day) Relative to Localized Significance Thresholds

Project	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Worst-Case Individual Project Emissions	2	26	18	<1	4	3
1-Acre LST (allowable emissions)	—	118	674	—	4	3
2-Acre LST (allowable emissions)	—	170	1,007	—	6	5
Significant Impact?	—	*No*	*No*	*No*	*No*	*No*

Notes: CO = carbon monoxide; LST = localized significance threshold; NO_X = nitrogen oxides; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; SO_X = sulfur oxide; VOC = volatile organic compound

Emission quantities are rounded to the nearest hundredth. Exact values are provided in Appendix B.

Operational Impacts

Most of the projects associated with the 2018 RWMP would be passive, new, or upgraded pipelines and storage facilities, which would not result in new sources of operational air pollution. Following construction, operation of the pipelines and storage tanks would be passive (not requiring electricity or fuel) and would not result in an increase in criteria pollutant emissions. A nominal increase in vehicle emissions associated with maintenance of the proposed projects in the 2018 RWMP is anticipated. The new pump stations would have daily maintenance checks, and tanks would have weekly maintenance checks; however, maintenance for new and improved facilities would be incorporated into the existing maintenance schedule. Therefore, the net increase in new vehicle trips would be minimal and the vehicle emissions associated with 2018 RWMP implementation would not be significant.

The two new pump stations that would be installed as a result of project implementation would be electric rather than fuel consuming. None of the projects would require space heating, and no increase in natural gas demand would occur. Landscape equipment would occasionally be used for maintenance. However, once new drought-tolerant landscaping is established, only periodic brush clearing, tree trimming, and weed abatement would be required. Nigh-time safety lighting installed at some project sites would require minimal additional electric energy consumption. Due to the limited amount of equipment and time required for maintenance at each facility, equipment use

would not substantially increase compared to existing conditions. As such, the net increase in air pollutant emissions from operation of the project is anticipated to be minimal and well below significance thresholds for all pollutants. Therefore, project operation would not result in a significant impact on air quality related to criteria pollutant emissions.

As discussed previously for construction emissions, because emissions of criteria pollutants under the project would not exceed the applicable thresholds, which are established to assist maintaining or achieving regional attainment in the SCAB, operation would also not result in a cumulatively considerable contribution to regional acute and long-term health impacts related to nonattainment of the ambient air quality standards.

Level of Significance Before Mitigation

Impacts of the project related to cumulatively considerable net increase of any criteria pollutant would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Because no mitigation measures are required, impacts would remain less than significant.

3.3.4.3 Threshold 3: Sensitive Receptors

Would the project expose sensitive receptors to substantial pollutant concentrations?

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. The SCAQMD defines "sensitive receptors" as residences, schools, daycare centers, and health facilities such as hospitals or retirement homes. A sensitive receptor includes long-term care hospitals, hospices, prisons, dormitories, or similar live-in housing (SCAQMD 2012). Sensitive population groups include children, older adults, people with acute illnesses, and people with chronic illnesses, especially those with cardiorespiratory diseases.

Residential areas are considered sensitive to air pollution because residents tend to be home for extended periods of time, resulting in sustained exposure to any pollutants present. Industrial, commercial, and office areas are considered less sensitive to air pollution because exposure periods associated with these land use types are relatively short and intermittent because the majority of workers tend to stay indoors most of the time.

The two primary emissions of concern regarding health effects for land development projects are CO and DPM. Areas with high vehicle density, such as congested intersections and parking garages, have the potential to create high concentrations of CO, known as "CO hot spots." An air

quality impact is considered significant if CO emissions create a hot spot where either the California 1-hour standard of 20 ppm or the federal and California 8-hour standard of 9.0 ppm is exceeded. Exceedance typically occurs at severely congested intersections (level of service E or worse) (Caltrans 2010). Based on the SCAQMD's Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis (SCAQMD 2003), projects that should be analyzed for DPM emissions include truck stops, distribution centers, and transit centers, which could be sources of DPM from heavy-duty diesel trucks.

Impact Analysis

Construction activities associated with the project have the potential to result in emissions of DPM. DPM is a mixture of many exhaust particulates and gases that is produced when an engine burns diesel fuel. Compounds found in diesel exhaust are carcinogenic and may cause health impacts ranging from irritation, headache, and dizziness to increased risk of cardiovascular, cardiopulmonary, and respiratory disease and lung cancer, depending on the length of exposure. Construction of projects identified in the 2018 RWMP would result in a short-term addition of truck trips occurring over a few months per project. Projects would be spread out over the water service area; thus, construction haul routes would vary. Therefore, the length of individual receptor exposure would be limited, especially for linear pipeline projects where construction continually moves along the project alignment. As shown in Table 3.3-7**,** maximum daily air pollutant emissions from on- and off-road vehicle emissions would not exceed applicable thresholds during construction. Construction associated with implementation of the project would not result in a significant impact to sensitive receptors related to DPM.

CARB recommends that a detailed health risk assessment be conducted for proposed sensitive receptors within 1,000 feet of a warehouse distribution center, 300 feet of a large gas station, 50 feet of typical gas dispensing facilities, or 300 feet of a dry cleaning facility that uses perchloroethylene, among other siting recommendations (CARB 2005). Additionally, CARB recommends that a health risk assessment be prepared for sensitive receptors proposed within 500 feet of a highway. The project do not propose any facilities that would require a health risk assessment for sensitive receptors. The proposed project would include new sources of TACs from construction and maintenance vehicles, but as discussed previously, criteria air pollutant emissions that occur from both construction and operation of the projects identified in the 2018 RWMP would not exceed significance thresholds. Additionally, because the project would result in a minor increase in vehicle trips associated with new facility maintenance, implementation of the project would not contribute to any CO hot spot. Therefore, impacts to sensitive receptors would be less than significant during construction and operation.

Level of Significance Before Mitigation

Impacts of the project related to exposure of sensitive receptors would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Because no mitigation measures are required, impacts would remain less than significant.

3.3.4.4 Threshold 4: Odors

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

Impact Analysis

Construction of the projects identified in the 2018 RWMP could result in minor amounts of odor compounds associated with diesel heavy equipment exhaust. However, all diesel equipment would not be operating at once, and construction near individual receptors would be temporary and would vary by project. Additionally, SO_x is the only criteria air pollutant with a strong, pungent odor (ATSDR 2015). As shown in Table 3.3-7, maximum construction emissions of SO_x would be less than 1 pound per day, which is well below the SCAQMD long-term threshold of 150 pounds per day. Therefore, impacts associated with odors during construction would not result in nuisance odors that would result in a significant impact.

Typical sources of odor complaints include facilities such as sewage treatment plants, landfills, recycling facilities, petroleum refineries, and livestock operations (CARB 2005). The project includes distribution pipelines, tanks, and pump stations for treated reclaimed water. The proposed project would not construct facilities that would create new objectionable odors because the facilities would primarily be passive infrastructure for storage or movement of treated reclaimed water.

Level of Significance Before Mitigation

Impacts of the project related to exposure of odors would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Because no mitigation measures are required, impacts would remain less than significant.

3.3.5 Cumulative Impacts and Mitigation

3.3.5.1 Cumulative Impacts Threshold 1: Consistency with Applicable Air Quality Plan

The SCAB is the geographic scope for the analysis of cumulative impacts relative to air quality plans. The AQMP and SIP address cumulative air quality impacts in the SCAB based on future growth predicted by SCAG. SCAG's future growth predictions are based on the General Plans of local jurisdictions. For this reason, development consistent with the applicable General Plan would also be consistent with the AQMP and SIP. Cumulative development in the SCAB is not anticipated to result in significant impacts in terms of conflicting with the AQMP and SIP because the majority of cumulative projects would be consistent with their respective General Plans and the growth anticipated under the plans. The projects identified in the 2018 RWMP are necessary to meet infrastructure capacity needs forecasted using the latest growth data from SCAG and the City and would not result in or accommodate unplanned growth. Other projects would be required to implement best management practices and meet the AQMP and SIP. Therefore, the 2018 RWMP would not have a cumulatively considerable contribution to a cumulative impact associated with conflicting with or obstructing implementation of the AQMP or SIP.

3.3.5.2 Cumulative Impacts Threshold 2: No Net Increase of Any Criteria Pollutants

The project-specific impact analysis determined that construction and operational emissions associated with the project would not exceed any significance thresholds for criteria pollutants. Similar to the project and in compliance with CEQA, other cumulative projects in the City of Corona 2020–2040 General Plan would be required to comply with applicable air quality regulations. The projects would be reviewed separately, and in the event that impacts on criteria pollutants are identified for these projects, mitigation measures would be required to be incorporated into the project. Therefore, the project, together with other cumulative projects, would not result in a cumulatively considerable contribution to a significant air quality impact with respect to criteria pollutants.

3.3.5.3 Cumulative Impacts Threshold 3: Sensitive Receptors

The geographic scope for the analysis of cumulative impacts relative to sensitive receptors is the City's water service area because sensitive receptors (e.g., residences, schools, and hospitals) are interspersed throughout the area where the proposed 2018 RWMP projects would be installed. Cumulative growth in the water service area would have the potential to result in CO hot spots because of increased congestion; however, as discussed in Section 3.3.4.3, air emissions from project operation, including emissions of CO, would be well below significance thresholds. The overall net vehicle trips associated with the proposed project would be minimal. Furthermore, new reclaimed water infrastructure would not generate substantial sources of TAC emissions that could pose or contribute to a health risk, and the cumulative projects surrounding the water service area would primarily include residential and commercial projects that would not be expected to result in substantial TAC emissions. The 2018 RWMP is a planned project to reduce demand for potable

water and indirectly support the growth considered in the City of Corona 2020–2040 General Plan. Similar to the project and in compliance with CEQA, other cumulative projects in the City of Corona 2020–2040 General Plan would be required to comply with applicable regulations. The projects would be reviewed separately, and in the event that impacts on sensitive receptors are identified for these projects, mitigation measures would be required to be incorporated into the project. Therefore, the project, together with other cumulative projects, would not result in a cumulatively considerable contribution to a significant air quality impact on sensitive receptors.

3.3.5.4 Cumulative Impacts Threshold 4: Odors

The geographic scope for the analysis of cumulative impacts relative to objectionable odors is the area immediately surrounding the odor source. Objectionable odors are not cumulative in nature because the air emissions that cause the odors disperse beyond the odor source, making the odor less detectable. Furthermore, as discussed in Section 3.3.3.6, the proposed project does not propose any new uses that would be associated with new objectionable odors because facilities would primarily be passive infrastructure for movement of treated recycled water. As stated previously, other potentially cumulative projects in the City of Corona 2020–2040 General Plan would be required to comply with applicable regulations with regarding objectionable odor, and mitigation measures would be incorporated into other projects as necessary. Therefore, implementation of the project, in combination with other cumulative projects, would not result in a cumulatively considerable contribution to a significant cumulative impact associated with objectionable odors.

3.3.6 Conclusion

As described in the analysis above, construction and operation of the projects identified in the 2018 RWMP would result in a nominal net increase in air pollutant emissions. Project construction would not exceed the LST, and therefore, on-site construction of the proposed project would not be a significant impact with respect to violating air quality standards. Projects would be spread out over the water service area, limiting the length of individual receptor exposure; therefore, construction associated with implementation of the project would not result in a significant impact to sensitive receptors related to DPM. Additionally, most of the projects associated with the 2018 RWMP would be passive, new, or upgraded pipelines and storage facilities, which would not result in any new sources of operational air pollution. The operation of two additional pump stations would not exceed the LST and would not result in a significant impact on air quality related to criteria pollutant emissions. Because the project would result in a nominal increase in vehicle trips, implementation of the project would not contribute to any CO hot spots. Therefore, impacts to sensitive receptors would be less than significant during operation. Based on the analysis above, the project's contribution to cumulative impacts related to air quality would not result in cumulatively considerable air quality impacts. As such, the air quality impacts associated with the implementation of the project would be less than significant. Because the project's impacts would be less than significant, no mitigation measures are required.

3.4 Biological Resources

This section discusses the potential impacts to biological resources in the City of Corona's (City's) water service area that may result from the implementation of the 2018 Reclaimed Water Master Plan (2018 RWMP or project). The analysis in this section is based in part on the following information: Biological Resources Technical Report prepared by Harris & Associates (2020) for the project (Appendix C).

3.4.1 Environmental Setting

This section describes the environmental setting as it relates to biological resources for the water service area. The project proposes reclaimed water facilities in various locations throughout the water service area.

3.4.1.1 Background Research and Survey Method

Before conducting the site visit to assess biological resources, Harris & Associates biologists Melissa Tu and Katie Laybourn conducted a review of previous survey information. This included a review of aerial imagery and previous vegetation and sensitive resources mapping for the City including the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) (County of Riverside 2003), the City's General Plan Technical Update: Final Environmental Impact Report (FEIR) (City of Corona 2020a), and the 2016 Initial Study and Mitigated Negative Declaration for the Proposition 1 – Reclaimed Water Distribution Facilities (2016 Proposition 1 IS/MND) (City of Corona 2016).

Following the literature review, Harris & Associates biologists conducted a general biological reconnaissance survey on April 14, 2020, by visually inspecting a number of the projects included in the 2018 RWMP in the water service area to determine the potential for sensitive plants and animals to occur.

Animal species observed or otherwise detected during the survey were recorded and are provided in Appendix C. Animal identifications were made in the field directly by visual observation or indirectly by detection of calls, burrows, tracks, or scat. Binoculars were used to aid the identification of animal species. Nomenclature used for animals comes from CaliforniaHerps.com (2020) for amphibians and reptiles, American Ornithological Society (2019) and Cornell Lab of Ornithology (2020a) for birds, Checklist of Butterflies of San Diego County (San Diego Natural History Museum 2020a) for butterflies, San Diego Natural History Museum (2020b) for other insects, and Bradley et al. (2014) for mammals.

Vegetation community boundaries for the project were provided in geographic information system (GIS) format by the City. Vegetation community types include the Holland vegetation classification code as modified for the Western Riverside County MSHCP (Holland 1986; County

of Riverside 2003). Plant species nomenclature used in this PEIR generally comes from Baldwin et al. (2012) and the Jepson Interchange List of Currently Accepted Names of Native and Naturalized Plants of California (Jepson Flora Project 2014).

3.4.1.2 Existing Biological Resources

This section includes a description of the biological resources that occur in the water service area.

Vegetation Communities and Land Use Types

The water service area consists of nine sensitive vegetation communities and two land use types, as described below (County of Riverside 2003; City of Corona 2018; Holland 1986). The sensitive vegetation communities were designated as sensitive because of the general scarcity of the community; because impacts to the habitat are often regulated by the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), U.S. Army Corps of Engineers (USACE), or Regional Water Quality Control Board (RWQCB); or because of the species the vegetation community supports and the functions that it provides. Figure 3.4-1, Vegetation Communities – Overview, presents the vegetation community and land use type boundaries, and Figures 3.4-2a though 3.4-2d show the vegetation communities and land use types.

Chaparral

Chaparral is a shrub-dominated vegetation community composed largely of evergreen species that range from 3 to 12 feet in height. The most common and widespread species in chaparral is chamise (*Adenostoma fasciculatum*). Other common shrub species include manzanita (*Arctostaphylos* spp.), wild lilac (*Ceanothus* spp.), oak (*Quercus* spp.), redberry (*Rhamnus* spp.), laurel sumac (*Malosma laurina*), mountain mahogany (*Cercocarpus betuloides*), toyon (*Heteromeles arbutifolia*), and mission manzanita (*Xylococcus bicolor*). Soft-leaved subshrubs are less common in chaparral than in coastal sage scrub but occur in canopy gaps of mature stands (Holland 1986; Sawyer et al. 2009).

Chaparral occurs in the southwestern portion of the water service area at the eastern base of the Santa Ana Mountains (Figure 3.4-1).

Coastal Sage Scrub (Diegan and Riversidian)

Coastal sage scrub in the water service area consists of Diegan coastal sage scrub and Riversidian coastal sage scrub.

Diegan coastal sage scrub is dominated by a characteristic suite of low-statured, aromatic, drought deciduous shrubs and subshrub species. Composition varies substantially depending on physical circumstances and the successional status of the vegetation community; however, characteristic species include California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*),

laurel sumac, California encelia (*Encelia californica*), and several species of sage (e.g., *Salvia mellifera*, white sage [*Salvia apiana*]) (Holland 1986; Sawyer et al. 2009). Diegan coastal sage scrub occurs in the western portion of the water service area south of the Santa Ana River.

Riversidian sage scrub is dominated by brittlebush (*Encelia farinosa*) with patches of California buckwheat and California sagebrush. Riversidian coastal sage scrub occurs in the southeastern portion of the water service area (Figure 3.4-1).

Freshwater Marsh (Coastal and Valley)

Freshwater marsh in the water service area consists of coastal and valley freshwater marsh. Coastal and valley freshwater marsh is dominated by freshwater emergent monocots often forming closed canopies. Dominant species include cattails (*Typha* spp.) and tules (*Schoenoplectus* spp.) (Holland 1986).

In the water service area, coastal and valley freshwater marsh occurs in small pockets along the Santa Ana River north of the Corona Municipal Airport (Figure 3.4-1).

Grassland (Non-Native)

Non-native grassland is a dense to sparse cover of annual grasses sometimes associated with numerous species of native annual forbs. This association occurs on gradual slopes with deep, fine-textured, usually clay soils. Characteristic species include oat (*Avena* sp.), red brome (*Bromus madritensis* ssp. *rubens*), ripgut brome (*Bromus diandrus*), barley (*Hordeum* sp.), and mustard (*Brassica* sp.). The majority of species and biomass in the non-native grassland community originated from the Mediterranean region, an area with a history of agriculture and a climate similar to California (Holland 1986).

Directly and indirectly, non-native grasslands provide foraging habitat for raptors and may be succeeded naturally by coastal sage scrub or other native habitats over time. For these reasons, non-native grassland is considered sensitive by the CDFW.

Plant species in the water service area that are documented in this vegetation community include ripgut brome, cheatgrass *(Bromus tectorum*), red brome, wild oat (*Avena fatua*), Mediterranean grass (*Schismus barbatus*), shortpod mustard (*Hirschfeldia incana*), Russian thistle (*Salsola tragus*), and common sunflower (*Helianthus annuus*).

Three projects (Western Riverside County Regional Wastewater Authority [WRCRWA] Flood Control Improvements, Promenade Pipeline, and Research Pipeline) are in or adjacent to undeveloped, non-native grassland (Figures 3.4-2a and 3.4-2c).

Oak Woodland

Oak woodland is dominated by Engelmann oak (*Quercus engelmannii*), coast live oak (*Quercus agrifolia*), canyon live oak (*Quercus chrysolepis*), interior live oak (*Quercus wislizenii*), and black oak (*Quercus kelloggii*) in the canopy, which may be continuous to intermittent or savannah-like.

Oak woodland in the water service area is dominated by coast live oak woodland and occurs in the southwestern portion of the water service area on the eastern side of the Santa Ana Mountains (Figure 3.4-1).

Open Water

Open water in the water service area consists of the Prado Flood Control Basin, Santa Ana River, and other drainages and includes non-vegetated channel and ponds (Holland 1986). Non-vegetated channel consists of predominantly unvegetated sandy, gravelly, or rocky channels. Variable water lines inhibit the growth of vegetation, although some weedy species of grass may grow along the outer edges of the channel. Vegetation may exist here but is usually less than 10 percent total cover.

The majority of open water occurs in the northern portion of the water service area (Figure 3.4-1).

Riversidian Alluvial Fan Sage Scrub

Riversidian alluvial fan sage scrub grows on well-drained, sandy, and rocky alluvial soils deposited by streams that experience periodic flooding along the base of the San Gabriel, San Bernardino, and San Jacinto Mountains. This community is typically dominated by scale-broom (*Lepidospartum squamatum*), which is considered an indicator species. Species in this community consist of a mix of riparian species including drought deciduous subshrubs and large, evergreen, woody shrubs that adapted to intense, periodic flooding events. Due to periodic flooding and erosion, pioneer, intermediate, and mature stages of alluvial fan sage scrub vegetation communities are often distinguished. These stages vary from sparse vegetation and low-diversity to dense subshrubs and evergreen woody shrubs. Species associated with this community include California buckwheat, coastal sagebrush, brittlebush (*Encelia farinosa*), white sage, California sycamore (*Platanus racemosa*), deerweed (*Acmispon glaber*), and mulefat (*Baccharis salicifolia*).

Riversidian alluvial fan sage scrub occurs in the northern and southwestern portions of the water service area at the edges of the Santa Ana River and Temescal Wash riparian corridors (Figures 3.4-1, 3.4-2a, and 3.4-2c).

Southern Riparian Forest

Southern riparian forest is a general vegetation description in the Holland vegetation classification code that includes three elements: southern coast live oak riparian forest, southern arroyo willow riparian forest, and southern cottonwood-willow riparian forest. Southern riparian forest occurs

along streams in canyons and valleys. Species that dominate each community vary but are typically coast live oak, willows, or a combination of cottonwoods and willows.

In the water service area, riparian forest consists primarily of native southern cottonwood-willow riparian forest with patches of giant reed (*Arundo donax*).

Southern cottonwood-willow riparian forest is a tall, open, broad-leaved, winter-deciduous riparian forest found along perennial wet streams. This community is dominated by Fremont cottonwood (*Populus fremontii*), black cottonwood (*Populus trichocarpa*), and several tree willow species (*Salix* spp.) and contains an understory of shrubby willows. This community is primarily found in subirrigated and frequently overflowed lands, which provide the moist, bare mineral soils required for the germination and establishment of the dominant species. Other plant species associated with this community include California mugwort (*Artemisia douglasiana*), mulefat, California sycamore, Goodding's black willow (*Salix gooddingii*), sandbar willow (*Salix exigua* var. *hindsiana*), Pacific willow (*Salix lasiandra*), arroyo willow (*Salix lasiolepis*), and stinging nettle (*Urtica dioica*).

Southern riparian forest occurs in the northern portion of the water service area in the Santa Ana River floodplain. As described in the 2016 Proposition 1 IS/MND prepared for the WRCRWA Transmission Pipeline, the source of supply project would be constructed in River Road and surrounded upstream and downstream by southern cottonwood-willow riparian forest along the Santa Ana River (Figure 3.4-2a) (City of Corona 2016). The source of supply project completed separate California Environmental Quality Act (CEQA) review and obtained site-specific permits and is not discussed further in this PEIR.

Southern Riparian Scrub

Southern riparian scrub is a dense riparian community found along major river systems where flood scour occurs and can also be found in smaller drainages influenced by urban and agricultural runoff. This community is characterized by small trees or shrubs, such as willows, but lacks taller riparian trees. Species typically associated with southern riparian scrub include arroyo willow and other willow species and desert broom (*Baccharis sarothroides*). The riparian scrub in the water service area consists of mulefat scrub and southern willow scrub.

This community requires repeated flooding events to prevent succession to southern riparian forest. Species associated with this community include sandbar willow, black willow, red willow (*Salix laevigata*), arroyo willow, and mulefat.

Southern riparian scrub is considered sensitive and declining by the USFWS and CDFW. Southern riparian scrub may be regulated by the CDFW pursuant to Sections 1600 et seq. of the California Fish and Game (CFG) Code, the RWQCB pursuant to Section 401 of the Clean Water Act (CWA)

or the Porter-Cologne Water Quality Control Act (Porter-Cologne Act), or the USACE pursuant to Section 404 of the CWA (33 USC 1344) if adjacent to waters of the state or United States.

In Southern California, southern riparian scrub has been impacted by filling, draining, clearing of vegetation, water diversion projects, impoundment projects, channelization, increased sediment loading, lowering of water tables, human recreational activities, gravel mining, proliferation of exotic species, grazing, and urban development (Bowler 1990).

Southern riparian scrub occurs along streams in the western and southeastern portions of the water service area (Figure 3.4-1).

Agricultural and Developed/Disturbed Land Uses

Agricultural Land

Agricultural land includes areas occupied by dairies and livestock feed yards or areas that have been tilled for use as croplands or groves and orchards. Agricultural land in the water service area occurs primarily in the southwestern portion of the City, and grazing land occurs east of Interstate 15 in the southeastern portion of the water service area.

Developed/Disturbed Land

Developed/disturbed land includes areas of existing residential, commercial, and industrial development (locations of existing manufactured structures), roadways, parking lots, pedestrian paths, horticultural open spaces, landscape buffers and courtyards, plazas, gardens, recreation fields, and areas dominated by non-native (exotic) vegetation. Developed/disturbed land occupies the majority of the water service area and is not considered sensitive. The majority of the projects included in the 2018 RWMP would be in developed/disturbed land (Figures 3.4-1 and 3.4-2a through 3.4-2c).

Jurisdictional Wetlands and Waters

Aquatic resources jurisdictional delineations were not conducted as part of the site visit. However, wetlands and waters potentially subject to the regulatory jurisdiction of the USACE pursuant to Section 404 of the CWA (33 USC 1344), RWQCB pursuant to Section 401 of the CWA or the Porter-Cologne Act, and the CDFW pursuant to Sections 1600 et seq. of the CFG Code occur in the water service area. Wetland vegetation communities (i.e., freshwater marsh, open water, southern riparian forest, and southern riparian scrub) occur in the water service area and may fall under the regulatory jurisdiction of the USACE, RWQCB, or CDFW (Figure 3.4-1).

Non-wetland waters including non-vegetated stream channels, erosional features, gullies, and concrete-lined channels occur in the water service area (Figure 3.4-1). These features may fall under the regulatory jurisdiction of the USACE, RWQCB, or CDFW.

As described in the 2016 Proposition 1 IS/MND prepared for the WRCRWA Transmission Pipeline, the project would be constructed in River Road but would be surrounded upstream and downstream by southern cottonwood-willow riparian forest and the Santa Ana River (Figure 3.4-2a) (City of Corona 2016). This project has completed separate CEQA review and obtained site-specific permits and is not discussed further in this PEIR.

Plant Species

The 25 projects included in the 2018 RWMP in developed/disturbed land are primarily surrounded by landscaping (non-native ornamental vegetation) and roadside vegetation dominated by non-native annual herbs and non-native grasses. The WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline projects are proposed in undeveloped, non-native grassland vegetation. Dominant non-native grass species in the water service area consist of ripgut brome and red brome. Landscaped areas and non-native roadside vegetation consist of tree, scrubs, and grasses that could support nesting bird species.

Animal Species

In total, 48 animals species were observed during the site visit (2 invertebrate/insect, 2 reptile, 40 bird, and 4 mammal). Appendix C presents the list of animal species observed. Common bird species including American crow (*Corvus brachyrhynchos*), Anna's hummingbird (*Calypte anna*), house finch (*Haemorhous mexicanus*), and mourning dove (*Zenaida macroura*) were observed in the developed/disturbed land during the site visit. Raptor species observed include red-tailed hawk (*Buteo jamaicensis*) and American kestrel (*Falco sparverius*). Four common mammal species, California ground squirrel (*Spermophilus beecheyi*), coyote (*Canis latrans*), desert cottontail (*Sylvilagus audubonii*), and mule deer (*Odocoileus hemionus*), and two common reptile species, western fence lizard (*Sceloporus occidentalis*) and western side-blotched lizard (*Uta stansburiana elegans*), were observed.

Sensitive Plant and Animal Species

This section includes sensitive plant and animal species, including critical habitat and nesting birds, as defined by the CDFW, City, California Native Plant Society (CNPS), USFWS, and Western Riverside County MSHCP (Appendix C).

Sensitive Plant Species

Sensitive plant species are considered uncommon or limited in that they (1) are endemic to Western Riverside County, (2) are a local representative of a species or association of species not otherwise found in the region, or (3) are severely depleted within their ranges or in the region. High-interest plants include those that are listed as threatened or endangered by the USFWS or CDFW and those afforded a California Rare Plant Rank (CRPR) designation of 1 or 2 by the CNPS, although species with lower CRPR ranks (i.e., CRPR 3 and 4 species) were also identified. CRPR 4 species are

considered CDFW watch list (WL) species (CDFW 2020a, 2020b, 2020c; CNPS 2020) and are not afforded special status or recognition by the USFWS or CDFW but may be considered sensitive by local jurisdictions. Consistent with the CDFW, the City does not consider CRPR 3 or 4 species to be sensitive. Additional information on CNPS CRPR status codes is provided in Appendix C.

Sensitive Plant Species Documented in the Water Service Area

Table 3.4-1 presents the three sensitive plant species documented in the water service area.

Table 3.4-1. Sensitive Plant Species Documented in the Water Service Area

Scientific Name	Common Name	Status Regional/CRPR
Abronia villosa var. *aurita*[1]	Chaparral sand-verbena	MSHCP/1B.1
Calochortus weedii var. *intermedius*	Intermediate mariposa lily	MSHCP/1B.2
Dudleya multicaulis	Many-stemmed dudleya	MSHCP/1B.2

Sources: Calflora 2020; CDFW 2020a, 2020c; City of Corona 2018; CNPS 2020.

Notes: CRPR = California Rare Plant Rank; MSHCP = Multiple Species Habitat Conservation Plan

CRPR: 1B = rare, threatened, or endangered in California and elsewhere; .1 = seriously threatened in California (over 80 percent of occurrences threatened/high degree and immediacy of threat); .2 = moderately threatened in California (20–80 percent occurrences threatened/moderate degree and immediacy of threat)

[1] Last observed in the water service area in 1934 (occurs in the Santa Ana River floodplain east and west of the water service area).

These three sensitive plant species are discussed in more detail in Appendix C.

Sensitive Animal Species

Sensitive animal species include those that have been afforded special status or recognition by the USFWS, CDFW, or Western Riverside County MSHCP. In general, the principle reason an individual taxon (species or subspecies) is given such recognition is the documented or perceived decline or limitations of its population size or geographical extent or distribution resulting in most cases from habitat loss.

Sensitive Animal Species Documented in the Water Service Area

In total, 45 sensitive animal species (2 invertebrate, 1 amphibian, 6 reptile, 2 fish, 28 bird, and 6 mammal) have been documented in the water service area (Table 3.4-2). Four sensitive bird species, California horned lark (*Eremophila alpestris actia*), least Bell's vireo (*Vireo belli pusillus*), turkey vulture (*Cathartes aura*), and yellow-breasted chat (*Icteria virens*), were observed during the site visit. Coyote tracks were observed during the site visit.

Table 3.4-2. Sensitive Animal Species Documented in the Water Service Area

Species		Status[1]
Common Name	**Scientific Name**	**Regional/State/Federal**
Invertebrates		
Crotch bumble bee	*Bombus crotchii*	None/CCE/None
Monarch butterfly	*Danaus plexippus*	None/None/FC
Fish		
Arroyo chub	*Gila orcuttii*	MSHCP/SSC/None
Santa Ana sucker	*Catostomus santaanae*	MSHCP/SSC/FT
Amphibian		
Coast range newt	*Taricha torosa*	MSHCP/SSC/None
Reptiles		
American peregrine falcon	*Falco peregrinus anatum*	MSHCP/CFP/Delisted
Bald eagle	*Haliaeetus leucocephalus*	MSHCP/CFP/BGEPA
Belding's orange-throated whiptail	*Cnemidophorus hyperythrus beldingi*	MSHCP/WL/None
Bell's sage sparrow	*Artemisiospiza belli belli*	MSHCP/WL/None
Black-crowned night-heron	*Nycticorax*	MSHCP/None/None
Blainville's (coast) horned lizard	*Phrynosoma blainvillii*	MSHCP/SSC/None
Burrowing owl	*Athene cunicularia*	MSHCP/SSC/None
California horned lark	*Eremophila alpestris actia*	MSHCP/WL/None
California red-sided garter snake	*Thamnophis sirtalis infernalis*	MSHCP/SSC/None
Coastal California gnatcatcher	*Polioptila californica*	MSHCP/SSC/FT
Coastal western whiptail	*Aspidoscelis tigris stejnegeri*	MSHCP/SSC/None
Cooper's hawk	*Accipiter cooperii*	MSHCP/None/None
Double-crested cormorant	*Phalacrocorax auritus*	MSHCP/WL/None
Golden eagle	*Aquila chrysaetos*	MSHCP/SSC/BGEPA
Great blue heron	*Ardea herodias*	MSHCP/None/None
Least Bell's vireo	*Vireo belli pusillus*	MSHCP/CE/FE
Least bittern	*Ixobrychus exilis*	None/SSC/None
Loggerhead shrike	*Lanius ludovicianus*	MSHCP/SSC/None
Merlin	*Falco columbarius*	MSHCP/WL/None
Northern harrier	*Circus cyaneus*	MSHCP/SSC/None
Osprey	*Pandion haliaetus*	MSHCP/None/None
Red-diamond rattlesnake	*Crotalus ruber*	MSHCP/SSC/None
Sharp-shinned hawk	*Accipiter striatus*	MSHCP/None/None
Southwestern willow flycatcher	*Empidonax traillii extimus*	MSHCP/CE/FE
Swainson's hawk	*Buteo swainsoni*	MSHCP/CT/None
Tree swallow	*Tachycineta bicolor*	MSHCP/None/None
Tri-colored blackbird	*Agelaius tricolor*	MSHCP/CT/None
Turkey vulture	*Cathartes aura*	MSHCP/None/None

Table 3.4-2. Sensitive Animal Species Documented in the Water Service Area

Species		Status[1]
Common Name	**Scientific Name**	**Regional/State/Federal**
Western pond turtle	*Clemmys [marmorata] pallida*	MSHCP/SSC/None
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	MSHCP/CE/FT
White-faced ibis	*Plegadis chihi*	MSHCP/SSC/None
White-tailed kite	*Elanus leucurus*	MSHCP/SSC/None
Yellow warbler	*Setophaga petechia*	MSHCP/SSC/None
Yellow-breasted chat	*Icteria virens*	MSHCP/SSC/None
Mammals		
Bobcat	*Lynx rufus*	MSHCP/None/None
Coyote	*Canis latrans*	MSHCP/None/None
Northwestern San Diego pocket mouse	*Chaetodipus fallax*	MSHCP/SSC/None
Pocket free-tailed bat	*Nyctinomops femorosaccus*	None/SSC/None
Stephens' kangaroo rat	*Dipodomys stephensi*	MSHCP/CT/FE
Western yellow bat	*Lasiurus xanthinus*	None/SSC/None

Sources: CaliforniaHerps.com 2020; CDFW 2020a, 2020b; City of Corona 2018; Cornell Lab of Ornithology 2020a, 2020b; iNaturalist 2020.

Notes: BGEPA = Bald and Golden Eagle Protection Act; CCE = California candidate endangered; CE = California endangered; CFP= California fully protected; CT = California threatened; FC = federal candidate for listing; FE = federally endangered; FT= federally threatened; MSHCP = Western Riverside Multiple Species Habitat Conservation Plan; SSC = CDFW species of special concern; WL = CDFW watch list

The 45 sensitive animal species are discussed in more detail in Appendix C.

Critical Habitat

The USFWS designates critical habitat for listed endangered or threatened species of plants and animals. Critical habitat is defined in the federal Endangered Species Act (FESA) as habitat deemed essential to the survival of a federally listed species.

Four animal species designated as federally endangered (FE) or federally threatened (FT) have designated critical habitat mapped in the water service area (Figure 3.4-3, Critical Habitat) (USFWS 2020). The four species are listed below:

- Bird species
  - Coastal California gnatcatcher (*Polioptila californica californica*) (FT)
  - Least Bell's vireo (FE)
  - Southwestern willow flycatcher (*Empidonax traillii extimus*) (FE)
- Fish species
  - Santa Ana sucker (*Catostomus santaanae*) (FT)

Nesting Birds

The water service area contains nesting habitat for several bird species, including raptors, protected under the CFG Code and Migratory Bird Treaty Act (MBTA). The highest quality habitat for nesting birds in the water service area is the Santa Ana River riparian corridor in the northern portion of the area. The projects included in the 2018 RWMP proposed in developed/disturbed land and the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline projects proposed in undeveloped, non-native grassland vegetation are adjacent to trees and shrubs that provide potential nesting habitat.

Wildlife Corridors and Linkages

Wildlife corridors and linkages are defined by the CDFW as areas that connect suitable animal habitat areas in a region otherwise fragmented by rugged terrain, changes in vegetation, or human disturbance (CDFW 2014). Natural features such as canyon drainages, ridgelines, or undeveloped areas with vegetation can provide corridors for animals. Wildlife corridors are important because they provide access to food, water, and mates; allow dispersal of individuals away from high population densities; and facilitate the exchange of genetic material between populations.

The Santa Ana River and surrounding riparian vegetation is an important wildlife corridor in the Counties of Orange and Riverside. The Santa Ana Mountains on the western side of the water service area are also an important wildlife corridor (County of Riverside 2003).

During the site visit, the biologists assessed areas identified in the Western Riverside County MSHCP in the water service area for potential wildlife corridor functions. Potential wildlife corridors can include streams, riparian areas, and culverts under roadways. Habitat characteristics considered included topography, habitat quality, and adjacent land uses. In addition to reviewing the water service area for presence of continuous corridors, biologists also reviewed the water service area where critical habitat has been identified for potential dispersal corridors for coastal California gnatcatcher, least Bell's vireo, and southwestern willow flycatcher based on habitat type and quality, size of habitat patches, and distance separating habitat patches (Figure 3.4-3). The Santa Ana River and associated floodplain occupy the land in the northern portion of the water service area. The Santa Ana River functions to facilitate amphibian, bird, and large mammal movement in the local area. The river provides habitat for both common and sensitive species, including least Bell's vireo and southwestern willow flycatcher.

The northern portion of the water service area is likely to be used as a wildlife corridor because of its proximity to the Santa Ana River and associated riparian corridor and open hills and mountains to the southwest and the presence of native vegetation communities. Although the presence of dense urban development throughout the water service area is likely to impede animal movement outside of the Santa Ana River corridor, the northern portion of the water service area has been designated as an important habitat connectivity area along the Santa Ana River.

3.4.2 Regulatory Setting

Biological resources in the water service area are subject to regulatory administration by the federal government and State of California. The federal government administers nonmarine plant- and animal-related issues through the USFWS, while waters of the United States issues are administered by the USACE. California law relating to wetland, water-related, and animal issues is administered by the CDFW. Under CEQA, impacts associated with a proposed project or program are assessed with regard to significance criteria determined by the CEQA lead agency, which, for the project, is the City, pursuant to CEQA Guidelines. Biological resources-related laws and regulations that apply to the project include FESA, the MBTA, the CWA, CEQA, the California Endangered Species Act (CESA), and the CFG Code.

3.4.2.1 Federal

Federal Clean Water Act (U.S. Code, Title 33, Sections 1251 through 1376)

The CWA provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters. Section 401 requires a project operator to obtain a federal license or permit that allows activities resulting in a discharge to waters of the United States to obtain state certification, thereby ensuring that the discharge will comply with provisions of the CWA. The RWQCB administers the certification program in California. Section 402 establishes a permitting system for the discharge of any pollutant (except dredged or fill material) into waters of the United States. Section 404 establishes a permit program administered by the USACE that regulates the discharge of dredged or fill material into waters of the United States, including wetlands. The USACE implementing regulations are found at the Code of Federal Regulations, Title 33, Parts 320 and 330. Guidelines for implementation are referred to as the "Section 404(b)(1) Guidelines," which were developed by the U.S. Environmental Protection Agency in conjunction with the USACE (40 CFR 230). These guidelines allow the discharge of dredged or fill material into the aquatic system only if there is no practicable alternative that would have less adverse impacts.

Federal Endangered Species Act (U.S. Code, Title 16, Sections 1531 through 1543)

FESA and subsequent amendments provide guidance for the conservation of endangered and threatened species and the ecosystems on which they depend. In addition, FESA defines species as threatened or endangered and provides regulatory protection for listed species. FESA also provides a program for the conservation and recovery of threatened and endangered species and the conservation of designated critical habitat that the USFWS determines to be required for the survival and recovery of these listed species.

Section 7 of FESA requires federal agencies, in consultation with the Secretary of the Interior or the Secretary of Commerce, to ensure that actions the federal agencies authorize, fund, or carry

out are not likely to jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of critical habitat for these species. The USFWS and National Marine Fisheries Service share responsibilities for administering FESA. Regulations governing interagency cooperation under Section 7 are found in California Code of Regulations, Title 50, Part 402. The opinion issued at the conclusion of consultation will include a statement authorizing "take" (e.g., to harass, harm, pursue, hunt, wound, kill) that may occur incidentally to an otherwise legal activity.

Section 9 lists those actions that are prohibited under FESA. Although take of a listed species is prohibited, it is allowed when it is incidental to an otherwise legal activity. Section 9 prohibits take of listed species of fish, animals, and plants without special exemption. The definition of "harm" includes significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns related to breeding, feeding, or shelter. "Harass" is defined as actions that create the likelihood of injury to listed species by significantly disrupting normal behavioral patterns related to breeding, feeding, and shelter.

Section 10 provides a means whereby a nonfederal action with the potential to result in take of a listed species can be allowed under an incidental take permit. Application procedures are found in the Code of Federal Regulations, Title 50, Parts 13 and 17, for species under the jurisdiction of the USFWS and the Code of Federal Regulations, Title 50, Parts 217, 220, and 222, for species under the jurisdiction of the National Marine Fisheries Service.

Migratory Bird Treaty Act (U.S. Code, Title 16, Sections 703 through 711)

The MBTA is the domestic law that affirms or implements a commitment by the United States to four international conventions (with Canada, Mexico, Japan, and Russia) for the protection of a shared migratory bird resource. The MBTA makes it unlawful at any time, by any means, or in any manner to pursue, hunt, take, capture, or kill migratory birds. The act also applies to the removal of nests occupied by migratory birds during the nesting season. The MBTA makes it unlawful to take, pursue, molest, or disturb these species, their nests, or their eggs anywhere in the United States.

Wetlands and Other Waters of the United States

Aquatic resources, including riparian areas, wetlands, and certain aquatic vegetation communities, are considered sensitive biological resources and can fall under the jurisdiction of several regulatory agencies. The USACE exerts jurisdiction over waters of the United States, including waters that are subject to the ebb and flow of the tide; wetlands and other waters such as lakes, rivers, streams (including intermittent or ephemeral streams), mudflats, sandflats, sloughs, prairie potholes, vernal pools, wet meadows, playa lakes, or natural ponds; and tributaries of the previously mentioned features. The extent of waters of the United States is generally defined as the portion that falls within the limits of the ordinary high water mark. Typically, the ordinary high

water mark corresponds to the 5- to 7-year flood event. Wetlands, including swamps, bogs, seasonal wetlands, seeps, marshes, and similar areas, are defined by the USACE as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3[b]; 40 CFR 230.3[t]). Indicators of three wetland parameters (i.e., hydric soils, hydrophytic vegetation, and wetlands hydrology), as determined by field investigation, must be present for a site to be classified as a wetland by the USACE (USACE 1987).

3.4.2.2 State

California Endangered Species Act (California Fish and Game Code, Sections 2050 et seq.)

CESA establishes the policy of the state to conserve, protect, restore, and enhance threatened or endangered species and their habitats. CESA mandates that state agencies should not approve projects that would jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. There are no state agency consultation procedures under CESA. For projects that would affect a listed species under both CESA and FESA, compliance with FESA would satisfy CESA if the CDFW determines that the federal incidental take authorization is consistent with CESA under CFG Code, Section 2080.1. For projects that would result in take of a species only listed under CESA, the project operator would need to apply for a take permit under Section 2081(b).

California Environmental Quality Act Guidelines, Section 15380

Although threatened and endangered species are protected by specific federal and state statutes, CEQA Guidelines Section 15380(b), provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definition in FESA and Sections 2050 through 2059.26 of the CFG Code regarding rare or endangered plants or animals. This section was included in CEQA primarily to manage situations in which a public agency is reviewing a project that may have a significant impact on, for example, a candidate species that has not been listed by either the USFWS or CDFW. Thus, CEQA provides an agency with the ability to protect a species from the potential impacts of a project until the respective government agencies have an opportunity to designate the species as protected, if warranted. CEQA also calls for the protection of other locally or regionally significant resources, including natural communities. Although natural communities do not currently have legal protection of any kind, CEQA calls for an assessment of whether any such resources would be affected and requires findings of significance if there would be substantial losses. Natural communities listed as sensitive by the California Natural Diversity Database are considered by the CDFW to be

significant resources and fall under the CEQA Guidelines to address impacts. Local planning documents, such as General Plans, often identify these resources as well.

California Fish and Game Code, Section 1602

Under this section of the CFG Code, the project operator is required to notify the CDFW before the start of any project that would divert, obstruct, or change the natural flow, bed, channel, or bank of any river, stream, or lake. Pursuant to the code, a "stream" is defined as a body of water that flows at least periodically, or intermittently, through a bed or channel that has banks and supports fish or other aquatic life. Based on this definition, a watercourse with surface or subsurface flows that supports or has supported riparian vegetation is a stream and is subject to CDFW jurisdiction. Altered or artificial watercourses valuable to fish and animals are subject to CDFW jurisdiction. The CDFW also has jurisdiction over dry washes that carry water during storm events.

Preliminary notification and project review generally occur during the environmental process. When an existing fish or animal resource may be substantially adversely affected, the CDFW is required to propose reasonable project changes to protect the resource. These modifications are formalized in a streambed alteration agreement, which becomes part of the plans, specifications, and bid documents for the project.

California Fish and Game Code, Sections 2080 and 2081

Section 2080 of the CFG Code states that "no person shall import into this state [California], export out of this state, or take, possess, purchase, or sell within this state, any species, or any part or product thereof, that the Commission [California Fish and Game Commission] determines to be an endangered species or threatened species, or attempt any of those acts, except as otherwise provided in this chapter, or the Native Plant Protection Act, or the California Desert Native Plants Act." Pursuant to Section 2081 of the code, the CDFW may authorize individuals or public agencies to import, export, take, or possess state-listed endangered, threatened, or candidate species. These otherwise prohibited acts may be authorized through permits or memoranda of understanding if the take is incidental to an otherwise lawful activity, impacts of the authorized take are minimized and fully mitigated, the permit is consistent with any regulations adopted pursuant to any recovery plan for the species, and the project operator ensures adequate funding to implement the measures required by the CDFW. The CDFW makes this determination based on available scientific information and considers the ability of the species to survive and reproduce.

California Fish and Game Code, Sections 3503, 3503.5, 3513, and 3800

Section 3503 of the CFG Code states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 specifically states that it is unlawful to take, possess, or destroy any raptor (i.e., species in the orders Falconiformes and Strigiformes), including nests or eggs. Typical violations of this code include destruction of active nests resulting from removal of

vegetation in which the nests are located. Violation of Section 3503.5 could also include failure of active raptor nests resulting from disturbance of nesting pairs by nearby project construction. This statute does not provide for the issuance of any type of incidental take permit.

Section 3513 of the CFG Code upholds the MBTA by prohibiting any take or possession of birds that are designated by the MBTA as migratory nongame birds except as allowed by federal rules and regulations promulgated pursuant to the MBTA.

Section 3800 of the CFG Code affords protection to nongame birds, which are birds occurring naturally in California that are not resident game birds, migratory game birds, or fully protected birds.

California Fish and Game Code, Sections 3511, 4700, 5050, and 5515

California fully protected species are described in Sections 3511, 4700, 5050, and 5515 of the CFG Code. These statutes prohibit take or possession of fully protected species. The CDFW is unable to authorize incidental take of fully protected species when activities are proposed in areas inhabited by these species.

California Wetland Definition

Unlike the federal government, California has adopted the Cowardin et al. (1992) definition of "wetlands." For this classification, wetlands must have one or more of the following three attributes: (1) at least periodically, the land supports predominantly hydrophytes (at least 50 percent of the aerial vegetative cover); (2) the substrate is predominantly undrained hydric soil; and (3) the substrate is non-soil and saturated with water or covered by shallow water at some time during the growing season of each year.

Under normal circumstances, the federal definition of wetlands requires all three wetland identification parameters to be met, whereas the Cowardin et al. (1992) definition requires the presence of at least one of these parameters. For this reason, identification of wetlands by state agencies consists of the union of all areas that are periodically inundated or saturated or in which at least seasonal dominance by hydrophytes may be documented or in which hydric soils are present.

Native Plant Protection Act (California Fish and Game Code, Sections 1900 through 1913)

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

Natural Community Conservation Planning Act

The Natural Community Conservation Planning (NCCP) program is a cooperative effort to protect habitats and species. It began under the state's NCCP Act of 1991, legislation that is broader in its orientation and objectives than CESA or FESA. These laws are designed to identify and protect individual species that have already declined significantly in number. The act and the associated Southern California Coastal Sage Scrub NCCP Process Guidelines (1993), Southern California Coastal Sage Scrub NCCP Conservation Guidelines (1993), and NCCP General Process Guidelines (1998) have been superseded by the NCCP Act of 2003, which was subsequently amended in 2003, 2011, 2012, and 2016.

The primary objective of the NCCP program is to conserve natural communities at the ecosystem level while accommodating compatible land use. The program seeks to anticipate and prevent the controversies and gridlock caused by species' listings by focusing on the long-term stability of animal and vegetation communities and including key interests in the process.

This voluntary program allows the state to enter into planning agreements with landowners, local governments, and other stakeholders to prepare plans that identify the most important areas for a threatened or endangered species and the areas that may be less important. These NCCP plans may become the basis for a state permit to take threatened and endangered species in exchange for conserving their habitat. The CDFW and USFWS worked to combine the NCCP program with the federal Habitat Conservation Plan (HCP) process to provide take permits for state and federally listed species. Under the NCCP Act, local governments, such as the City, can take the lead in developing these NCCP Plans and become the recipients of state and federal take permits.

Porter-Cologne Water Quality Control Act

The State Water Resources Control Board works in coordination with the nine RWQCBs to preserve, protect, enhance, and restore water quality. Each RWQCB makes decisions related to water quality for its region and may approve, with or without conditions, or deny projects that could affect waters of the state. Their authority comes from the CWA and the state's Porter-Cologne Act. The Porter-Cologne Act broadly defines waters of the state as "any surface water or groundwater, including saline waters, within the boundaries of the state" (California Water Code, Section 13050[e]). Because the Porter-Cologne Act applies to any water, whereas the CWA applies only to certain waters, California's jurisdictional reach overlaps and may exceed the boundaries of waters of the United States. For example, Water Quality Order No. 2004-0004-DWQ states that "shallow" waters of the state include headwaters, wetlands, and riparian areas. Moreover, in practice, the RWQCBs claim jurisdiction over riparian areas. Where riparian habitat is not present, which may be the case in headwaters, jurisdiction is taken to the top of bank.

Under the Porter-Cologne Act, the State Water Resources Control Board and the nine RWQCBs also have the responsibility of granting CWA National Pollutant Discharge Elimination System permits

and waste discharge requirements for certain point-source and nonpoint-source discharges to waters. These regulations limit impacts on aquatic and riparian habitats from a variety of urban sources.

3.4.2.3 Local

City of Corona 2020–2040 General Plan

The following goals and policies in the City of Corona 2020–2040 General Plan (City of Corona 2020b) as they relate to biological resources.

Environmental Resources Element

Goal ER-4. Proper management of floodplain and riparian areas for their importance to wildlife habitat, unique and sensitive plant life, water recharge, and public health and safety.

Policy ER-4.1. Require urban uses to have a sufficient distance from a floodway boundary to ensure adequate protection of life, property, and habitat values.

Policy ER-4.2. Avoid altering floodways or channelization wherever possible; however, limit alterations to those that meet the following criteria:

- Alterations necessary for the protection of public health and safety only after all other options are exhausted
- Alterations essential to public service projects where no other feasible construction method or alternative project location exists
- Projects where the primary function is the improvement of fish and wildlife habitats

Policy ER-4.3. Design alterations and improvements to floodways so that they avoid adverse environmental effects to the maximum extent feasible, considering the following environmental factors:

- Stream scour
- Erosion protection and sedimentation
- Wildlife habitat and linkages
- Groundwater recharge capability
- Adjacent property
- Natural designs (e.g., soft riparian bottoms and gentle bank slopes, and landscaping with native plants)

Policy ER-4.4. Preserve and enhance existing native riparian habitat and prevent obstruction of natural watercourses to the extent feasible in new private and public developments or implement on-site replacement as mitigation.

Policy ER-4.5. Allow variances from city development standards on land area restricted from development due to its retention as a natural floodway, floodplain, or watercourse to encourage the preservation of natural watercourses without creating undue hardship on property owners.

Goal ER-5. Preservation and protection of natural and man-made wetlands from development impacts for their importance to wildlife habitat, unique and sensitive plant life, water recharge, and scenic value.

Policy ER-5.1. Prohibit encroachment of development into wetlands; provide buffer zones, setbacks, or other effective techniques in project siting and design to minimize direct and indirect effects to wetland habitats.

Policy ER-5.2. During the development review process, ensure compliance with the Clean Water Act's Section 404 in terms of wetlands mitigation policies and policies concerning fill material in jurisdictional wetlands.

Policy ER-5.3. Ensure compliance with habitat mitigation plans accepted by the applicable state and federal regulatory agencies that meet established ratios for wetland enhancement/restoration and on-/off-site compensation for the loss of wetland functions and values.

Policy ER-5.4. Consider wetlands for use as natural water treatment areas that will result in improvement of water quality.

Policy ER-5.5. Prohibit the planting of invasive, nonnative species in areas that would encroach and affect watercourses, their banks, and riparian areas.

Goal ER-6. Protection, enhancement, and sustaining of significant plant and wildlife species and habitat that exists in Corona and its Planning Area, for the long-term benefit of the natural environment and Corona residents and visitors.

Policy ER-6.1. Support the rehabilitation and enhancement the biological diversity and integrity of the City's natural resources through such means as vegetation restoration, control of alien plants and animals, landscape buffering, and natural watercourse channel restoration.

Policy ER-6.2. Preserve the wildlife and plant species and habitats listed in Tables 4-12 and 4-13 of the Technical Background Report for the General Plan and EIR [Environmental Impact Report] and those that may be considered by the City of Corona in the future.

Policy ER-6.3. Ensure that new developments and circulation improvements demonstrate compliance with state and federal regulations concerning the status, location, and condition of significant and sensitive biological species and habitats and riparian and riverine corridors. Biological surveys, as required and defined by the Western Riverside County Multiple Species

Habitat Conservation Plan, should identify potential impacts on biological resources and include mitigation measures to protect/replace resources in like kind.

Policy ER-6.4. Ensure that new developments through the development review process adhere to the Western Riverside County Multiple Species Habitat Conservation Plan, the Stephens' Kangaroo Rat Habitat Conservation Plan, and other habitat plans as appropriate to conserve biological diversity through protection of natural communities.

Policy ER-6.5. Preserve wildlife habitat of significant natural open space areas, including expanding habitat ranges, movement corridors, and nesting sites by adhering to and implementing the core biological linkages identified in the MSHCP for parts of the Temescal Canyon Area Plan in the City. Any proposed recreational use of those areas such as trails shall be designed to not interfere with the preservation efforts established in the MSHCP.

Goal ER-7. Adequate protection of biological resources and increased public awareness of their value to the community.

Policy ER-7.1. Require that public and private construction activities be conducted in a manner to minimize adverse impacts on natural resources and biological resources in proximity to MSHCP conservation areas and adhere to the MSHCP Guidelines pertaining to Urban/Wildlife Interface for drainage, toxics, lighting, noise, invasive barriers and grading [MSHCP Section 6.1.4].

Policy ER-7.2. Allow for publicly accessible sites that facilitate observation of natural resources in Corona and its sphere without compromising environmental quality.

Policy ER-7.3. Promote education programs and materials prepared by the Western Riverside County Regional Conservation Authority, Riverside-Corona Resource Conservation District, and other entities that promote awareness of biological resources conservation.

Goal ER-8. Protection of forest and vegetation resources in the City of Corona.

Policy ER-8.1. Cooperate with federal and state agencies to achieve the sustainable conservation of forest lands as a means of providing open space and protecting natural resources and MSHCP habitat.

Policy ER-8.2. Support conservation programs to reforest privately held forest lands.

Policy ER-8.3. Work with Riverside County to update the Vegetation Map for Corona and the SOI [sphere of influence] areas in cooperation with the California Department of Fish and Wildlife, the Natural Diversity Data Base, the United States Forest Service, and other knowledgeable agencies.

Policy ER-8.4. Maintain and conserve superior examples of native trees (including oak trees), natural vegetation, stands of established trees, and other features for aesthetic and water conservation purposes.

Policy ER-8.5. Conserve the oak tree resources in the City to the extent feasible.

Goal ER-9. Protection of regional washes and waterways and their use for recreational and open space purposes such as trails, habitat preservation, and groundwater recharge.

Policy ER-9.1. Protect sensitive biological resources in the Temescal Canyon Area Plan through adherence to policies in the Western Riverside County MSHCP.

Policy ER-9.2. Conserve existing wetlands and wetland functions and values in the Temescal Canyon Wash, Prado Basin, and the Santa Ana River with a focus on conservation of existing riparian, woodland, coastal sage scrub, alluvial fan scrub, and open water habitats.

Policy ER-9.3. Conserve existing known populations of least Bell's vireo and southwestern willow flycatcher within the Temescal Canyon Area Plan including locations at Prado Basin, Santa Ana River, and Temescal Wash. Maintain existing breeding habitat for these species at Prado Basin, Santa Ana River, and Temescal Wash where applicable to a particular project and location.

Policy ER-9.4. Conserve and manage suitable habitat for species known to exist in the Temescal Canyon Area Plan of Western Riverside County's Multiple Species Habitat Conservation Plan.

Policy ER-9.5. Conserve clay soils supporting sensitive plant species known to occur in the Temescal Canyon area, including Munz's onion, Palmer's grappling hook, small-flowered morning glory, long-spined spineflower, thread-leaved brodiaea, small-flowered microseris, and many-stemmed dudleya.

Policy ER-9.6. Conserve sandy soils co-occurring with chaparral supporting Palomar monkeyflower, known to occur in the Temescal Canyon area.

Policy ER-9.7. Conserve locations supporting California muhly, heart-lived pitcher sage, Hall's monardella, and other sensitive plant species that may occur in a wide variety of habitat types within the Temescal Canyon Area Plan.

Policy ER-9.8. Provide for and maintain connection(s) from the Cleveland National Forest to Prado Basin and the Santa Ana River within Temescal Canyon, providing opportunities for offsite connections to Chino Hills State Park.

Policy ER-9.9. Conserve upland habitat adjacent to Temescal Wash to augment existing upland habitat conservation in the Lake Matthews/Estelle Mountain Reserve areas and provide for contiguous connection of upland habitat blocks from the existing reserve to Temescal Wash. Habitat conservation should focus on blocks of existing upland habitat east of Temescal Wash connecting to Lake Matthews/Estelle Mountain Reserve.

Policy ER-9.10. Conserve floodplain areas supporting sensitive plant species known to occur in Temescal Canyon, including Parry's spineflower, peninsular spineflower, and smooth tarplant, and Coulter's matilija poppy.

Policy ER-9.11. Conserve rocky soils co-occurring with coastal sage scrub, peninsular jumper, or chaparral supporting Payson's jewelflower, known to occur in the Temescal Canyon area.

Policy ER-9.12. Provide for and maintain a continuous linkage along Temescal Wash from the southern boundary of the Temescal Canyon area to the Santa Ana River.

Western Riverside County Multiple Species Habitat Conservation Plan

The Western Riverside County MSHCP is a comprehensive, multi-jurisdictional plan that addresses biological and ecological diversity by conserving species and associated habitats while allowing approval of development in Western Riverside County (County of Riverside 2003). It is administered by the Western Riverside County Regional Conservation Authority.

The MSHCP functions as an HCP pursuant to Section 10(a)(1)(B) of FESA and as an NCCP pursuant to California's NCCP Act. The MSHCP provides a framework for the USFWS and CDFW to grant take authorization (i.e., incidental take permits) for species covered by the MSHCP that are FESA or CESA listed as threatened or endangered; take of these species without a permit would be unlawful.

The MSHCP covers 146 species, not all of which are FESA or CESA listed. However, mitigation for impacts to listed and non-listed species may be required pursuant to CEQA or other regulatory processes, and the MSHCP Conservation Area provides an avenue for this mitigation. Furthermore, should any of the non-listed covered species be subsequently FESA or CESA listed, take authorization may be granted through the MSHCP framework.

The MSHCP was approved and permits were issued by the USFWS and CDFW in 2004. The MSHCP Plan Area encompasses approximately 1.26 million acres (approximately 1,967 square miles) in Western Riverside County and addresses 146 sensitive plant and animal species and the vegetation communities on which they depend. In total, 14 animal species and 11 plant species are designated by the USFWS as federally listed under FESA. Several of these species also have federally designated critical habitat within the MSHCP jurisdiction (USFWS 2020). The MSHCP encompasses the City and many other city, county, and state entities. It should be noted that the listing status of plants and animals may change over time, with species added or removed from listing. The Biological Resources Technical Report prepared for the project describes the species used to define the original planning subunits (Appendix C).

The MSHCP originally set a target Conservation Area of 500,000 acres for Western Riverside County that included the following: (1) conservation of existing publicly owned lands; (2)

voluntary acquisition of privately held lands by the cities, the county, or other involved agencies; (3) voluntary acquisition of privately held lands by state or federal agencies; and (4) contribution from public and private development. The Implementing Agreement for the MSHCP between the City and other appropriate implementing agencies outlined a strategy for assembling the 500,000-acre MSHCP Conservation Area. Local implementing agencies would be responsible for contributing approximately 97,000 acres of Additional Reserve Lands through the development review process. If it is determined that all or a portion of a property is needed for inclusion as Additional Reserve Lands, various incentives may be available to the property owner in lieu of or in addition to monetary compensation in exchange for conveyance of property interest, such as development rights.

Approval of the MSHCP and execution of the Implementing Agreement by the USFWS and CDFW allows the agencies to issue take authorizations, including the City. Issue of take authorization to the City would allow implementation of land use decisions consistent with the MSHCP without project-by-project review and permitting by the USFWS and CDFW.

3.4.3 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a significant impact related to would occur if the project would (CEQA Guidelines, Section 15000 et seq.):

1. Have a substantial adverse effect, either directly or through habitat modifications, on any plant 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
2. Have a substantial adverse effect, either directly or through habitat modifications, on any animal 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
3. 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;
4. 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
5. Interference 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

6. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance
7. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan

3.4.4 Environmental Analysis

3.4.4.1 Threshold 1: Sensitive Plant Species

Would the project have a substantial adverse effect, either directly or through habitat modifications, on any plant 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?

Impact Analysis

Direct Impacts

Sensitive plant species have been documented in the water service area. Implementation of the projects included in the 2018 RWMP in developed/disturbed land would not impact sensitive plant species. Although the likelihood is low, implementation of some projects included in the 2018 RWMP in undeveloped areas have the potential to impact sensitive plant species. The WRCRWA Booster Pump Station, WRCRWA Transmission Pipeline, WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline projects are proposed on undeveloped sites that may contain sensitive plant species. The WRCRWA Booster Pump Station and WRCRWA Transmission Pipeline projects were previously evaluated under CEQA in the 2016 Proposition 1 IS/MND (City of Corona 2016). No further analysis of these projects is required or provided in this PEIR. The WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites contain non-native grassland habitat that could support sensitive plant species. Impacts to non-native grassland habitat that could support sensitive plant species on the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites would be potentially significant.

Indirect Impacts

Indirect impacts may occur during the construction of the projects included in the 2018 RWMP and post-construction operations. Potential indirect impacts to sensitive plant species from implementation of the project include colonization of invasive plant species and fugitive dust. The majority (25 of 29) of the projects anticipated in the 2018 RWMP would be situated in currently developed (non-sensitive) areas of the water service area. However, the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline projects are planned on non-native grassland habitat that may support sensitive plant species. These three projects have the potential

to result in indirect impacts on sensitive plants from invasive plant species and fugitive dust; such impacts are further discussed below.

Invasive Plant Species

Non-native plants may colonize sites disturbed by demolition and construction and may spread into adjacent native vegetation communities. Some non-native plants are highly invasive and can disrupt native habitats by reducing native and sensitive species diversity, potentially increase flammability and fire frequency, change ground and surface water levels, and potentially adversely affect native animals that are dependent on native plant species.

Colonization by non-native plant species in the vegetated areas that may support sensitive plant species on the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites would be a potentially significant impact.

Fugitive Dust

Fugitive dust produced during construction may disperse onto sensitive vegetation adjacent to the project sites that could support sensitive plant species. The resulting dust cover may reduce native plant productivity, displacing native vegetation, reducing diversity, and affecting animals dependent on the vegetation.

Air quality impacts during construction, including fugitive dust, are analyzed in Section 3.3, Air Quality. The analysis concluded that no significant impacts would result from implementation of the projects included in the 2018 RWMP. The project would avoid indirect impacts to sensitive plants and animals from fugitive dust by implementing standard air quality control measures and National Pollutant Discharge Elimination System regulations required by construction specifications to effectively reduce fugitive dust during construction. The control measures may include but are not limited to the application of soil stabilizers (water) to disturbed areas, termination of soil disturbance during high wind events, and covering of material stockpiles. Applicable construction best management practices would also be implemented. Therefore, fugitive dust impacts would be less than significant, and no mitigation is required.

Level of Significance Before Mitigation

Implementation of the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline projects would have potentially significant direct and indirect impacts on plant species identified as candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by the CDFW or USFWS (shown in Table 3.4-1).

Mitigation Measures

Survey Requirements

Implementation of Mitigation Measure BIO-1 would require sensitive plant species surveys on the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites.

BIO-1: **Sensitive Plant Species Surveys.** If one or more sensitive plant species has the potential to occur on the Western Riverside County Regional Wastewater Authority Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites, focused species surveys shall be conducted before construction to determine the presence and absence of these species to adequately evaluate potential direct or indirect impacts to these species.

Sensitive plant species surveys shall be conducted by a qualified biologist retained by the City of Corona during the appropriate season to detect the species as part of the project design phase. Surveys shall be floristic in nature and include lists of the plants identified in the survey area. Surveys shall be conducted on foot, employing a level of effort sufficient to provide comprehensive coverage. The locations and prevalence (estimated total numbers and percent cover, as applicable) of sensitive plants shall be recorded. The sensitive plant species surveys shall be valid for 3 years.

If site-specific surveys are not required because a survey was conducted within the last 3 years, impact assessment and minimization and mitigation requirements shall be based on the most recent available survey. These requirements shall also include an analysis of the potential for sensitive plant species to occur on site based on existing site conditions and shall be consistent with the most recent U.S. Fish and Wildlife Service and California Department of Fish and Wildlife survey protocols.

If sensitive plant species are observed, they shall be avoided if possible. If species cannot be avoided, impacts shall be mitigated through conservation of habitat that supports the impacted species in accordance with Mitigation Measures BIO-2 and BIO-3.

Habitat Mitigation Requirements

Permanent Impacts

Implementation of Mitigation Measure BIO-2 would reduce permanent impacts to non-native grassland that could support sensitive plant species on the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites to less than significant.

BIO-2: **Permanent Impacts to Non-Native Grassland.** Permanent impacts to sensitive non-native grassland shall be mitigated through the preservation of habitat, habitat creation, or enhancement, or combination thereof, in the City of Corona or off site through habitat acquisition and preservation or purchase of credits from an approved conservation bank. Mitigation for impacts to non-native grassland shall be in-kind using native grasses. Permanent impacts to sensitive non-native grassland shall be mitigated at a ratio of 0.5:1.

For on-site mitigation, a detailed Mitigation Plan shall be prepared before the start of construction (not applicable to mitigation met through the purchase of credits from an approved wetland mitigation bank). The Mitigation Plan shall include at a minimum the proposed location of the mitigation areas, site preparation, a plant palette, installation procedures, success criteria, fencing and signage, monitoring requirements, and other details of the habitat restoration effort and shall be prepared by a qualified biologist.

Temporary Impacts

Implementation of Mitigation Measure BIO-3 would reduce temporary impacts to non-native grassland that could support sensitive plant species to less than significant.

BIO-3: **Temporary Impacts to Non-Native Grassland.** Temporary impacts to non-native grassland shall be restored in place or elsewhere on the project site at a 1:1 replacement ratio using native grass species.

A Revegetation Plan shall be prepared. The Revegetation Plan shall include site preparation specifications, a plant palette, installation procedures, development of reasonable success criteria, appropriate monitoring and reporting protocols, implementation timelines, and contingency measures in the event of restoration failure. The City of Corona shall provide guidance for and oversight of the Revegetation Plan and implementation.

In the event that non-native grassland vegetation cannot be restored in place or elsewhere on the project site after construction, these impacts would be considered permanent, and Mitigation Measure BIO-2 would be implemented.

The 0.5:1 permanent impacts and 1:1 temporary impacts mitigation ratios for the project would follow the accepted ratios established by the Western Riverside County Multiple Species Habitat Conservation Plan to reduce potentially significant impacts to sensitive vegetation communities to less than significant.

Construction

Implementation of Mitigation Measures BIO-4, BIO-5, BIO-6, and BIO-7 would minimize construction impacts to sensitive plant species, including the spread of invasive non-native plant species, during the implementation of the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline projects.

BIO-4: **Invasive Plant Species Prevention.** During construction of the Western Riverside County Regional Wastewater Authority Flow Control Improvements, Promenade Pipeline, and Research Pipeline projects, the following measures shall be implemented to minimize the spread of invasive plant species:

- Construction equipment shall be cleaned before coming to the project sites.
- Weed-free straw wattles shall be used for erosion control.

BIO-5: **Flagging and Fencing.** If sensitive biological resources are identified on or adjacent to the Western Riverside County Regional Wastewater Authority Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites, the construction limits shall be clearly identified on construction drawings and flagged on the project sites to ensure impacts to sensitive biological resources are avoided or minimized to the extent feasible. Before implementing construction activities, a qualified biologist shall verify that the flagging clearly delineates the construction limits and sensitive resources to be avoided.

BIO-6: **Contractor Training Program.** If sensitive biological resources are known to occur on or adjacent to the Western Riverside County Regional Wastewater Authority Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites, a project-specific contractor training program shall be developed and implemented to educate project contractors on the sensitive biological resources on and adjacent to the project sites and measures being implemented to avoid or minimize impacts to these species. A qualified biologist shall develop and implement the contractor training program.

BIO-7: **Biological Monitor.** If sensitive biological resources are present on or adjacent to the Western Riverside County Regional Wastewater Authority Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites, and impacts may occur from implementation of construction activities, a qualified biological monitor may be required during all or a portion of the construction activities to ensure impacts to the sensitive biological resources are avoided or minimized to the extent feasible. The specific biological monitoring requirements shall be evaluated on a project-by-project basis. The qualified biological monitor shall be approved by the City

of Corona based on applicable experience with the sensitive biological resources that may be impacted.

Level of Significance After Mitigation

With implementation of Mitigation Measures BIO-1 through BIO-7, impacts to sensitive plant species identified as candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by the CDFW or USFWS from implementation of the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline projects would be reduced to a less than significant level.

3.4.4.2 Threshold 2: Sensitive Animal Species

Would the project have a substantial adverse effect, either directly or through habitat modifications, on any animal 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?

Impact Analysis

Direct Impacts

In total, 45 sensitive animal species have been documented in the water service area. Sensitive animal species have been documented in undeveloped areas near the WRCRWA Transmission Pipeline, WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites. The undeveloped areas on these project sites may contain sensitive animal species. The majority of sensitive animal species, including least Bell's vireo and tri-colored blackbird (*Agelaius tricolor*), occur in the Santa Ana River floodplain adjacent to the WRCRWA Transmission Pipeline, which was previously evaluated under CEQA in the 2016 Proposition 1 IS/MND (City of Corona 2016). No further analysis of this project is required or provided in this PEIR. None of the other projects identified in the 2018 RWMP have the potential to impact least Bell's vireo or tri-colored blackbird. Therefore, impacts would not occur to these species as a result of project implementation.

Non-native grassland vegetation on the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites has the potential to support sensitive animal species. A query requested in the Riverside County Integrated Project Conservation Summary Report Generator found that the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites contain potentially suitable habitat for burrowing owl. Based on habitat requirements and the availability and quality of the habitats on site, it was determined that the burrowing owl is presumed to have a low likelihood of occurring due to the lack of suitable habitat and existing development and disturbance. The conservation goals of the Western Riverside County MSHCP require that burrowing owl remain absent from the project sites. If burrowing owl were found on the

WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites, a potential impact would occur.

Nesting Birds

Federal- and state-protected nesting birds have the potential to occur on or adjacent to the projects included in the 2018 RWMP, including projects in developed/disturbed land. Implementation of the projects included in the 2018 RWMP would have the potential to impact nesting birds (including raptors) through direct removal of nesting habitat and through disturbance to nesting birds from substantial sources of noise generated at the start of new construction during the nesting season. Construction activities that begin during the raptor nesting season and general bird nesting season (January 15 through September 15) would have the potential to significantly impact nesting birds protected under the MBTA and CFG Code.

Critical Habitat

Critical habitat for least Bell's vireo, southwestern willow flycatcher, and Santa Ana sucker primarily occurs in the Santa Ana River floodplain adjacent to the WRCRWA Transmission Pipeline, which was previously evaluated under CEQA in the 2016 Proposition 1 IS/MND (City of Corona 2016) (Figure 3.4-3). No further analysis of this project is required or provided in this PEIR. No other projects identified in the 2018 RWMP have the potential to impact critical habitat for least Bell's vireo, southwestern willow flycatcher, or Santa Ana sucker. The majority of the critical habitat for coastal California gnatcatcher occurs outside of the water service area and would not be impacted by implementation of the projects included in the 2018 RWMP (Figure 3.4-3). Therefore, impacts would not occur to these species as a result of project implementation.

Indirect Impacts

Indirect impacts may occur during the construction of the projects included in the 2018 RWMP and post-construction operations. Potential indirect impacts from implementation of the project includes construction noise and nighttime lighting. The majority (25 of 29) of the projects anticipated in the 2018 RWMP would be situated in currently developed (non-sensitive) areas of the water service area. However, the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline projects are planned adjacent to and in sensitive non-native grassland habitat that may support sensitive animal species. These three projects have the potential to result in indirect impacts on sensitive animal species from noise and nighttime lighting, and such impacts are discussed further below.

Noise

Construction-related noise from clearing, grubbing, and grading may impact sensitive animals. Breeding birds and mammals may temporarily or permanently leave their territories to avoid direct impacts from construction activities, which may lead to reduced reproductive success and

increased mortality. Indirect noise impacts would be considered significant for state- or federally listed species and for nesting raptors and birds protected by the CFG Code and MBTA. Nesting raptors may also be affected by noise from construction activity. Construction activity that commences during the nesting season within 500 feet of an active raptor nest would result in a significant impact to sensitive animal species and nesting birds. A Construction Noise Management Plan would be implemented in the projects included in the 2018 RWMP with Mitigation Measure NOI-1, detailed in Section 3.13, Noise. Implementation of Mitigation Measure NOI-1 would incorporate best management practices into project construction so that noise levels would not be an excessive nuisance to humans and animals. Therefore, indirect noise impacts to sensitive animal species would be less than significant.

Lighting

Nighttime lighting during construction has the potential to spill into native vegetation communities, exposing animal species to an unnatural light regime and potentially altering their behavior patterns, which can result in lower reproductive success, reducing species diversity. In addition, nighttime lighting may provide nocturnal predators with an unnatural advantage over their prey. This may cause an increased loss in native animals that may be significant, especially for sensitive species that may occur. Temporary construction lighting that spills into undeveloped areas would be potentially significant where these areas are not currently affected by lighting. Therefore, indirect impacts from nighttime lighting would have the potential to result in a significant impact to sensitive animal species.

Level of Significance Before Mitigation

Implementation of the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline projects would result in potentially significant direct impacts on burrowing owl and nesting birds, which are identified as candidate, sensitive, or special-status species by the CDFW or USFWS (shown in Table 3.4-2). Implementation of the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline projects would result in potentially significant indirect impacts from noise and nighttime lighting on burrowing owl and nesting birds, which are identified as candidate, sensitive, or special-status species by the CDFW or USFWS.

Mitigation Measures

Burrowing Owl

Implementation of Mitigation Measure BIO-8 would require burrowing owl clearance surveys on the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites to reduce potential impacts to burrowing owl to less than significant.

BIO-8: **Burrowing Owl Surveys.** A burrowing owl clearance survey shall be conducted before any ground-disturbing activities in accordance with the California Department of Fish

and Wildlife 2012 Staff Report on Burrowing Owl Mitigation. Two preconstruction clearance surveys shall be conducted 14–30 days and 24 hours before ground-disturbing activities to document the continued absence of burrowing owl from the project sites. The burrowing owl surveys shall be valid for 1 year.

Nesting Birds

Implementation of Mitigation Measure BIO-9 would reduce potential impacts to nesting birds protected by the CFG Code and MBTA to less than significant.

BIO-9: **Preconstruction Nesting Bird Surveys.** To the extent feasible, grubbing, trimming, or clearing of vegetation from project sites shall not occur during the general bird nesting season (January 15 through September 15). If grubbing, trimming, or clearing of vegetation cannot feasibly occur outside of the general bird nesting season, a qualified biologist shall perform a preconstruction nesting bird survey at project sites with vegetation supporting nesting birds. Nesting bird surveys shall occur within 10 days before the start of vegetation clearing or grubbing to determine if active bird nests are present. If no active bird nests are identified on the project sites or within a 300-foot buffer of the project sites, no further mitigation is necessary. If active nests of bird species covered by the Migratory Bird Treaty Act are detected on the project site during the 10-day preconstruction survey, construction activities should stay outside of a 300-foot buffer around the active nest. For raptor species, this buffer is expanded to 500 feet. It is recommended that a biological monitor be present to delineate the boundaries of the buffer area and to monitor the active nest to ensure that nesting behavior is not adversely affected by the construction activity. Once the young have fledged, and a qualified biologist has determined the nest is inactive, normal construction activities can occur.

Construction Lighting

Construction is expected is occur primarily during the daylight hours. However, if night work is needed near sensitive biological resources, implementation of Mitigation Measure BIO-10 shall be implemented at the project sites to reduce potential nighttime lighting impacts to sensitive animal species to less than significant.

BIO-10: **Night Lighting.** If temporary night lighting is necessary during construction adjacent to sensitive vegetation communities, construction contractors shall ensure lights are directed away from sensitive vegetation communities and shielded to minimize temporary lighting of the surrounding habitat and should be of the lowest illumination necessary for human safety.

Level of Significance After Mitigation

With implementation of Mitigation Measures BIO-5 through BIO-10, impacts to sensitive animal species identified as candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by the CDFW or USFWS would be reduced to a less than significant level.

3.4.4.3 Threshold 3: Riparian Habitat or Other Sensitive Natural Community

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

Impact Analysis

Direct Impacts

The WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline are proposed in undeveloped, non-native grassland vegetation. The WRCRWA Transmission Pipeline is proposed adjacent to undeveloped land, riparian forest, and the Santa Ana River. The WRCRWA Transmission Pipeline was previously evaluated under CEQA in the 2016 Proposition 1 IS/MND (City of Corona 2016). No further analysis of this project is required or provided in this PEIR.

Potentially significant impacts to one sensitive vegetation community, non-native grassland, could result during the implementation of the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline. As described in Mitigation Measure BIO-2, a mitigation ratio of 0.5:1 would be applied following the accepted ratios established by the Western Riverside County MSHCP to reduce potentially significant impacts to sensitive vegetation communities to less than significant. Temporary impacts to non-native grassland would be restored in place or elsewhere on the project site at a mitigation ratio of 1:1, as described in Mitigation Measure BIO-3.

Impacts to non-native grassland totaling less than 0.10 acre per construction phase would not be considered significant and would not require mitigation under CEQA because the small size of the impact would not be considered a substantial adverse effect. Exceptions to the previously described thresholds would be for projects impacting habitat occupied by federally or state-listed endangered or threatened species, which would be considered significant regardless of the acreage impacted.

No other direct impacts to sensitive vegetation communities would result from implementation of the remaining projects included in the 2018 RWMP.

Indirect Impacts

Indirect impacts may occur during the construction of the projects included in the 2018 RWMP and post-construction operations. Potential indirect impacts to sensitive vegetation communities from implementation of the project includes decreased water quality (e.g., through sedimentation,

contaminants, or fuel release). The majority (25 of 29) of the projects anticipated in the 2018 RWMP would be situated in currently developed (non-sensitive) areas of the water service area. However, the WRCRWA Booster Pump Station, WRCRWA Transmission Pipeline, WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline projects are planned in non-native grassland habitat. As previously discussed, the WRCRWA Booster Pump Station and WRCRWA Transmission Pipeline projects were previously evaluated under CEQA in the 2016 Proposition 1 IS/MND (City of Corona 2016). No further analysis of these projects is required or provided in this PEIR.

In Section 3.10, Hydrology and Water Quality, this PEIR analyzes potential water quality impacts from implementation of projects included in the 2018 RWMP and concludes that impacts would be less than significant because they would comply with the applicable policies and regulations pertaining to water quality. Therefore, water quality impacts to sensitive vegetation communities would be less than significant.

Level of Significance Before Mitigation

Implementation of the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline projects would have potentially significant direct impacts on a sensitive natural community identified in local or regional plans, policies, or regulations or by the CDFW or USFWS.

Mitigation Measures

Implementation of Mitigation Measure BIO-11 would minimize impacts to sensitive non-native grassland vegetation associated with the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline projects. Mitigation Measures BIO-2 and BIO-3 would reduce permanent and temporary impacts to non-native grassland to a less than significant level.

Temporary Impacts

Implementation of Mitigation Measure BIO-11 would reduce temporary impacts to non-native grassland to less than significant.

BIO-11: **Biological Resources Survey/Habitat Assessment.** For projects proposed in the 2018 Reclaimed Water Master Plan on undeveloped land, including the Western Riverside County Regional Wastewater Authority Flow Control Improvements, Promenade Pipeline, and Research Pipeline, a site-specific biological resources survey shall be conducted during the project design phase. The biological resources survey shall be conducted by a qualified biologist and shall include but not be limited to the following:

- An analysis of available literature and biological databases, such as the California Natural Diversity Database, to determine sensitive biological resources that have been reported historically from the proposed project vicinity.
- A review of current land use and land ownership within the project vicinity.
- An assessment and mapping of vegetation communities present within the proposed project vicinity. If vegetation community mapping has not been conducted on the site in the previous 3 years, updated vegetation mapping shall be conducted by a qualified biologist as part of the project planning and environmental review process. Vegetation communities shall be mapped according to the Manual of California Vegetation at the alliance level, and a crosswalk table with Holland vegetation communities shall be provided.
- A general assessment of the potential for aquatic resources, including wetlands and riparian habitats, to occur on site.
- An evaluation of potential local and regional wildlife movement corridors.
- If the project sites support vegetation communities that may provide habitat for plant or animal species, a focused habitat assessment conducted by a qualified biologist to determine the potential for sensitive plant or animal species to occur on or adjacent to the project sites.

The results of the biological survey shall be presented in a biological survey letter report.

Level of Significance After Mitigation

With implementation of Mitigation Measures BIO-2, BIO-3, and BIO-11, impacts to sensitive natural communities would be reduced to a less than significant level.

3.4.4.4 Threshold 4: Jurisdictional Aquatic Resources

Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Impact Analysis

Implementation of the projects included in the 2018 RWMP is not expected to impact jurisdictional aquatic resources. The WRCRWA Transmission Pipeline is adjacent to the Santa Ana River and has been designed to avoid riparian habitat and jurisdictional aquatic resources (City of Corona 2016). The WRCRWA Transmission Pipeline was previously evaluated under CEQA in the 2016 Proposition 1 IS/MND (City of Corona 2016). No further analysis of this project is required or provided in this PEIR.

The WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline are proposed on undeveloped land that could support jurisdictional aquatic resources, although unlikely. During implementation of Mitigation Measure BIO-11, if the potential for jurisdictional aquatic resources to occur on the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites is identified, impacts to state or federally protected jurisdictional aquatic resources could occur through direct removal, filling, hydrological interruption, or other means. Impacts to jurisdictional aquatic resources could be considered significant under CEQA depending on the type of aquatic resource and the extent of the proposed impact.

Level of Significance Before Mitigation

In the event that state- or federally protected jurisdictional aquatic resources are identified on the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites, impacts would be potentially significant.

Mitigation Measures

In the event that jurisdictional aquatic resources are identified during implementation of Mitigation Measure BIO-11, Mitigation Measures BIO-12 and BIO-13 shall be implemented.

BIO-12: **Aquatic Resources Delineation.** If sensitive aquatic resources are identified on the Western Riverside County Regional Wastewater Authority Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites, a qualified biologist shall conduct an aquatic resources delineation following the methods outlined in the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual and the Regional Supplement to the U.S. Army Corps of Engineers Wetland Delineation Manual: Arid West Region to map the extent of wetlands and non-wetland waters, determine jurisdiction, and assess potential impacts. The results of the delineation shall be presented in an Aquatic Resources Delineation Report and shall be incorporated into the California Environmental Quality Act documents required for approval and permitting of the proposed project.

BIO-13: **Aquatic Resources Permitting.** If the Western Riverside County Regional Wastewater Authority Flow Control Improvements, Promenade Pipeline, and Research Pipeline projects would impact sensitive aquatic resources, permits and authorizations shall be obtained from the U.S. Army Corps Engineers, California Department of Fish and Wildlife, or Regional Water Quality Control Board. The regulatory agency authorizations would include impact avoidance and minimization measures and mitigation measures for unavoidable impacts. Specific avoidance, minimization, and mitigation measures for impacts to jurisdictional resources shall be determined through discussions with the regulatory agencies during the proposed project permitting process

and may include monetary contributions to a mitigation bank or habitat creation, restoration, or enhancement.

Level of Significance After Mitigation

With implementation of Mitigation Measures BIO-12 and BIO-13, impacts to state- or federally protected aquatic resources through direct removal, filling, hydrological interruption, or other means would be reduced to a less than significant level.

3.4.4.5 Threshold 5: Wildlife Corridors and Linkages

Would the project substantially interfere 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?

Impact Analysis

As discussed under Wildlife Corridors and Linkages in Section 3.4.1.2, important wildlife corridors occur in the northern and western portions of the water service area. The Santa Ana Mountains are an important north–south wildlife corridor; however, no projects identified in the 2018 RWMP are proposed in the Santa Ana Mountains. The Santa Ana River floodplain is an important east–west wildlife corridor. The WRCRWA Transmission Pipeline crosses the Santa Ana River, which is a regional wildlife movement corridor; however, the pipeline would be installed in the existing paved road right-of-way and would not impact the Santa Ana River. The WRCRWA Transmission Pipeline was previously evaluated under CEQA in the 2016 Proposition 1 IS/MND (City of Corona 2016). No further analysis of this project is required or provided in this PEIR. No other projects identified in the 2018 RWMP are proposed in the Santa Ana River floodplain.

Level of Significance Before Mitigation

Implementation of the projects included in the 2018 RWMP would have less than significant impacts to movement of any native resident or migratory fish or animal species or with established native resident or migratory wildlife corridors, or impede the use of native animal nursery sites.

Mitigation Measures

No mitigation is required.

Level of Significance After Mitigation

Because no mitigation measures are required, impacts would remain less than significant.

3.4.4.6 Threshold 6: Local Policies and Ordinances

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

Impact Analysis

The project would comply with local policies and ordinances protecting biological resources in the City of Corona 2020–2040 General Plan (City of Corona 2020b). Section 3.4.2.3 outlines the City of Corona 2020–2040 General Plan goals and policies related to biological resources and implementation of the projects included in the 2018 RWMP.

As discussed in Section 3.4.4.4, the projects included in the 2018 RWMP would avoid, or if avoidance is not feasible, fully mitigate potential impacts to jurisdictional aquatic resources, thereby complying with the City of Corona 2020–2040 General Plan Goal ER-4, Policies ER-4.1 through ER-4.5, Goal ER-5, and Policies ER-5.1 through ER-5.5.

As discussed in Sections 3.4.4.1 through Sections 3.4.4.4, the projects' potential impacts to sensitive plants, animals, and vegetation communities would be less than significant with incorporation of Mitigation Measures BIO-1 through BIO-11. Therefore, the projects included in the 2018 RWMP would comply with the City of Corona 2020–2040 General Plan Goal ER-6 and Policies ER-6.1 through ER-6.5 regarding protection of plant and animal species and sensitive vegetation communities in the City and its Planning Area.

The projects included in the 2018 RWMP would be consistent with the conservation goals outlined in the Western Riverside County MSHCP. The projects' compliance with the Western Riverside County MSHCP is discussed in detail in Section 3.4.4.7. The project would result in less than significant impacts to biological resources with mitigation incorporated and is therefore compliant with the Western Riverside County MSHCP conservation planning goals and the City of Corona 2020–2040 General Plan Goal 7 and Policies 7.1 through 7.3.

No oak trees were identified on the project sites that would be impacted by implementation of the projects. Therefore, the project is not in conflict with the City of Corona 2020–2040 General Plan Goal ER-8 and Policies ER-8.1 through ER-8.5 or the Riverside County Oak Tree Management Guidelines (City of Corona 2020b; County of Riverside 1993).

The projects included in the 2018 RWMP do not propose development in the Temescal Canyon Plan Area, in the Santa Ana River, or other regional washes. Therefore, the projects included in the 2018 RWMP would not conflict with City of Corona 2020–2040 General Plan Goal ER-9 and Policies ER-9.1 through ER-9.12.

Implementation of the project would not result in conflicts with any local policies or ordinances protecting biological resources.

Level of Significance Before Mitigation

Implementation of the project would have less than significant impacts from conflicts with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

Mitigation Measures

No mitigation is required.

Level of Significance After Mitigation

Because no mitigation measures are required, impacts would remain less than significant.

3.4.4.7 Threshold 7: Regional Conservation Planning

Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Impact Analysis

As discussed in Section 3.4.2.3, the Western Riverside County MSHCP functions as a comprehensive, multi-jurisdictional plan that addresses biological and ecological diversity by conserving species and associated habitats while allowing approval of development in the County. It is the City's policy to comply with the Western Riverside County MSHCP in its consideration and approval of development projects, including the projects identified in the 2018 RWMP. Further, the City of Corona 2020–2040 General Plan incorporates compliance with the Western Riverside County MSHCP in the goals and policies used to guide development in the City and its Planning Area (City of Corona 2020b). The projects' compliance with the City of Corona 2020–2040 General Plan natural resources goals and policies was previously discussed in Section 3.4.4.6.

The avoidance, minimization, and mitigation measures proposed in Sections 3.4.4.1 through 3.4.4.7 would reduce potentially significant impacts to sensitive plant and animal species, sensitive vegetation communities, and jurisdictional aquatic resources to a less than significant level. Because the projects included in the 2018 RWMP would not contribute to the loss of sensitive vegetation or sensitive species, the project would comply with the Western Riverside County MSHCP. Therefore, before implementation of Mitigation Measures BIO-1 through BIO-13, potentially significant impacts would occur from conflicts with regional conservation plans, and mitigation would be required.

Level of Significance Before Mitigation

Before implementation of Mitigation Measures BIO-1 through BIO-13, the projects' potentially significant impacts to biological resources would result in conflicts with the Western Riverside County MSHCP and other regional conservation plans and would be potentially significant.

Mitigation Measures

Mitigation Measures BIO-1 through BIO-13 would reduce potentially significant impacts to biological resources to a less than significant level and avoid conflicts with the Western Riverside County MSHCP or other regional conservation plans.

Level of Significance After Mitigation

With implementation of Mitigation Measures BIO-1 through BIO-13, impacts from conflicts with the Western Riverside County MSHCP or other regional conservation plans would be less than significant.

3.4.5 Cumulative Impacts and Mitigation

The cumulative impact analysis for biological resources considers RWMP 2018 project development in conjunction with other development projects in the water service area and projects covered by the Western Riverside County MSHCP.

3.4.5.1 Cumulative Threshold 1: Sensitive Plant Species

The geographic context for the analysis of cumulative impacts to sensitive plant species is the area covered by the Western Riverside County MSHCP. A significant cumulative impact would occur if, in combination, cumulative projects would result in a substantial adverse impact on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by the CDFW or USFWS. All projects, including the 2018 RWMP, approved in the City's jurisdiction are required to be consistent with the City of Corona 2020–2040 General Plan natural resources goals and policies (City of Corona 2020b) and the Western Riverside County MSHCP and to provide mitigation for impacts to sensitive plant species as appropriate. As analyzed in Section 3.4.4.1, potentially significant project-level impacts to sensitive plant species would be reduced to a less than significant level with implementation of Mitigation Measures BIO-1 through BIO-7. Since cumulative projects and the 2018 RWMP would be required to meet or exceed the Western Riverside County MSHCP regional conservation requirements, and project-specific mitigation measures would be implemented to reduce the project's impacts to sensitive plant species to below a level of significance, the project's contribution would not be cumulatively considerable.

3.4.5.2 Cumulative Threshold 2: Sensitive Animal Species

The geographic context for the analysis of cumulative impacts to sensitive animal species is the area covered by the Western Riverside County MSHCP. A significant cumulative impact would occur if, in combination, cumulative projects would result in a substantial adverse impact on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by the CDFW or USFWS. All projects, including the 2018 RWMP, approved within the City's jurisdiction are required to be consistent with the City of Corona 2020–2040 General Plan natural resources goals and policies (City of Corona 2020b) and the Western

Riverside County MSHCP and to provide mitigation for impacts to sensitive animal species as appropriate. The 2018 RWMP, as with other cumulative projects, would be required to meet or exceed the Western Riverside County MSHCP regional conservation requirements. As analyzed in Section 3.4.4.2, potentially significant project-level impacts to burrowing owl and nesting birds would be reduced to a less than significant level with implementation of Mitigation Measures BIO-5 through BIO-10. Therefore, the project's contribution would not be cumulatively considerable.

3.4.5.3 Cumulative Threshold 3: Riparian Habitat or Other Sensitive Natural Community

The geographic context for the analysis of cumulative impacts to riparian habitat or other sensitive natural communities is the area covered by the Western Riverside County MSHCP. A significant cumulative impact would occur if, in combination, cumulative projects would have a substantial adverse impact on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the CDFW or USFWS. All projects, including the 2018 RWMP, approved within the City's jurisdiction are required to be consistent with the City of Corona 2020–2040 General Plan natural resources goals and policies (City of Corona 2020b) and the Western Riverside County MSHCP and to provide mitigation for impacts to riparian habitat and sensitive vegetation communities as appropriate. The 2018 RWMP, as with other cumulative projects, would be required to meet or exceed the Western Riverside County MSHCP regional conservation requirements. As analyzed in Section 3.4.4.3, potentially significant project-level impacts to non-native grassland habitat would be reduced to a less than significant level with implementation of Mitigation Measures BIO-2, BIO-3, and BIO-11. Therefore, the project's contribution would not be cumulatively considerable.

3.4.5.4 Cumulative Threshold 4: Jurisdictional Aquatic Resources

The geographic context for the analysis of cumulative impacts to jurisdictional aquatic resources is the area covered by the Western Riverside County MSHCP. A significant cumulative impact would occur if, in combination, cumulative projects would have a substantial adverse impact on a state or federally protected wetland through direct removal, filling, hydrological interruption, or other means. All projects, including the 2018 RWMP, approved within the City's jurisdiction are required to be consistent with the City of Corona 2020–2040 General Plan natural resources goals and policies (City of Corona 2020b) and the Western Riverside County MSHCP and to provide mitigation for impacts to jurisdictional aquatic resources as appropriate. The 2018 RWMP, as with other cumulative projects, would be required to meet or exceed the Western Riverside County MSHCP regional conservation requirements and implement project-specific mitigation measures to reduce significant impacts. As analyzed in Section 3.4.4.4, potentially significant project-level impacts to jurisdictional aquatic resources would be reduced to a less than significant level with implementation of Mitigation Measures BIO-11, BIO-12, and BIO-13. Therefore, the project's contribution would not be cumulatively considerable.

3.4.5.5 Cumulative Threshold 5: Wildlife Corridors and Linkages

The geographic context for the analysis of cumulative impacts to wildlife corridors and linkages is the area covered by the Western Riverside County MSHCP. A significant cumulative impact would occur if, in combination, cumulative projects would interfere substantially with the movement of any native resident or migratory fish or animal species or with established native resident or migratory wildlife corridors, or impede the use of native animal nursery sites. All projects, including the 2018 RWMP, approved within the City's jurisdiction are required to be consistent with the City of Corona 2020–2040 General Plan natural resources goals and policies (2020b), the Western Riverside County MSHCP and to provide mitigation for impacts to wildlife corridors and linkages, as appropriate. The 2018 RWMP, as with other cumulative projects, would be required to meet or exceed the Western Riverside County MSHCP regional conservation requirements and implement project-specific mitigation measures to reduce significant impacts. As analyzed in Section 3.4.4.5, the project would have a less than significant impact to wildlife corridors and linkages, and no mitigation is required. Therefore, the project's contribution would not be cumulatively considerable.

3.4.5.6 Cumulative Threshold 6: Local Policies and Ordinances

The geographic context for the analysis of cumulative impacts to local policies and ordinances is the City. A significant cumulative impact would occur if, in combination, cumulative projects would conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. All projects, including the 2018 RWMP, approved within the City's jurisdiction are required to be consistent with the City of Corona 2020–2040 General Plan natural resources goals and policies (City of Corona 2020b) and the Western Riverside County MSHCP and to provide mitigation for conflicts with local policies and ordinances as appropriate. As analyzed in Section 3.4.4.6, with implementation of Mitigation Measures BIO-1 through BIO-13, the 2018 RWMP would have a less than significant impact from conflicts with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. No project-specific mitigation would be required. Therefore, the project's contribution would not be cumulatively considerable.

3.4.5.7 Cumulative Threshold 7: Regional Conservation Planning

The geographic context for the analysis of cumulative impacts to regional conservation planning is the area covered by the Western Riverside County MSHCP. A significant cumulative impact would occur if, in combination, cumulative projects would conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state HCP.

In 1991, the State of California passed the NCCP Act, providing for the long-term, regional conservation of natural vegetation and animal diversity. The biological conservation offered by

the Western Riverside County MSHCP provides sufficient habitat area, diversity, and linkages to allow the participating local jurisdictions to directly impact or "take" up to 146 sensitive plant and animal species in the region. These "covered species" identified in the MSHCP consist of species listed as endangered or threatened by the federal or state Endangered Species Acts and other regional rare but currently unlisted sensitive species.

The 2018 RWMP, as with other cumulative projects, would be required to meet or exceed the Western Riverside County MSHCP regional conservation requirements and provide mitigation for significant impacts as appropriate. Consistency with regional conservation plans and mitigation measures, as appropriate, must be demonstrated in order for the project and other cumulative projects to be approved. Mitigation Measures BIO-1 through BIO-13 would reduce project-level direct and indirect impacts on sensitive plants and animals, nesting birds, sensitive vegetation communities, and jurisdictional aquatic resources. Implementation of these mitigation measures would reduce project-level impacts and ensure the project would not contribute to cumulatively significant impacts from conflicts with regional conservation planning. The project would comply with the Western Riverside County MSHCP and would not contribute to loss of sensitive vegetation communities or sensitive species. Therefore, the project's contribution would not be cumulatively considerable.

3.4.6 Conclusion

Project implementation would result in potentially significant direct and indirect impacts to sensitive plant and animal species, nesting birds, sensitive vegetation communities, and jurisdictional aquatic resources.

Implementation of Mitigation Measures BIO-1 through BIO-7 would reduce potentially significant direct and indirect impacts to sensitive plant species on the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites. These mitigation measures would require preconstruction sensitive plant species surveys, mitigation ratios for permanent and temporary impacts to non-native grassland that could support sensitive plant species, and prevention of the spread of invasive plant species during construction. General construction mitigation measures, including flagging and fencing, a contractor training program, and a biological monitor, shall be implemented for the projects included in the 2018 RWMP to minimize potential impacts to sensitive plant species.

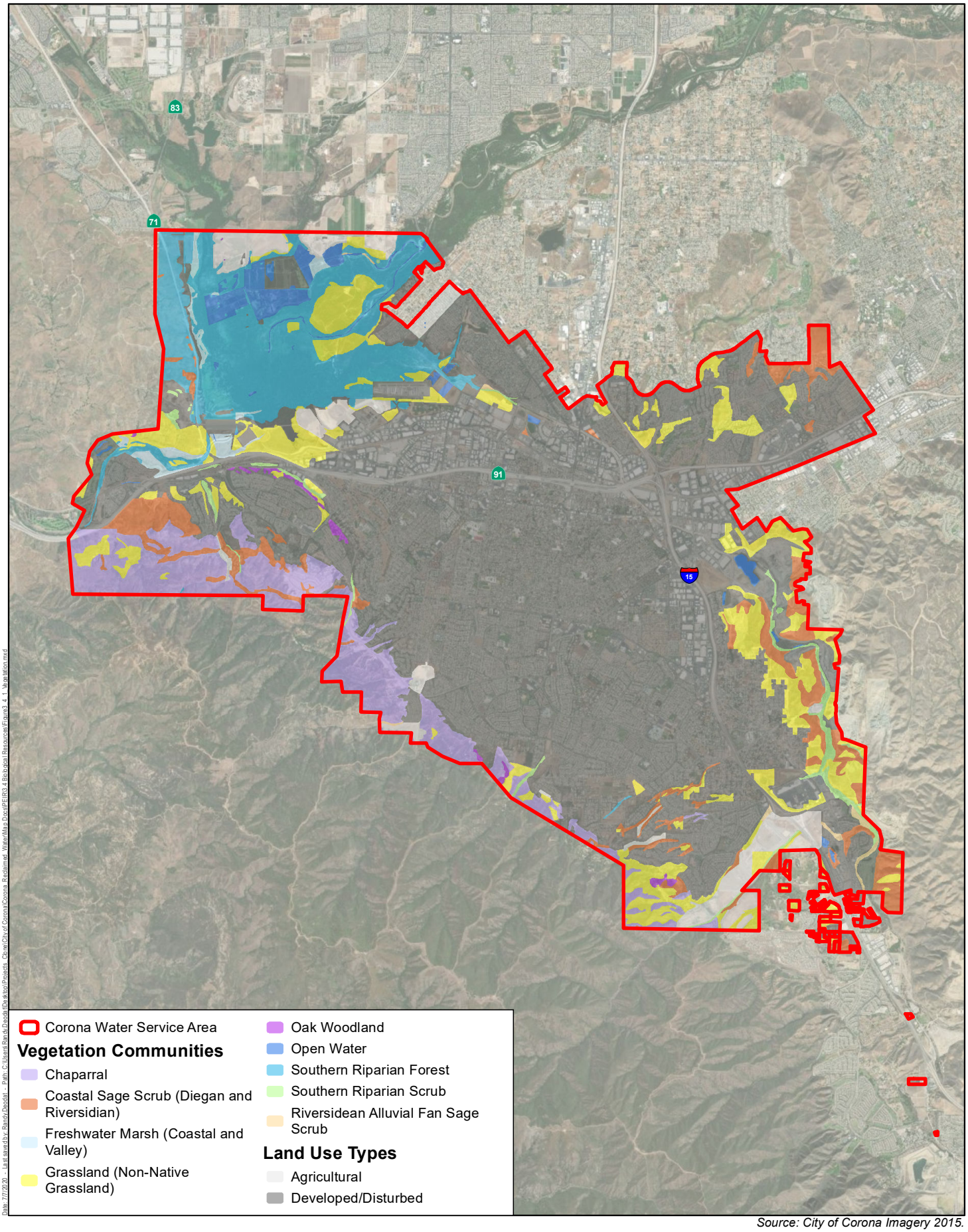
Implementation of Mitigation Measures BIO-5 through BIO-10 would reduce potentially significant impacts to sensitive animal species at the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites. General construction mitigation measures (Mitigation Measures BIO-5 through BIO-7), including flagging and fencing, a contractor training program, and a biological monitor, shall also be implemented for the projects included in the 2018 RWMP to minimize potential impacts to sensitive animal species. Potentially

significant impacts to non-native grassland that could support burrowing owl would be mitigated by requiring burrowing owl clearance surveys at the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites (Mitigation Measure BIO-8). Implementation of Mitigation Measure BIO-9 would reduce potentially significant impacts to nesting birds by conducting nesting bird surveys before construction of the projects included in the 2018 RWMP if construction activities occur during the general bird nesting season (January 15 through September 15). Potentially significant impacts to sensitive animal species from nighttime lighting during construction would be minimized with Mitigation Measure BIO-10 on the project sites.

Implementation of Mitigation Measures BIO-2, BIO-3, and BIO-11 would reduce potentially significant impacts to the non-native grassland sensitive vegetation community on the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites. Mitigation Measures BIO-2 and BIO-3 would implement mitigation and replacement ratios for permanent and temporary impacts to non-native grassland. Mitigation Measure BIO-11 would require habitat assessments, including vegetation mapping, to be conducted before construction of the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline projects.

Implementation of Mitigation Measures BIO-12 and BIO-13 would reduce potentially significant impacts to jurisdictional aquatic resources if identified on the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites during preconstruction habitat assessments (Mitigation Measure BIO-11). If jurisdictional aquatic resources are identified, aquatic resources delineations (Mitigation Measure BIO-12) and permitting (Mitigation Measure BIO-13) would be conducted before construction of the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline.

With implementation of Mitigation Measures BIO-1 through BIO-13, direct and indirect impacts to sensitive biological resources from implementation of the projects included in the 2018 RWMP would be reduced to a less than significant level.



Source: City of Corona Imagery 2015.

Harris & Associates

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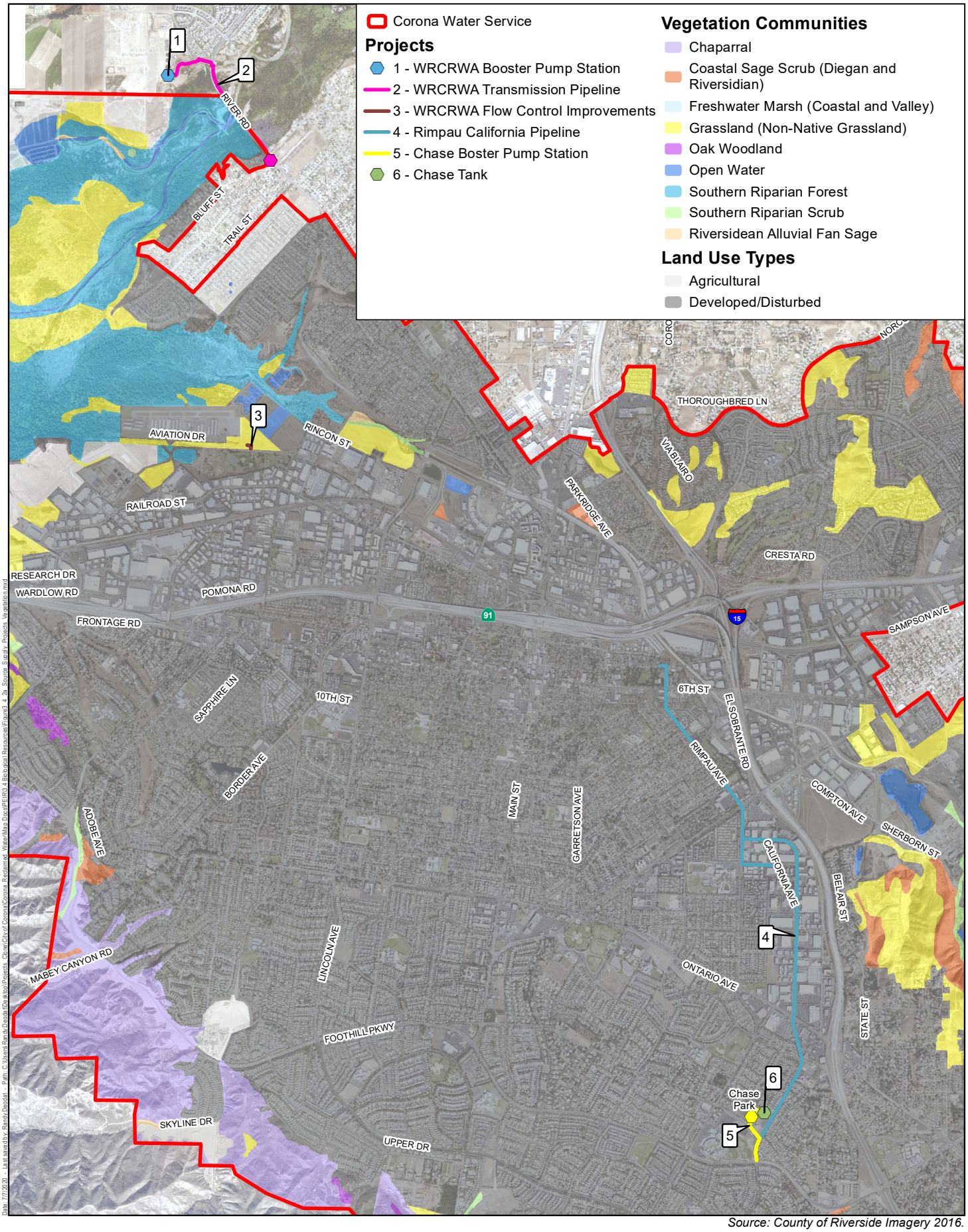
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Figure 3.4-1

Vegetation Communities - Overview

City of Corona 2018 Reclaimed Water Master Plan

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Source: County of Riverside Imagery 2016.

Harris & Associates

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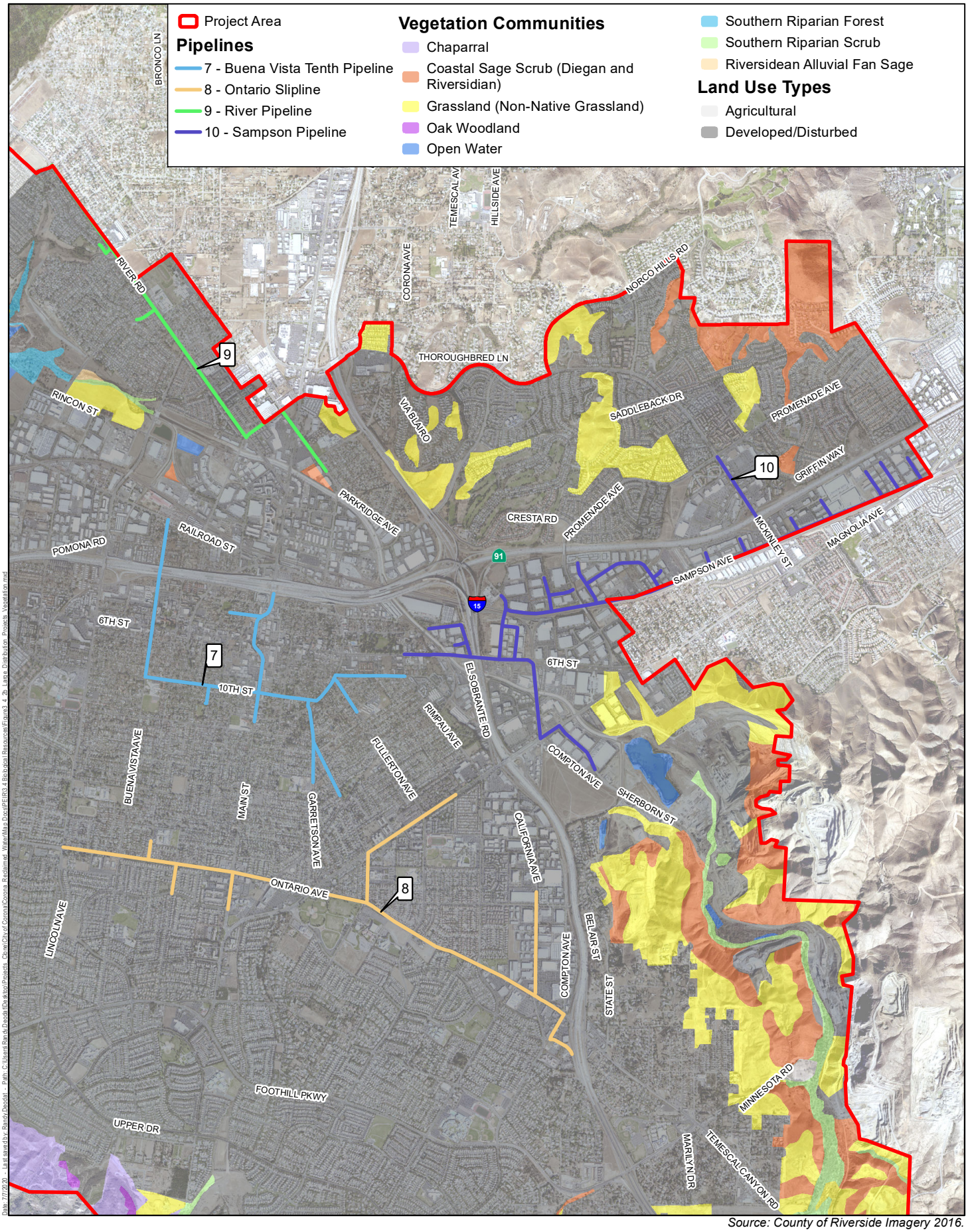
Feet

Figure 3.4-2a

Vegetation Communities, Source of Supply Projects

City of Corona 2018 Reclaimed Water Master Plan

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Source: County of Riverside Imagery 2016.

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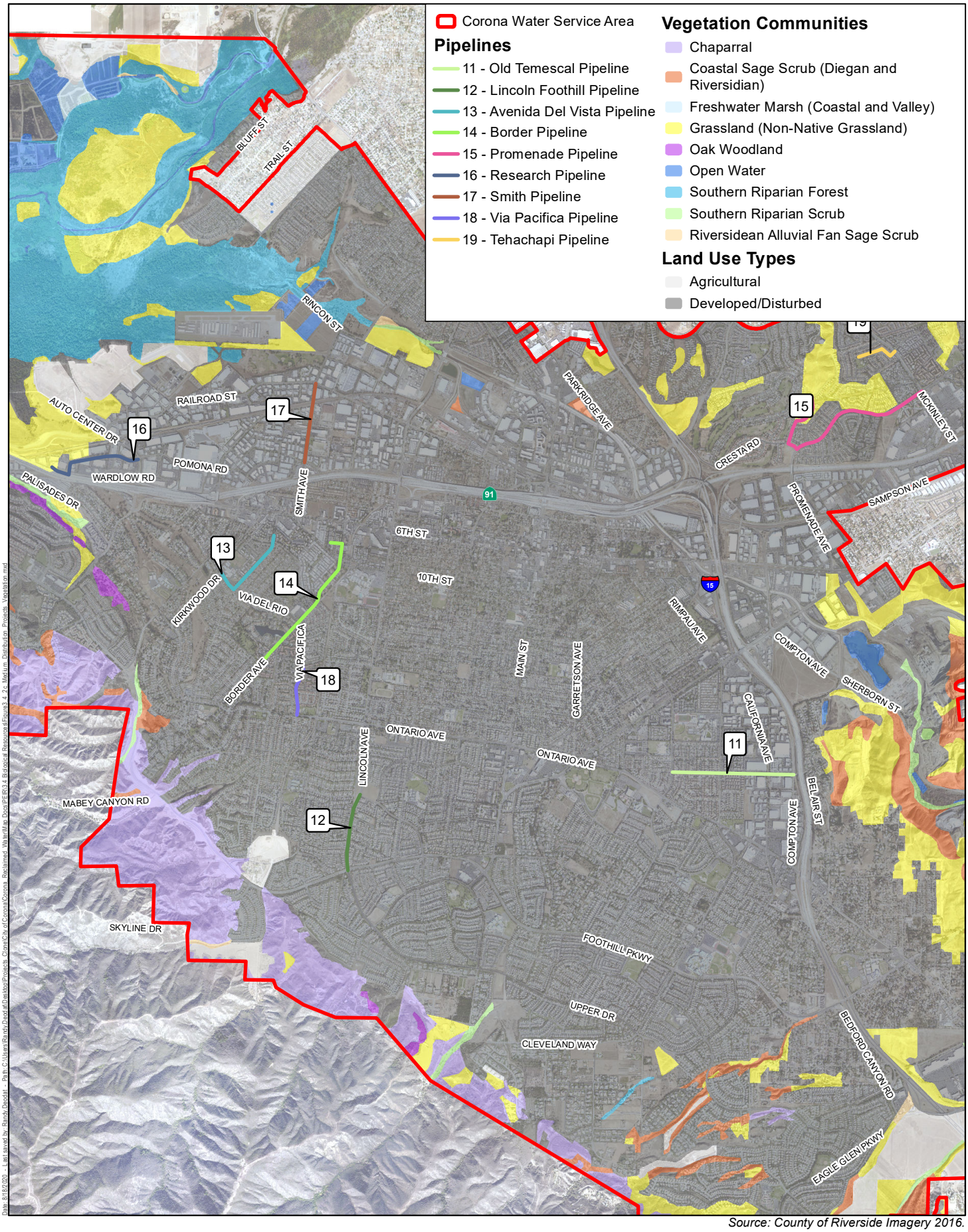
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Figure 3.4-2b

Vegetation Communities, Large Distribution Pipelines

City of Corona 2018 Reclaimed Water Master Plan

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Source: County of Riverside Imagery 2016.

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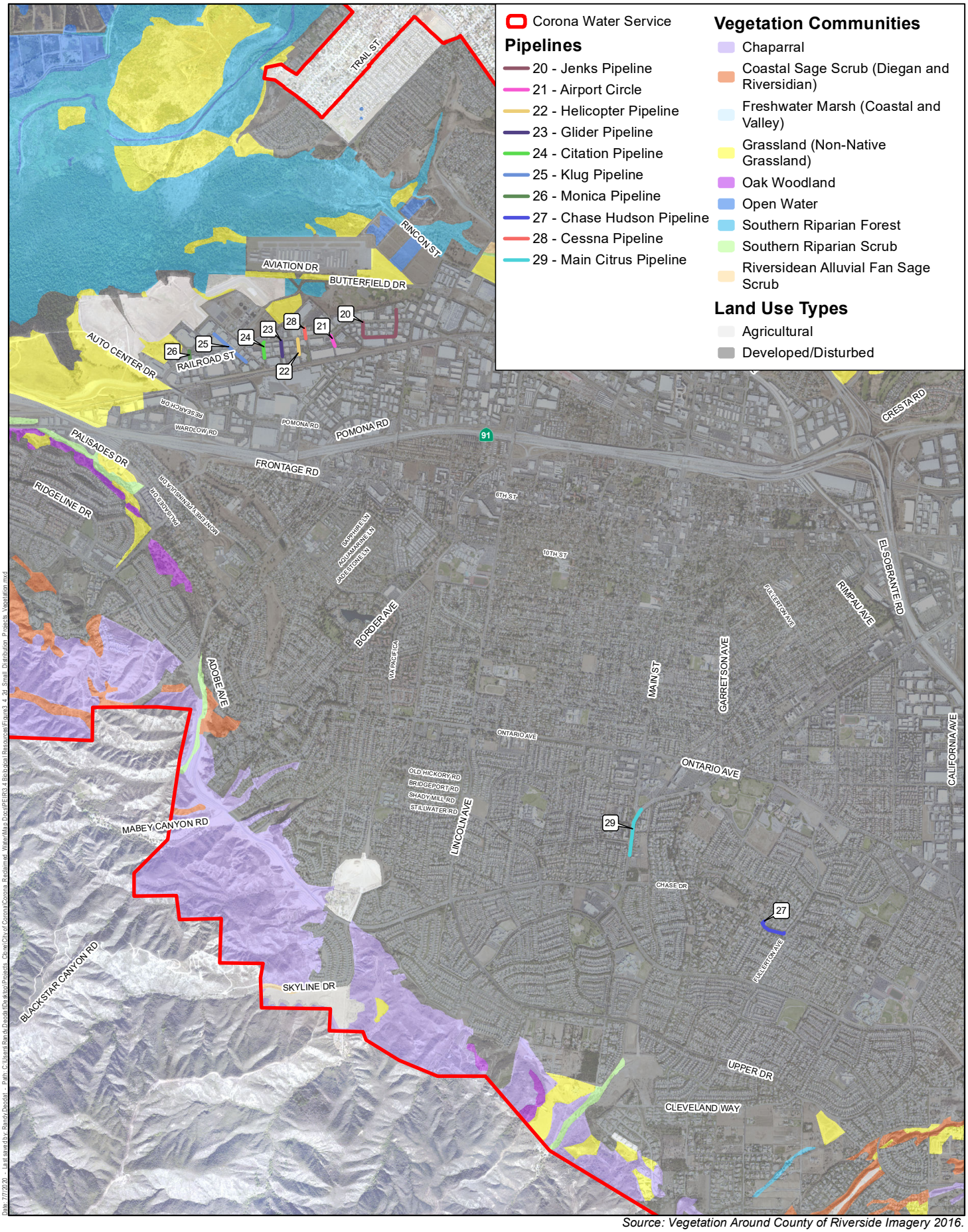
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Figure 3.4-2c

Vegetation Communities, Medium Distribution Pipelines

City of Corona 2018 Reclaimed Water Master Plan

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Source: Vegetation Around County of Riverside Imagery 2016.

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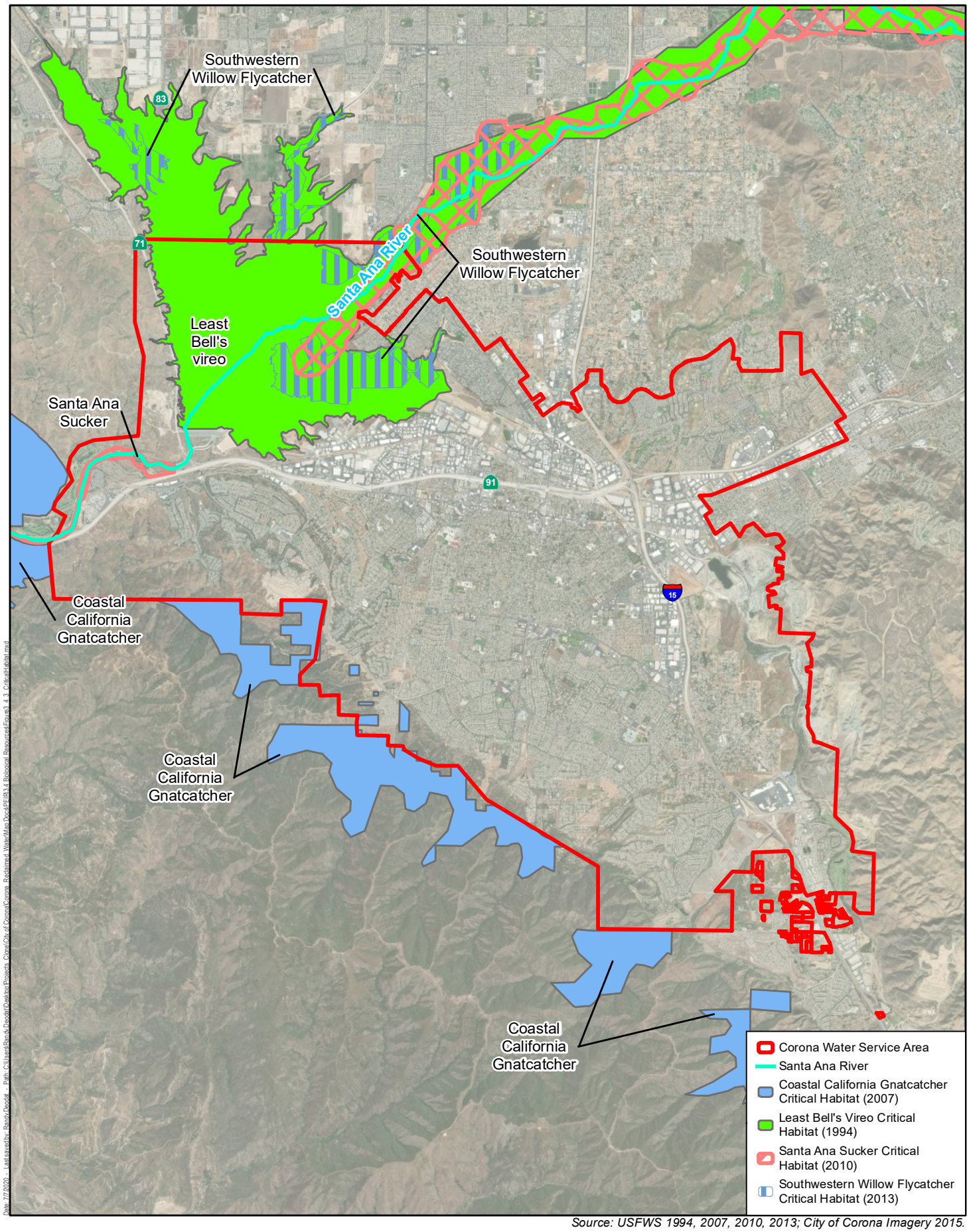
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Figure 3.4-2d

Vegetation Communities, Small Distribution Pipelines

City of Corona 2018 Reclaimed Water Master Plan

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Source: USFWS 1994, 2007, 2010, 2013; City of Corona Imagery 2015.

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Figure 3.4-3

Critical Habitat

City of Corona 2018 Reclaimed Water Master Plan

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3.5 Cultural Resources

This section discusses the potential impacts to potential cultural resources in the City of Corona's (City's) water service area that may result from implementation of the 2018 Reclaimed Water Master Plan (project or 2018 RWMP). The analysis in this section is based in part on the following information: Cultural and Tribal Cultural Resources Technical Report prepared by Red Tail Environmental (2020) for the project (Appendix D).

3.5.1 Environmental Setting

This section describes the environmental setting as it relates to cultural resources for the water service area. The project proposes reclaimed water facilities in various locations throughout the water service area.

3.5.1.1 Prehistoric Period

In the County of Riverside (County) and the surrounding area, there is no consensus on times or terms in which human occupation started. Overall, three general cultural periods are recognized: the Paleo-Indian Period, the Archaic Period, and the Late Prehistoric Period.

Paleo-Indian Period

As in most of North America, the Paleo-Indian Period is the earliest recognized period of California prehistory and coincides with the end of the late Pleistocene, circa 11,000 to 13,000 years before present. The environment was cool and moist, with deep pluvial lakes in the desert and basin lands. However, by the end of the late Pleistocene, the climate became warmer, causing glaciers to melt and sea levels to rise. Inland lakes began to recede and evaporate and there was a great deal of erosion in the coastal areas. The warmer climate also resulted in major vegetation changes and the extinction of Pleistocene megafauna (Appendix D).

Paleo-Indian sites have been identified across most of North America, often referred to as the "Clovis Complex." The Clovis Complex is defined by the use of large fluted projectile points and other large bifacial stone tools. In Southern California and the Colorado Desert, the Clovis Complex is referred to as the "Western Stemmed Point Tradition" and was characterized by leaf-shaped and large-stemmed projectile points, scrapers, and other stone tools. Overall, ground stone use was infrequent in San Dieguito archaeological remains, leading to the belief that the San Dieguito were highly mobile groups and their subsistence practices focused on the hunting of large game.

Several isolated fluted points have been recorded in Southern California, but none have been recorded near the water service area in associated with radiocarbon dates or in association with Pleistocene fauna (Appendix D).

No archaeological sites dating to the Paleo-Indian Period have been identified in the vicinity of the water service area. It is unknown if the lack of Paleo-Indian Period sites relates to a lack of archaeological data or is evidence that the vicinity of the water service area was a less sustainable area than the interior desert or the coastal regions. During this period, the desert interior may have been more suitable to prehistoric occupation than the interior valleys of Southern California, and it is more likely that Paleo-Indian populations in Southern California were centered on the coastal or interior desert regions or around the few large, reliable, drought-resistant water sources present in the inland valley areas (Appendix D).

Archaic Period

The Archaic Period in the vicinity of the water service area was defined by a lengthy time period with little change within the archaeological record. In contrast to the Paleo-Indian Period, the archaeological record in the Archaic Period consisted of a tool kit that focused on collection and processing of small plant seeds and hunting of a variety of medium and small game animals (Appendix D). Across Southern California, this period is often referred to as the "Millingstone Horizon" and is often divided into the Early, Middle, and Late Archaic Period.

There is a discrepancy on the start of the Millingstone Horizon, while Lightfoot and Parrish argues that early milling stone assemblages show that by 9,000 years ago milling tools were in use and that seeds and nuts must have been a dominant food source, other archaeologists argue that the Millingstone Horizon is generally attribute to the Middle to Late Holocene Period and has been identified across much of central and Southern California by ca. 8,000 to 7,000 years before present (Appendix D).

Interior archaeological sites from this period were thought to have been left by seasonally mobile groups with small settlements, based on the availability of food resources. There is little archaeological evidence for group size and type and use of habitation structures in the County for the Middle Holocene.

During this lengthy period, very little technological changes are identified in the archaeological record until approximately 5,000 years ago when there was an increase in sedimentation along the coast. This transformed the estuaries into shallow wetlands, closed several of the lagoons, transformed the coastal areas into sand and mudflats, and limited the kelp forests, causing the coastal region to have a lower level of subsistence resources than in the past. During this time, the deserts became more arid, and there was an increase in use of the inland valleys in the vicinity of the water service area (Appendix D).

Late Prehistoric Period

There are differing opinions between researchers as to whether the shift to the Late Prehistoric Period was caused by new technologies developed by people already living in the area, spurred by

changing environmental conditions, or if it was brought in by a migration of people into Southern California. Archaeological and anthropological evidence suggests that at approximately 1,500 to 1,350 years before present, Takic-speaking (speakers of Uto-Aztecan languages) groups from the Great Basin region moved into Riverside County, marking the transition to the Late Prehistoric Period. In all chronological schemes for Southern California, the Late Prehistoric Period lasted until significant European settlements were initiated in AD 1769.

The Late Prehistoric Period is defined by the introduction of the bow and arrow and ceramic vessels begin to appear at some sites. In addition, during this time, mortuary practices changed from inhumations to cremations. It is thought that this practice came from the north or east, and it is unknown if the transition from inhumations to cremations was adopted for religious or population reasons, or to control the spread of disease. Other hallmarks of the Late Prehistoric Period include an increase in the reliance on plant food sources, small projectile points, increase use of mortars and pestles, the use of obsidian from the Obsidian Butte source and overall an increase in the complexity and diversity of material cultural (Appendix D).

Many of the Late Prehistoric Period archaeological sites are inland and contain bedrock milling features, thought to relate to acorn or other seed processing. People lived in larger coastal and lower valley villages, that were located near permanent water sources. These villages acted as ceremonial and political centers, and may have been occupied, at least partially, year-round. Smaller villages and residential areas were inhabited seasonally and were located near subsistence resources or were used for specialized activities, especially in inland areas (Appendix D). This may have led to an increase in community size, longer stays at the major residences, and different societal organization.

3.5.1.2 Ethnohistory

During the Ethnohistoric period, the region that is currently known as the County of Riverside was a shared-use area and home to three closely related Takic-speaking groups: the Cahuilla, the Gabrielino, and the Luiseño/Juaneño. Settlement patterns for the three groups were very similar, with settlements typically in valley bottoms, along streams, or along coastal strands near mountain ranges. Villages were often in sheltered areas near good water supplies, in a defensive location, or on the side of warm thermal zone slopes. More information can be found in Section 3.18, Tribal Cultural Resources.

3.5.1.3 History

First called “South Riverside,” the City was founded in 1886 by the South Riverside Land and Water Company at the height of the Southern California citrus boom. In 1886, developer Robert Taylor and his partners, Adolph Rimpau, George L. Joy, A. S. Garretson, a Sioux City banker, and ex-governor of Iowa, Samuel Merrill, formed the South Riverside Land and Water Company. Together, they raised approximately $110,000 to purchase approximately 12,000 acres of

agricultural land that had formerly been part of the Rancho La Sierra, and Rancho Temescal land grants. Anaheim engineer H. C. Kellogg was hired, and the colony of South Riverside was laid out encircled by Grand Boulevard, a 100-foot-wide and 3-mile round that had plantings of shade trees along each side of the road. Another bonus was that the "colony" was located on the San Diego branch of the Santa Fe Railroad. To the north along the railroad tracks were the manufacturing plants and packing houses. The southern end of town was mostly occupied by the citrus industry. In 1889, the Temescal Water Company was incorporated to supply water for the new colony. This company purchased all the water-bearing lands in the Temescal valley and began drilling artesian wells. Taylor and his partners realized the importance of water for the soon to be developed community, and additional funds were used to ensure that sufficient water rights were obtained. They also secured the water rights to Temescal Creek, its tributaries and Lee Lake. Dams and pipelines were built to carry the water to the colony. After an initial flurry of expansion, water supplied from Temescal Canyon was not enough for the growing population and increasing agriculture. In 1899, the Corona Irrigation Company purchased 160 acres near Perris that had artesian waters. They constructed a 21-mile cement ditch to bring water to the area (Appendix D).

By 1893, the town boasted a large air-drying lumber yard, a clay and pipe works owned by the Pacific Clay Manufacturing Company, shipments of clay, gypsum, hay grain, and honey were being shipped out. Hundreds of acres of were planted in orange, lemon, and deciduous trees. There were three churches, Baptist, Methodist, and Congregational, and in addition, an Episcopalian group had purchased lots in town and were in the process of building their house of worship. There was a large two-story brick school, a bank, and a three-story hotel. In addition, there was a drug store, a newspaper, two bakeries, and a general merchandise store (Appendix D).

In addition to agricultural pursuits, mining also influence the early development of the City. A tin mine had been discovered in 1857 in the nearby San Jacinto Hills. However, mining in the area did not gain traction until 1888, as the City was the closest town to the mines and contained the most convenient rail depot, both supplies and workers arriving for the mines flowed through the City. While the actual tin mines only remained open for a short time, they brought additional development and residents to the City (Appendix D).

The City became known as the lemon capital of the world. Additional agricultural pursuits included other fruits and alfalfa. By the 1910s approximately a quarter of the residents were involved in the citrus industry. The lemon production spurred the creation of the Exchange By-Products Company, which processed lemons that were not used for food into citric acid, lemon oil, and other products. In addition to being known for its lemon production, the City began auto racing in 1913 at the Corona Road Races on Grand Boulevard. However, the auto race proved to be too dangerous and was stopped after several years. Agriculture remained the main economic activity for decades (Appendix D).

World War II prompted a change in the development of the City away from agriculture, as military bases within the region raised the population and created additional industries outside of agriculture. The Prado Dam, immediately west of the water service area, was completed in May 1941. The Prado Dam was constructed by the U.S. Army Corps of Engineers, Los Angeles District, along the lower Santa Ana River. The dam was constructed as a flood risk management measure, along with recreation and water conservation purposes (Appendix D).

Post-World War II housing needs increase development in the area, and by 1962, the Riverside Freeway (State Highway 91) was constructed through the City. Interstate 15 was constructed, to the east of the City in 1989. By the 1980s, Corona developed into a residential community and the population grew exponentially.

Historic development in the water service area began in the late 1800s in the vicinity of Grand Boulevard. Development in the water service area was focused around the Grand Boulevard circle through the 1920s. By the 1930s, additional development spread farther from Grand Boulevard and in El Cerrito. Through the 1940s, development continued to be focused along Grande Boulevard, south of 6th Street, and in El Cerrito and south of El Cerrito Road. The 1950s show a large increase of development in Coronita, in the City south of 6th Street and in the vicinity of El Cerrito. The 1960s shows the first large scale residential development of track homes in the water service area and this style development continued through the 1970s. The 1980s through the 2010s show a huge increase in development especially in the southern half of the City and along the northern boundary of the City (Appendix D).

3.5.1.4 Cultural Resources

Cultural resources are districts, buildings, sites, structures, areas of traditional use, or objects that represent the physical evidence of human activities. Cultural resources can be divided into two categories: archaeological resources (prehistoric and historic) and built environment resources (architectural). A record search of the California Historical Resources Information System held by the Eastern Information Center for the water service area and a one-quarter mile record search radius was requested on April 1, 2020. However, the Eastern Information Center is currently closed due to COVID-19, with no indication of when they may reopen, and it is unknown when the record search results may be available. Therefore, record search results from the City of Corona General Plan Update Cultural Resources Technical Report were summarized for this Program Environmental Impact Report. The record search area for the General Plan Update project included the entire City and the City's sphere of influence (SOI). The SOI is defined in the City of Corona 2020–2040 General Plan and represents the logical service area of the City for future consideration. Most of the City of Corona 2020–2040 General Plan area and the water service area overlap. Record search information was not available for the northwest corner of the water service area in the Prado Flood Control Basin. However, no projects identified in the 2018 RWMP are in this area.

As indicated from the records search prepared for the City of Corona 2020–2040 General Plan, 172 cultural resources studies were previously conducted within the City's boundaries and its SOI (Table 3.5-1). The studies date back to 1937, with the most recent from 2016. See Appendix D for a complete list of the studies including author, title, and location.

The records search indicated that 96 previously recorded cultural resources are in the water service area as the majority of the boundary overlap that of the City and SOI. The previously recorded resources include archaeological sites, historic addresses, and isolates. Eighty-three of the cultural resources are in the City, 10 cultural resources have been recorded in the SOI, and three cultural resources intersect both the City and the SOI. The 96 previously recorded resources consist of 28 prehistoric resources, 66 historic resources, and 2 multicomponent resources. A complete list of the previously recorded cultural resources can be found in Appendix D.

3.5.1.5 Built Environmental Resources

The City of Corona 2020–2040 General Plan records search also indicated that 30 historic addresses have been previously recorded in the water service area (Table 3.5-1).

Table 3.5-1. Built Environmental Resources within the City's Water Service Area

Primary Number	Trinomial	Address	Parcel Number	USGS Topographic Quadrangle	Recorder and Date	Location
P-33-014754	—	—	—	Corona North	Winn, R., and Winn, M. (2005)	City of Corona
P-33-017926	—	Corona City Park	—	Corona North, Corona South	Dice, M.H. (2009)	City of Corona
P-33-020200	—	—	107-020-012	Corona South	Yates, T. (2011)	City of Corona
P-33-020201	—	14282 E. 6th Street	107-030-003	Corona South	Yates, T. (2011) Smallwood, J. (2012)	City of Corona
P-33-020202	—	—	107-030-022	Corona South	Yates, T. (2011)	City of Corona
P-33-020204	—	—	107-040-006	Corona South	Yates, T. (2011)	City of Corona
P-33-020203	—	—	107-040-005	Corona South	Yates, T. (2011)	City of Corona and SOI
P-33-020205	—	—	107-060-003	Corona South	Yates, T. (2011)	City of Corona
P-33-020206	—	—	107-060-008 107-060-009	Corona South	Yates, T. (2011)	City of Corona
P-33-020207	CA-RIV-20207	—	115-090-003	Corona South	Yates, T. (2011)	City of Corona
P-33-020208	—	—	117-031-001	Corona North	Yates, T. (2011)	City of Corona

Table 3.5-1. Built Environmental Resources within the City's Water Service Area

Primary Number	Trinomial	Address	Parcel Number	USGS Topographic Quadrangle	Recorder and Date	Location
P-33-020209	—	—	117-031-002	Corona North	Yates, T. (2011)	City of Corona
P-33-020210	—	—	117-031-036	Corona North	Yates, T. (2011)	City of Corona
P-33-020211	—	—	119-041-013	Corona North	Yates, T. (2011)	City of Corona
P-33-020212	—	—	119-041-014	Corona North	Yates, T. (2011)	City of Corona
P-33-020213	—	—	119-041-015	Corona North	Yates, T. (2011)	City of Corona
P-33-020225	—	—	119-041-016	Corona North	Yates, T. (2011)	City of Corona
P-33-020226	—	—	119-041-017	Corona North	Yates, T. (2011)	City of Corona
P-33-020227	—	—	119-041-018	Corona North	Yates, T. (2011)	City of Corona
P-33-020229	—	—	119-041-020	Corona North	Yates, T. (2011)	City of Corona
P-33-020231	—	1108 Serene Drive	119-041-022	Corona North	Yates, T. (2011)	City of Corona
P-33-020232	—	1002 Peaceful Drive	119-041-024	Corona North	Yates, T. (2011)	City of Corona
P-33-020233	—	1090 Serene Drive	110-043-001	Corona North	Yates, T. (2011)	City of Corona
P-33-020234	—	1082 Serene Drive	119-043-002	Corona North	Yates, T. (2011)	City of Corona
P-33-020235	—	1070 Serene Drive	119-043-003	Corona North	Yates, T. (2011)	City of Corona
P-33-020236	—	1058 Serene Drive	119-043-004	Corona North	Yates, T. (2011)	City of Corona
P-33-020237	—	1050 Serene Drive	119-043-005	Corona North	Yates, T. (2011)	City of Corona
P-33-024119	CA-RIV-11860	Sidebotham (Phillips) Quarry	—	Corona South	Goodwin, R. (2014)	City of Corona
P-33-024207	—	—	—	Corona North	Yates, T. (2012)	City of Corona
P-33-024551	CA-RIV-12171	—	—	Prado Dam	Goodwin, R. (2015)	City of Corona

Source: Appendix D.

In the City, six historic properties are defined as listed or eligible for listing on the National Register of Historic Places (NRHP). The six properties listed on the NRHP are also automatically

eligible for listing to the California Register of Historical Resources (CRHR). These properties are described below.

Carnegie Library (1906): This neo-classical building was designed by Los Angeles architect Franklin Pierce Burnham with construction completed on July 2, 1906. The exterior was cream and red colored pressed brick, with stone and concrete trim. It was symmetrically designed with a central staircase flanked by sloping banisters, which held decorative iron lights. The entrance was topped by an overhanging triangular pediment with ornate plaster designs and supported by fluted Ionic columns on either side. This building served as the City's public library until July 3, 1971, when a much larger public library facility was constructed several blocks away. The building remained empty for the next 6 years. Despite efforts to have it restored, it fell into disrepair and was damaged by fires and vandalism; the building was demolished April 18, 1978.

Corona Heritage Park (1900): This 5-acre complex was the headquarters for the Corona Foothill Lemon Company, the largest citrus ranch in the area in the early 1900s. The various buildings within the complex were primarily constructed between 1913 and 1937, and are largely intact today. The Corona Heritage Foundation is restoring the complex as a historic park and museum facility.

Corona High School/Civic Center (1923): Originally constructed as the City's second high school, it became the Civic Center in 1961. The classic Spanish Revival architecture and expansive front lawns make it a recognizable feature in Corona's downtown area.

Grand Boulevard Historic District (1886): This unique circular roadway was a prominent design element in the original layout for the townsite. The City derives its longstanding moniker "The Circle City" from the boulevard. Internationally acclaimed road races were held on this street in 1913, 1914, and 1916, drawing more than 100,000 spectators, as well as racing legends. The boulevard displays wide parkways, large mature trees, and historic streetlights fronting grand homes and more modest bungalows along its route.

Women's Improvement Club Clubhouse (1913): Southern California architect Thomas Preston designed this one-story, multi-gabled, Craftsman-style bungalow clubhouse that was built in 1913. The club was formed in 1899 as a civic organization called the "Town Improvement Association;" it changed its name to the "Women's Improvement Club of Corona" in 1902. The building's architectural features include painted wood shingles on the exterior walls, a steep-gabled main roof with clipped gables over the side wings, an original oak front door with beveled glass, and wooden porch piers on a prominent brick base. It was added to the National Register on November 3, 1988, and is the only remaining structure within City limits with that status.

Corona Theater Landmark Building (1929): The Spanish Revival-style Corona Theater, also known as the "Landmark Building," was designed by Southern California architect Carl Boller and dedicated on August 29, 1929. Various celebrities, including Al Jolson, Laurel and Hardy, and Irving

Berlin, attended its grand opening ceremonies. Its L-shaped design features a two-story elevation in front and three stories in the rear, with separate segments of varying heights topped by individual gable roofs and interspersed with hipped roof towers. The building was constructed of brick, with stucco on its front elevation. Some remodeling has been done to the exterior, but significant details remain. Over the years, the building has had various uses, including commercial office space, a Masonic Lodge meeting hall, and a large theater. The building is the only pre-Depression Era theater remaining in the City and has been determined eligible for the National Register.

Nine other properties are eligible for the CRHR:

- Jefferson Elementary School (1927)
- Barber Home (1893) – Eastlake
- 1101 S. Ramona Avenue (1915) – Vernacular Wood Frame with Classical revival Elements
- Terpening House (1899) – Queen Anne
- Corona First Methodist Church (1914) – Tudor Revival
- 401 East 8th Street (1908) – Vernacular Wood Frame
- Camp Haan Barracks (1942) – Vernacular Wood Frame
- 517 E 8th Street (1896)
- El Gordo Caballo Ranch (1939)

Five state historic landmarks are in the water service area:

Butterfield Stage Station (No. 188): Site of Butterfield Stage Station where mail was delivered and horses changed. The first stage carrying overland mail left Tipton, Missouri, on September 15, 1858, and, passing through Temescal, arrived in Los Angeles on October 7, 1858.

Painted Rock (No. 190): In tribute to the earliest record of any people in this region, the Santa Fe Railway has preserved this rock with its ancient pictograph, and the Committee of the Corona Women's Improvement Club has placed a tablet.

Ruins of the Third Serrano Adobe (No. 224): Don Leandro Serrano set out orchards and vineyards and cultivated some of the fertile lands of the Temescal Valley. In the 1840s, he built his third adobe, which the Serrano family occupied until 1898, on the well-traveled road between San Diego and Los Angeles.

Old Temescal Road (No. 638): This route was used by Luiseño and Gabrielino Indians, whose villages were nearby. Leandro Serrano established a home here in 1820. Jackson and Warner traveled the road in 1831 and Frémont in 1848. It was the southern emigrant road for gold seekers from 1849 to 1851, the Overland Mail route from 1858 to 1861, and a military road between Los Angeles and San Diego from 1861 to 1865.

Corona Founders Monument (No. 738): R.B. Taylor, George L. Joy, Samuel Merrill, A.S. Garretson, and Adolph Rimpau, after purchasing lands of La Sierra Rancho and El Temescal grant, founded the citrus colony and Town of Corona on May 4, 1886.

The City also contains two state historic points of interest:

- Bandini-Cota Adobe Site
- Temescal Tin Mines CRHR – the location of the first tin mine in the area dating back to 1859

The City contains 57 historic landmarks as identified in Table 3.5-2.

Table 3.5-2. City of Corona Historic Landmarks

Historic District (HD)/ Historic Landmark (HL Number	Address	APN	Description	Date Approved by Corona City Council
HD-001	510 W. Foothill Avenue	114-350-046	Heritage Park District	May 16, 2001
HD-002	2750 S. Rimpau Avenue	120-121-028	Lemonia Grove District	May 16, 2001
HD-003	2837 S. Kellogg Avenue	120-072-008	Kammeyer Ranch District	May 16, 2001
HD-004	1125 S. Rimpau Avenue	111-290-024	Sunny Slope Cemetery District	May 16, 2001
HD-005	930 E Sixth Street	117-310-001	City Park District	May 16, 2001
HD-006	Grand Blvd Circle	Not Available	Grand Boulevard Streetscape District	May 16, 2001
HD-007	Chase Drive (Garretson to Foothill)	Not Available	Chase Drive Palm Trees District	May 16, 2001
HD-008	Rimpau Avenue (Old Temescal Road to Chase)	Not Available	Rimpau Avenue Palm Trees District	May 16, 2001
HD-009	Main Street (Olive to Chase)	Not Available	South Main Street Palm Trees District	May 16, 2001
HD-010	Palisades Drive (1 mile from Green River/Wardlow Wash Bridge)	Not Available	Palisades Drive Roadway District	June 3, 2015
HL-001	1101 S. Main Street	117-266-006	Woman's Improvement Club	May 16, 2001
HL-002	815 W. Sixth Street	118-270-049	Historic City Hall	May 16, 2001
HL-003	900 S. Victoria Avenue	117-236-001	Victoria Park/Old Lincoln Cemetery	May 16, 2001
HL-004	722/423 S. Joy Street/Eighth	117-206-009	Joy Street Market and Residence	Revoked On Nov 18, 2009
HL-005	1169 E. Grand Boulevard	Not Available	Not Available	May 16, 2001
HL-006	1156 E. Grand Boulevard	Not Available	Not Available	May 16, 2001
HL-007	1148 E. Grand Boulevard	Not Available	Not Available	May 16, 2001
HL-008	1136 E. Grand Boulevard	Not Available	Not Available	May 16, 2001

Table 3.5-2. City of Corona Historic Landmarks

Historic District (HD)/ Historic Landmark (HL Number	Address	APN	Description	Date Approved by Corona City Council
HL-009	1036 E. Grand Boulevard	Not Available	Not Available	May 16, 2001
HL-010	822 S. Joy Street	117-241-001	Not Available	September 17, 2001
HL-011	1314 S. Victoria Avenue	109-041-014	Not Available	July 17, 2001
HL-012	1147 E. Grand Boulevard	Not Available	Not Available	September 18, 2002
HL-013	123 W. Eleventh Street	117-254-012	Vernacular Wood Frame	July 16, 2003
HL-014	1214 S. Belle Avenue	110-192-018	Vernacular Wood Frame	July 16, 2003
HL-015	616 W. Eleventh Street	110-172-009	Provincial Revival	January 7, 2004
HL-016	1315 S. Main Street	109-041-002	Mediterranean/ Spanish Revival	October 20, 2004
HL-017	818 S. Howard Street	117-233-022	Queen Anne	October 20, 2004
HL-018	1128 E. Grand Boulevard	117-263-016	Vernacular Wood Frame	October 19, 2005
HL-019	1052 E. Grand Boulevard	117-264-005	Victorian (mixed style)	May 3, 2006, Dec. 19, 2007
HL-020	809 E. Grand Boulevard	111-022-011	Not Available	May 3, 2006
HL-021	1052 E. Grand Boulevard	Not Available	Not Available	July 5, 2006
HL-022	1170 E. Grand Boulevard	117-265-010	Mediterranean/ Spanish Revival	August 16, 2006
HL-023	1301 S. Main Street	109-041-004	Vernacular Wood Frame w/ Craftsman Bungalow Elements	October 4, 2006
HL-024	1124 Palm Avenue	109-033-005	Vernacular Wood Frame	October 18, 2006
HL-025	920 S. Victoria Avenue	117-237-002	Bungalow	October 18, 2006
HL-026	1107 W. Grand Boulevard	117-252-022	Vernacular Wood Frame	May 16, 2007
HL-027	1120 Palm Avenue	109-033-004	Vernacular Wood Frame	June 20, 2007
HL-028	824 S. Sheridan Street	117-221-001	Vernacular Wood Frame	June 20, 2007
HL-029	623 S. Merrill Street	117-173-016	Victorian (mixed style)/Queen Anne	July 18, 2007

Table 3.5-2. City of Corona Historic Landmarks

Historic District (HD)/ Historic Landmark (HL Number	Address	APN	Description	Date Approved by Corona City Council
HL-030	1047 E. Grand Boulevard	109-031-002	Not Available	September 5, 2007
HL-031	1101/1103 S. Victoria Avenue	117-263-014	Transitional Bungalow	October 17, 2007
HL-032	1133 E. Grand Boulevard	109-022-002	Not Available	August 6, 2007
HL-033	914 S. Victoria Avenue	117-237-012	Vernacular Wood Frame w/ Bungalow Elements	October 17, 2007
HL-034	1164 E. Grand Boulevard	117-265-009	Not Available	July 16, 2008
HL-035	1208 Palm Avenue	109-033-007	Bungalow	September 17, 2008
HL-036	122 E. Olive Street	109-041-006	Bungalow	September 17, 2008
HL-037	1222 S. Victoria Avenue	109-021-011	Vernacular Wood Frame	September 17, 2008
HL-038	934 E. Grand Boulevard	117-243-009	Not Available	September 17, 2008
HL-039	802 W. Grand Boulevard	110-112-007	Not Available	October 21, 2009
HL-040	805/809 S. Ramona Avenue	117-232-007	Gothic Revival	August 5, 2009
HL-041	1127 E. Grand Boulevard	109-022-003	Not Available	September 1, 2010
HL-041	1127 E. Grand Boulevard	109-022-003	Not Available	September 1, 2010
HL-042	353 E. Olive Street	109-033-012	Not Available	July 17, 2013
HL-043	1031 E. Grand Boulevard	109-031-004	Not Available	September 17, 2014
HL-044	1518 S. Main Street	109-072-008	Not Available	September 16, 2015
HL-045	119 E. Kendall Street	109-041-021	Vernacular Wood Frame	September 17, 2016
HL-046	502 W. Eleventh Street	110-172-020	Mission Revival	October 18, 2017

Source: Appendix D.

The City also contains 10 historic markers as shown in Table 3.5-3. The Corona High School and Civic Center is also eligible for listing on the NRHP, and the Jefferson Elementary School is also eligible for listing on the CRHP.

Table 3.5-3. City of Corona Historic Markers

Historic Marker Number	Description	Location	Date Built	Date Dedicated
HM-00	Corona Road Races	W. Grand Boulevard and Main Street	1913	1986
HM-01	Corona High School and Civic Center	W. Sixth Street and Buena Vista Avenue	1023	Date Not Available
HM-02	First Congregational Church	Ramona and Eighth Street	1887, 1911	Date Not Available
HM-03	First Corona Police Office Killed in Line of Duty Memorial	Sixth Street and Howard	1913	Date Not Available
HM-04	Jefferson Elementary	Tenth Street and Vicentia Street	1927	Date Not Available
HM-05	Site of Corona's First Fire Station	S. Main and Eighth Street	1898	1998
HM-06	Site of Lincoln Elementary School	Howard and Ninth Street	1889, 1914	1998
HM-07	Original Site of Victoria Hotel	E. Sixth Street and Victoria Avenue	1904	1999
HM-08	Site of First Corona Hospital	Eighth St and Belle Street	1933	1999
HM-09	Corona's First High School and Middle School	Main Street and Grand Boulevard	1937	2000

Source: Appendix D.

3.5.2 Regulatory Setting

This section describes the federal, state, and local regulatory framework adopted to protect cultural resources.

3.5.2.1 Federal

National Historic Preservation Act

The National Historic Preservation Act of 1966 established the NRHP as the official federal list of cultural resources that have been nominated by state offices for their historic significance at the local, state, or national level. Listing in the NRHP provides recognition that a property is significant to the nation, the state, or the community and assumes that federal agencies consider historic values in the planning for federal and federally assisted projects. Properties listed in the NRHP, or "determined eligible" for listing, must meet certain criteria for historic significance and possess integrity of form, location, and setting. Structures and features must usually be at least 50 years old to be considered for listing in the NRHP, barring exceptional circumstances. Criteria for listing in the NRHP, which are set forth in Title 36, Part 63, of the Code of Federal Regulations, are significance in American history, architecture, archaeology, engineering, and culture is present

in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association; and that are:

A. Associated with events that have made a significant contribution to the broad patterns of our history; or

B. Associated with the lives of persons significant in our past; or

C. Embody the distinctive characteristics of a type, period, or method of construction; represent the work of a master; possess high artistic values; represent a significant and distinguishable entity whose components may lack individual distinction; or

D. Have yielded, or may be likely to yield, information important in prehistory or history.

Eligible properties must meet at least one of the criteria and exhibit integrity, measured by the degree to which the resource retains its historic properties and conveys its historic character, the degree to which the original fabric has been retained, and the reversibility of changes to the property. The fourth criterion is typically reserved for archaeological and paleontological resources. These criteria have largely been incorporated into the California Environmental Quality Act (CEQA) Guidelines as well (see Section 3.5.4.1 in reference to CEQA Guidelines, Section 15064.5).

3.5.2.2 State

CEQA and California Register of Historical Resources

CEQA requires that all private and public activities not specifically exempted be evaluated against the potential for environmental damage, including effects to historic resources. Historic resources are recognized as part of the environment under CEQA. The act defines historic resources as "any object, building, structure, site, area, or place that is historically significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California" (California Public Resources Code, Section 5021.1[b]).

Lead agencies have a responsibility to evaluate historic resources against the CRHR criteria before making a finding as to a proposed project's impacts to historic resources. Mitigation of adverse impacts is required if the proposed project will cause substantial adverse change. Substantial adverse change includes demolition, destruction, relocation, or alteration such that the significance of a historic resource would be impaired. While demolition and destruction are fairly obvious significant impacts, it is more difficult to assess when change, alteration, or relocation crosses the threshold of substantial adverse change. The CEQA Guidelines provide that a project that demolishes or alters those physical characteristics of a historic resource that convey its historic significance (i.e., its character-defining features) is considered to materially impair the resource's significance. The CRHR is used in the consideration of historic resources relative to significance for purposes of CEQA. The CRHR includes resources listed in, or formally determined eligible for listing in, the NRHP and some California State Landmarks and Points of Historical Interest.

Properties of local significance that have been designated under a local preservation ordinance (local landmarks or landmark districts), or that have been identified in a local historic resources inventory, may be eligible for listing in the CRHR and are presumed to be significant resources for purposes of CEQA unless a preponderance of evidence indicates otherwise.

Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the CRHR (California Public Resources Code, Section 5024.1; CEQA Guidelines, Section 4852), which consist of the following:

- **Criterion 1:** it is 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; or
- **Criterion 2:** it is associated with the lives of persons important to local, California, or national history; or
- **Criterion 3:** it embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master, or possesses high artistic values; or
- **Criterion 4:** it has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

3.5.2.3 Local

Corona Historic Resources Ordinance

The Corona Historic Resources Ordinance is described within Chapter 17.63 of the Corona Municipal Code. The Corona Historic Resources Ordinance was established to promote the recognition, preservation, and continued viability of historic resources in the City in the interest of prosperity, social and cultural enrichment, and the general welfare of the people of the City. The Corona Historic Resources Ordinance is based on the following principles:

A. Encouraging knowledge and civic pride in the character of Corona's heritage and its many historic resources, in accordance with the declaration of intent and purpose in the City's General Plan;

B. Providing a process and register for the public identification and official recognition of Corona's many historic resources;

C. Establishing processes for the thoughtful review of plans for future projects and developments that could affect the management and preservation of Corona's historic resources;

D. Encouraging and assisting Corona's private property owners with the management and preservation of their own historic resources and properties;

E. Promoting the management and preservation of Corona's historic resources, including historic districts, that reflect the City's diverse cultural, social, artistic, economic, engineering, political and architectural heritage;

F. Enhancing Corona's cultural heritage as a general attraction to residents, tourists, businesses, industries and development enterprises, thereby strengthening Corona's general economy around its core heritage areas; and

G. Promoting the use of Corona's historic resources and districts for the education, enjoyment and welfare of the people of the City.

The Corona Historic Resources Ordinance also provided for the establishment of the Corona Register of Historical Resources and Corona Heritage Inventory. It also authorized the property preservation/tax reduction program, historic markers program, and historic design guidelines, which set the standards by which buildings are evaluated for the Corona Register of Historic Resources and Heritage Inventory.

Corona Register of Historic Resources (Corona Register)

As a Certified Local Government in the Federal Historic Preservation Program, the City pledged its commitment to historic preservation. The Corona Register of Historic Resources (Corona Register) includes landmarks, historic markers, and historic districts and the contributing historic resources within such historic districts. Sites, improvements and natural features within the City's boundaries that are listed on the California Register or National Register shall automatically be deemed listed on the Corona Register. The Corona Register has separate criteria for landmarks, historic districts and historic markers.

Landmarks are those physical elements of the City's historic development that provide the community with its own unique civic identity and character. A site, improvement or natural feature shall be eligible for listing on the Corona Register as a landmark if the City Council finds that all of the following criteria are satisfied:

1. It has been in existence for a period of at least 50 years, or if less than 50 years old, is of exceptional importance to the community;
2. It has significant historic, cultural or architectural value and its designation as a landmark is reasonable, appropriate and necessary to promote, preserve and further the purposes and intent of this chapter;
3. It exhibits one or more of the following characteristics:
    a. It is associated with events that have made a significant contribution to the history of Corona, the region, the state or the nation;
    b. It is associated with the lives of persons significant in Corona's past;
    c. It embodies distinctive characteristics of a style, type, period or method of construction or a valuable example of the use of materials or craftsmanship;

d. It exemplifies or reflects special elements of the City's cultural, social, economic, political, aesthetic, engineering, architectural or natural history;
e. It is representative of the work of a notable builder, designer or architect;
f. It exemplifies one of the best remaining architectural styles or types in a neighborhood or contains outstanding elements of architectural design, detail, materials or craftsmanship of a particular historic period;
g. It is in a unique location or contains physical characteristics representing an established and familiar visual feature of a neighborhood;
h. It is a potential source of archaeological or paleontological interest;
i. It is or contains a natural setting or feature that strongly contributes to the well being of the people of the City;

4. It has integrity of location, design, setting, materials, workmanship, feeling and association:

   a. Integrity is the authenticity of an historic resource's physical identity, as evidenced by the survival of characteristics that existed during the historic resource's period of significance, to be recognizable and to convey the reasons for its significance;
   b. A site, improvement or natural feature that has diminished historic character or appearance may still have sufficient integrity for the Corona Register if it retains the potential to yield significant scientific or historical information or specific data or retains sufficient character to convey the reasons for its significance. Thus, it is possible that a site, improvement or natural feature may not retain sufficient integrity to meet the criteria for listing on the California Register or National Register, but it may still be eligible for listing on the Corona Register;
   c. Integrity shall be judged with reference to the particular criterion or criteria which provide its eligibility. An improvement removed from its original location shall be eligible if it is significant primarily for its architectural value or it is the surviving structure most importantly associated with an historic person or event.

A historic district is a geographically defined area possessing a concentration of contributing historic resources that relate to each other and are unified by physical development or historic context. A defined area shall be eligible for listing on the Corona Register as an historic district if the City Council finds that all the following criteria are satisfied:

1. The defined area is a unified geographical area with precisely defined boundaries;
2. The defined area contains a significant concentration of individually recognized contributing historic resources united in character by an historic plan, physical development, cultural heritage, past events, an historic period or prehistory era, aesthetics design or architectural traditions;

3. At least 75 percent of the contributing historic resources in the defined area are 50 years of age or older and retain their original architectural character;
4. The civic and historic value of the contributing historic resources is greater as a collective whole than as individual historic resources;
5. The defined area has significant historic, cultural or architectural value and its designation as an historic district promotes, preserves and furthers the purposes and intent of this chapter.

Upon the listing of an historic district on the Corona Register, all identified contributing historic resources in the historic district shall be individually listed on the Corona Register, along with notation of the historic district's noncontributing resources.

A Historic Marker is defined as a sign, plaque, monument, or other symbol that may be listed on the Corona Register by resolution of the City Council or placed by the City of Corona Historic Preservation Society for the purpose of recognizing one or more of the following:

1. Events that have made a significant contribution to the history of Corona, the region, the state or the nation;
2. Persons significant in Corona's past;
3. Examples of distinctive characteristics of a style, type, period or method of construction or a valuable example of the use of materials or craftsmanship;
4. Special elements of the City's cultural, social, economic, political, aesthetic, engineering, architectural or natural history;
5. The work of a notable builder, designer or architect;
6. Outstanding elements of architectural design, detail, materials or craftsmanship of a particular historic period;
7. A unique location or physical characteristic representing an established and familiar visual feature of a neighborhood;
8. An archaeological or paleontological site; or
9. A natural setting or feature that strongly contributes to the wellbeing of the people of the City. The actual site, improvement or natural feature that is designated by the historic marker may or may not be listed, or may or may not be eligible for listing, on the Corona Register or the Corona Heritage Inventory.

Corona Heritage Inventory

The Corona Heritage Inventory includes only heritage properties listed by the Planning Commission. Heritage properties listed on the Corona Heritage Inventory may or may not be eligible for listing on the Corona Register. To be listed on the Corona Heritage Inventory a site, improvement, or natural feature must satisfy all of the following criteria:

A. An official survey describing the features, merits and quality of the site, improvement or natural feature has been prepared;

B. The site, improvement or natural feature is identified as a potential resource to be conserved because of its age, and either its context in the neighborhood, its association with a historic event or period or its significance to the architectural, engineering, scientific, economic, agricultural, educational, cultural, social, artistic, political or military history of Corona.

3.5.3 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a significant impact related to cultural resources would occur if the project would (CEQA Guidelines, Section 15000 et seq.):

1. Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5
2. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5
3. Disturb any human remains, including those interred outside of formal cemeteries

3.5.4 Environmental Analysis

3.5.4.1 Threshold 1: Historic Resources

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

Impact Analysis

Based on the historic and archival research conducted for the project, historic resources pursuant to Section 15064.5 may be present in the water service area as described in Section 3.5.1.5.

Construction of the projects identified in the 2018 RWMP would largely occur in existing roadway rights-of-way and developed areas. The demolition or direct physical alteration of potential historic structures, historic districts, or other built environment resources would be unlikely based on the type of facilities included in the project.

Construction of the projects identified in the 2018 RWMP could result in temporary vibration-related effects in the immediate vicinity of the construction from the use of heavy equipment and machinery, as construction activities can produce varying degrees of ground vibration depending on the equipment and methods employed and localized soil conditions. As discussed in Section 3.13, Noise, construction activities would require the use of vibratory roller. Vibration from operation of a vibratory roller would have the potential to generate vibration levels of 0.12 peak particle velocity up to approximately 40 feet from equipment operation. However, because exact future project alignments and construction fleets are unknown, construction that would involve the

use of vibratory equipment within 40 feet of a historic structure where present and eligible for the NRHP, CRHR, or Corona Register would have the potential to result in damaging vibration levels that would result in a substantial adverse change in a historic resource.

Once constructed, future maintenance and operational activities would be restricted to the City's existing rights-of-way or existing site locations, and therefore, no encroachment into adjacent properties would occur. Based on these considerations, no substantial adverse change to historic resources would result from future maintenance and operational activities.

Level of Significance Before Mitigation

Implementation of the project would have the potential to cause a substantial adverse change in the significance of a historic resource pursuant to CEQA Guidelines, Section 15064.5, due to vibration from construction activities. Impacts would be potentially significant.

Mitigation Measures

Implementation of Mitigation Measure CUL-1 would reduce potential impacts to historic resources to below a level of significance.

CUL-1: **Construction-Related Vibration.** Construction plans for individual projects under the 2018 Reclaimed Water Master Plan shall include a requirement that no vibratory equipment be operated within 40 feet of a structure eligible or listed on the National Register of Historic Places, California Register of Historical Resources, or Corona Register. Instead, alternative construction equipment shall be used, such as smooth wheel rollers without a vibratory component. This requirement shall be included on individual project Construction Plans and be submitted to the City of Corona, Public Works Department, for review before approval of final design.

For structures that have not been previously evaluated, the City Engineer shall consult with a qualified Architectural Historian, approved by the City of Corona, to conduct an evaluation of the structure. If the structure is determined eligible or already eligible or listed in the National Register of Historic Places, California Register of Historical Resources, or Corona Register, structural evaluation shall be conducted by a Professional Structural Engineer to identify maximum allowable levels of vibration during construction. If a historic determination is required, the engineer shall provide recommendations on approaches to stabilization in conjunction with vibration monitoring. Permanent stabilization measures shall follow the Secretary of the Interior's guidelines for the treatment of historic properties. If the buildings are temporarily stabilized for the duration of construction activities, when removed, the buildings shall be restored to their preconstruction condition when the stabilization measures are removed.

Level of Significance After Mitigation

Implementation of Mitigation Measure CUL-1 would reduce impacts to a less than significant level.

3.5.4.2 Threshold 2: Archaeological Resources

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

Impact Analysis

Implementation of the projects identified in the 2018 RWMP would have the potential to impact archaeological resources pursuant to CEQA Guidelines, Section 15064.5, due to construction activities including clearing, trenching, and grading activities associated with the construction of pipelines, underground structures, or other related facilities, which may result in disturbing native soil outside of previously excavated trenches.

As shown on Figures 3.5-1a through 3.5-1d, much of the water service area has been identified as having a moderate to high sensitivity for cultural resources. As described in Section 3.5.1.4, 96 previously recorded cultural resources are in the water service area. As shown in Table 3.5-4, 13 of the resources are within 100 feet of a project identified in the 2018 RWMP, and an additional 3 resources are intersected by a project identified in the 2018 RWMP.

Table 3.5-4. Cultural Sensitivity and Known Resource Locations for the 2018 RWMP Projects

Project Component Number	Project Component	Known Resources Intersected	Known Resources within 100 Feet	Cultural Resource Sensitivity of the Project Component
1	WRCRWA Booster Pump Station*	NA	NA	NA
2	WRCRWA Transmission Pipeline	None	None	High
3	WRCRWA Flow Control Improvements	None	None	High
4	Rimpau California Pipeline	None	P-33-017926	Moderate, High
5	Chase Booster Pump Station	None	None	Moderate
6	Chase Tank	None	None	Moderate
7	Buena Vista Tenth Pipeline	None	P-33-014754 P-33-024188	High
8	Ontario Slipline	None	P-33-024855	Moderate, High

Table 3.5-4. Cultural Sensitivity and Known Resource Locations for the 2018 RWMP Projects

Project Component Number	Project Component	Known Resources Intersected	Known Resources within 100 Feet	Cultural Resource Sensitivity of the Project Component
9	River Pipeline	None	P-33-020211 P-33-020212 P-33-020213 P-33-020225 P-33-020226 P-33-020233 P-33-020235 P-33-020237	Moderate, High
10	Sampson Pipeline	P-33-001438 P-33-003832	P-33-020207 P-33-020202	Moderate, High
11	Old Temescal Pipeline	None	None	Moderate, High
12	Lincoln Foothill Pipeline	None	None	Moderate
13	Avenida Del Vista Pipeline	None	None	High
14	Border Pipeline	None	None	Moderate, High
15	Promenade Pipeline	None	None	Moderate
16	Research Pipeline	None	None	Moderate, High
17	Smith Pipeline	None	None	Moderate, High
18	Via Pacifica Pipeline	None	None	Moderate
19	Tehachapi Pipeline	None	None	Moderate
20	Jenks Pipeline	None	None	Moderate
21	Airport Circle Pipeline	None	None	Moderate
22	Helicopter Pipeline	None	None	Moderate
23	Glider Pipeline	None	None	Moderate
24	Citation Pipeline	None	None	Moderate
25	Klug Pipeline	None	None	Moderate
26	Monica Pipeline	None	None	Moderate
27	Chase Hudson Pipeline	None	None	Moderate
28	Cessna Pipeline	None	None	Moderate
29	Main Citrus Pipeline	None	None	Moderate, High

Source: Appendix D.

Notes: 2018 RWMP = 2018 Reclaimed Water Master Plan; NA = not applicable; WRCRWA = Western Riverside County Regional Wastewater Authority

Therefore, construction activities associated with the implementation of the project would result in a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines, Section 15064.5.

Once constructed, the projects identified in the 2018 RWMP would not have the potential for additional impacts to archaeological resources. Typical operations and maintenance activities would not result in additional physical impacts.

Level of Significance Before Mitigation

Implementation of projects identified in the 2018 RWMP has the potential to damage or destroy unknown subsurface archaeological resources, which could result in a substantial adverse change in the significance of a unique archaeological resource. Therefore, impacts related to archaeological resources would be potentially significant.

Mitigation Measures

Implementation of Mitigation Measures CUL-2 and CUL-3 would reduce impacts to archaeological resources.

CUL-2: **Project-Specific Archaeological Survey.** Projects identified in the 2018 Reclaimed Water Master Plan should be reviewed by the City of Corona to determine if a site-specific archaeological survey should be conducted. Site-specific archaeological surveys should be conducted for individual projects identified in the 2018 Reclaimed Water Master Plan that are in areas that have not been previously developed or would impact land with visible ground surface, or projects that may impact built environment resources that meet the age threshold for eligibility.

If cultural resources are identified during the site-specific archaeological survey, then evaluation of the resources for the California Register of Historical Resources and the Corona Register should be conducted to determine if the resource is significant under the California Environmental Quality Act and would be adversely impacted by the project. A Native American monitor from a culturally affiliated tribe should be present during any archaeological excavations involving prehistoric cultural resources. If no significant resources are found, and site conditions are such that there is no potential for further discoveries, then no further action is required. Resources found to be non-significant as a result of a survey and evaluation shall require no further work beyond documentation of the resources on the appropriate Department of Parks and Recreation site forms and inclusion of results in a technical report.

If significant resources are present, then avoidance, preservation in place, or a data recovery program is recommended. The data recovery program is subject to the provisions outlined in California Public Resources Code, Section 21083.2. The data recovery program should be conducted in accordance with the Office of Historic Preservation's Archaeological Resource Management Reports: Recommended

Contents and Format and Guidelines for Archaeological Research Designs. The data recovery program must be reviewed and approved by the City.

If no significant resources are found, but if there is a potential for unknown archaeological resources, or tribal cultural resources to be uncovered during construction activities, then implementation of Mitigation Measure CUL-3 is recommended.

CUL-3: **Archaeological and Native American Monitoring Program.** Because there is always a potential for encountering cultural resources during excavation, the creation of an archaeological and Native American monitoring program is recommended for projects identified in the 2018 Reclaimed Water Master Plan that would conduct new ground disturbance in areas identified as moderate or high sensitivity for cultural resources and for project components that are within 100 feet of previously recorded archaeological resources. The archaeological and Native American monitoring program shall consist of the full-time presence of a qualified archaeologist and traditionally and culturally affiliated Native American monitor during new ground-disturbing activities. New ground disturbance can include new trenching or expanding previously excavated trenches, grading, and vegetation removal. The archaeological and Native American monitoring program should include the following:

1. Noting archaeological and Native American monitoring on applicable construction documents, including plans, shall be required.
2. The archaeologist and Native American monitor should attend the preconstruction meeting with the contractor or the City of Corona.
3. The archaeologist shall maintain ongoing collaborative consultation with the Native American monitor during ground-disturbing or altering activities as identified above.
4. The archaeologist or Native American monitor may halt ground-disturbing activities if archaeological artifact deposits or cultural features are discovered. In general, ground-disturbing activities shall be directed away from these deposits for a short time to allow a determination of potential significance, the subject of which shall be determined by the archaeologist and the Native American monitor. Ground-disturbing activities shall not resume until the archaeologist, in consultation with the Native American monitor and the City, deems the cultural resource or feature has been appropriately documented and protected.
5. Archaeological isolates and non-significant materials shall be minimally documented in the field, and ground disturbance shall be allowed to resume.
6. The avoidance and protection of discovered unknown and significant cultural resources and/or unique archaeological resources is the preferable mitigation for the proposed

project. If avoidance is not feasible, a Data Recovery Plan may be authorized by the City of Corona as the lead agency under the California Environmental Quality Act.

7. Before the release of any bonds associated with the construction of the project components, a Monitoring Report or Evaluation Report that describes the results, analysis, and conclusions of the archaeological and Native American monitoring program (including but not limited to a data recovery program) shall be submitted by the archaeologist, along with the Native American monitor's notes and comments, to the City of Corona for approval.

Level of Significance After Mitigation

Implementation of Mitigation Measures CUL-2 and CUL-3 would reduce impacts to a less than significant level.

3.5.4.3 Threshold 3: Human Remains

Would the project disturb any human remains, including those interred outside of formal cemeteries?

Impact Analysis

Cultural sensitivity varies across the water service area, and the majority of the water service area has been identified as moderate to high sensitivity. Unidentified human remains, whether as part of a prehistoric cemetery, an archaeological site, or an isolated occurrence, could be present below the ground surface in any location but most likely in native terrain. Construction activities associated with the implementation of the 2018 RWMP could disturb native terrain, including excavation, grading, and soil removal; therefore, the potential exists for previously undiscovered human remains to be discovered. If human remains are inadvertently discovered, the impact would be considered significant unless the appropriate procedures were implemented.

Level of Significance Before Mitigation

Implementation of the 2018 RWMP has the potential to disturb unknown human remains, which would result in a potentially significant impact.

Mitigation Measures

Implementation of Mitigation Measures CUL-2, CUL-3, and CUL-4 would reduce impacts to a less than significant level.

CUL-4: Identification and Treatment of Human Remains. In the event that human remains or possible human remains are encountered during any work associated with the projects identified in the 2018 Reclaimed Water Master Plan, ground disturbance within 25 feet of the remains shall halt and California Environmental Quality Act Guidelines, Section 15064.5(e); California Public

Resource Code, Section 5097.98; and California Health and Safety Code, Section 7050.5, should be followed. If Native American remains are discovered, the remains shall be kept in situ (in place) or in a secure location approved by the Native American monitor until the repatriation process can be completed.

Level of Significance After Mitigation

Compliance with California Health and Safety Code, Sections 7050.5 and 7052, and California Public Resources Code, Section 5097, would provide an opportunity to avoid or minimize the disturbance of human remains and to appropriately treat any remains that are discovered. Implementation of these measures would reduce the impacts of inadvertent discoveries of human remains to a less than significant level.

3.5.5 Cumulative Impacts and Mitigation

3.5.5.1 Cumulative Threshold 1: Historic Resources

The geographic context for the analysis of cumulative impacts to historic resources is defined as the water service area. Cumulative impacts to historic resources would involve projects affecting local resources with the same level or type of designation or evaluation, projects affecting other structures in the same historic district, or projects that involve resources that are significant in the same context as resources associated with the 2018 RWMP. 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, General Plan policies, and state and federal regulations restricting alteration, relocation, and demolition of historic resources. However, it is possible that adherence to these policies may not adequately avoid or reduce incremental impacts, and such projects would require additional measures to continue to occur over time, leading to a cumulatively significant impact.

Construction activities associated with the projects identified in the 2018 RWMP that would involve use of vibratory equipment within 40 feet of a historic structures where present and eligible for the NRHP, CRHR, or Corona Register would have the potential to result damaging vibration levels which would result in a substantial adverse change in a historic resource. Compliance with Mitigation Measures CUL-1 would reduce impacts to a less that significant level. Therefore, the project's contribution to a cumulative historic resource impact would not be cumulatively considerable.

3.5.5.2 Cumulative Threshold 2: Archaeological Resources

The geographic context for the analysis of cumulative impacts to archaeological resources is considered to be the County region. Evidence of human occupation in the water service area is represented by numerous archaeological sites throughout the City and overall region. These sites contain artifacts and features of value in reconstructing cultural patterns of prehistoric life. Due to the scarcity of archaeological resources and the potential for construction activities associated with

future development projects in the County region to impact these resources, a significant cumulative impact to archaeological resources exists.

The Cultural and Tribal Cultural Resources Technical Report (Appendix D) prepared for the 2018 RWMP concluded that cultural sensitivity varies across the water service area, with the majority of the water service area identified as moderate to high sensitivity. Therefore, it is possible that archaeological resources could be impacted as a result of construction. Implementation of Mitigation Measures CUL-2 and CUL-3 would reduce impacts to known or unknown buried archaeological resources to less than significant. Therefore, the project's contribution to cumulative archaeological resources impacts would not be cumulatively considerable.

3.5.5.3 Cumulative Threshold 3: Human Remains

The geographic context for the analysis of cumulative impacts to human remains is the County region. The presence of numerous archaeological sites throughout the region indicates that prehistoric human occupation occurred throughout the region. Additionally, historic era occupation of the area increases the possibility that humans were interred outside of a formal cemetery. Cumulative development projects would have the potential to encounter unknown, interred human remains during construction activities, which would result in a significant cumulative impact.

The proposed project may inadvertently discover unrecorded human remains during construction activities. However, the implementation of Mitigation Measure CUL-4, which require archaeological and Native American monitors during construction and compliance with California Health and Safety Code, Section 7050.5, and California Public Resources Code, Section 5097.98, would reduce impacts to less than significant. Therefore, the project's contribution would not be cumulatively considerable.

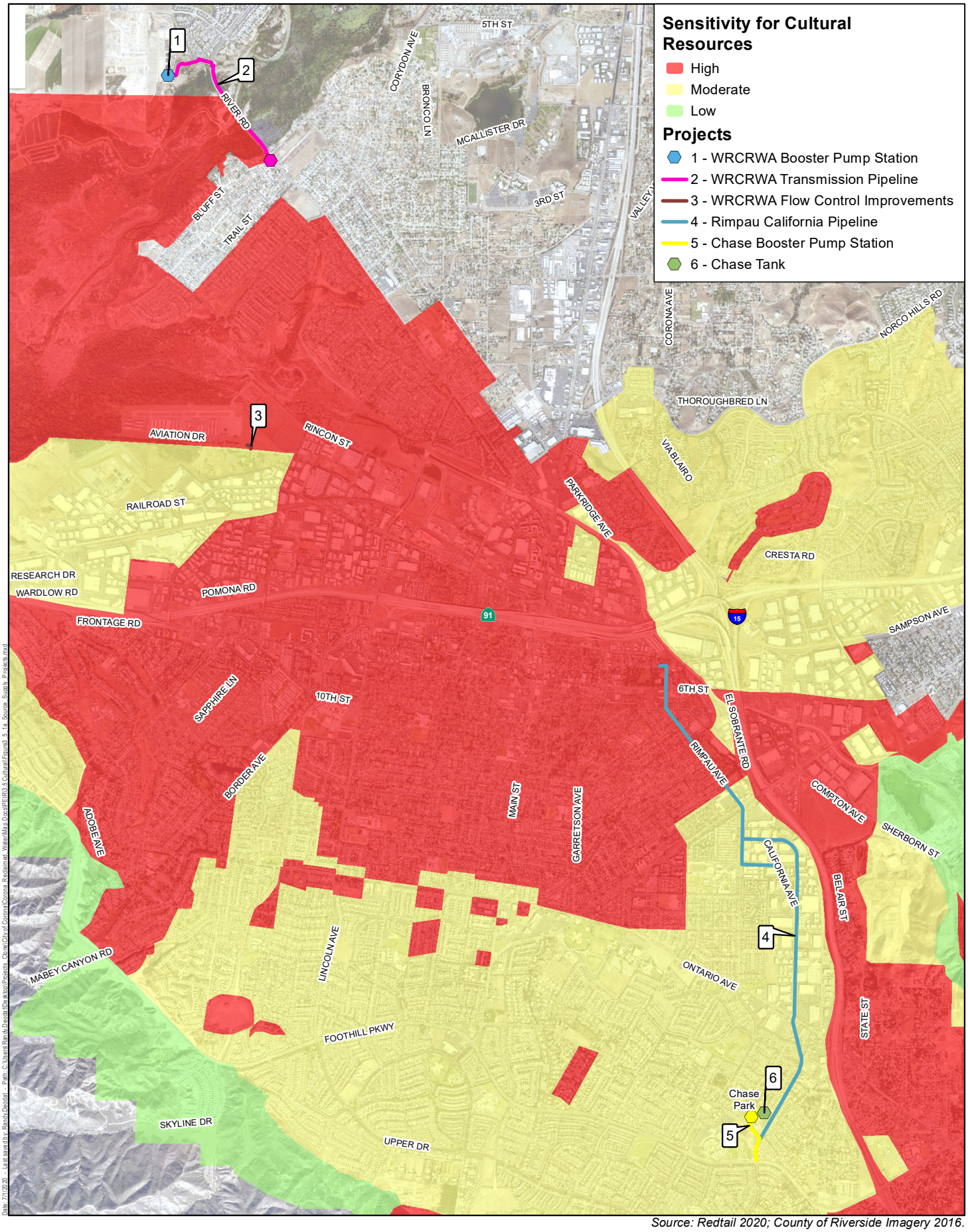
3.5.6 Conclusion

Construction of the projects identified in the 2018 RWMP would largely occur within existing roadway rights-of-way and developed areas. The demolition or direct physical alteration of potential historic structures, historic districts, or other built environment resources would be unlikely based on the type of facilities included in the 2018 RWMP. Construction of the projects identified in the 2018 RWMP could result in temporary vibration-related effects in the immediate vicinity of the construction from the use of heavy equipment and machinery, as construction activities can produce varying degrees of ground vibration depending on the equipment and methods employed and localized soil conditions. However, because exact future project alignments and construction fleets are unknown, construction that would involve use of vibratory equipment within 40 feet of a historic structures where present and eligible for the NRHP, CRHR, or Corona Register would have the potential to result damaging vibration levels, which would result in a substantial adverse change in a historic resource. Implementation of CUL-1 would

mitigate impacts to a less than significant level. In addition, the proposed project would not contribute to cumulatively significant impacts to historic resources.

Implementation of the projects identified in the 2018 RWMP would have the potential to impact archaeological resources pursuant to CEQA Guidelines, Section 15064.5, due construction activities including clearing, trenching, and grading activities associated with the construction of pipelines, underground structures, or other related facilities, which may result in disturbing native soil outside of previously excavated trenches. Implementation of Mitigation Measures CUL-2 and CUL-3 would reduce impacts to less than significant levels. In addition, the project would not contribute to cumulatively significant impacts to archaeological resources.

Implementation of the 2018 RWMP has the potential to disturb unknown human remains, which would result in a potentially significant impact. Compliance with California Health and Safety Code, Sections 7050.5 and 7052, and California Public Resources Code, Section 5097, would provide an opportunity to avoid or minimize the disturbance of human remains and to appropriately treat any remains that are discovered as specified under Mitigation Measure CUL-4. Implementation of these measures would reduce the impacts to less than significant levels. In addition, the proposed project would not contribute to cumulatively significant impacts to human remains.



Source: Redtail 2020; County of Riverside Imagery 2016.

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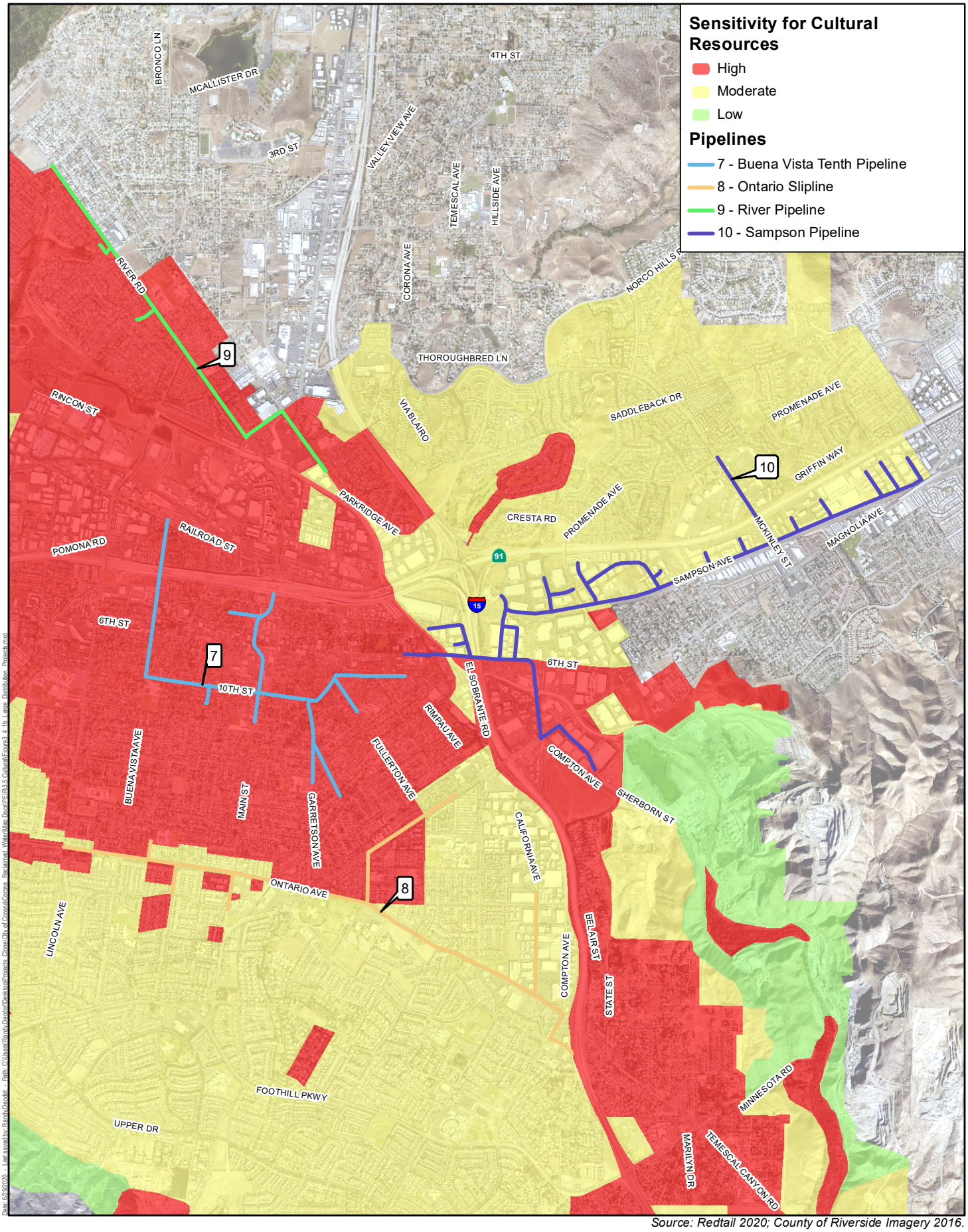
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Figure 3.5-1a

Cultural Sensitivity, Source of Supply Projects

City of Corona 2018 Reclaimed Water Master Plan

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Source: Redtail 2020; County of Riverside Imagery 2016.

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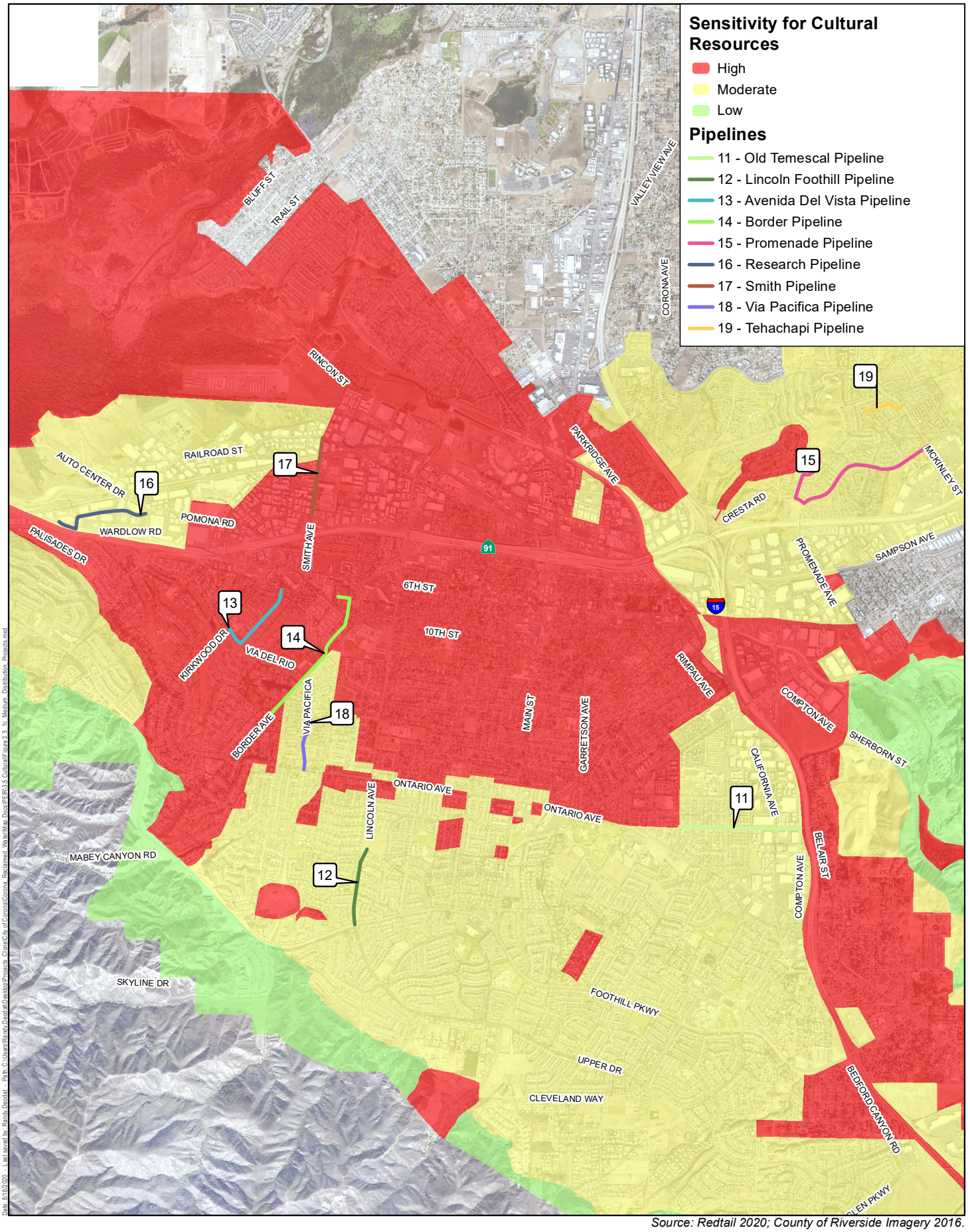
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Figure 3.5-1b

Cultural Sensitivity, Large Distribution Pipelines

City of Corona 2018 Reclaimed Water Master Plan

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Source: Redtail 2020; County of Riverside Imagery 2016.

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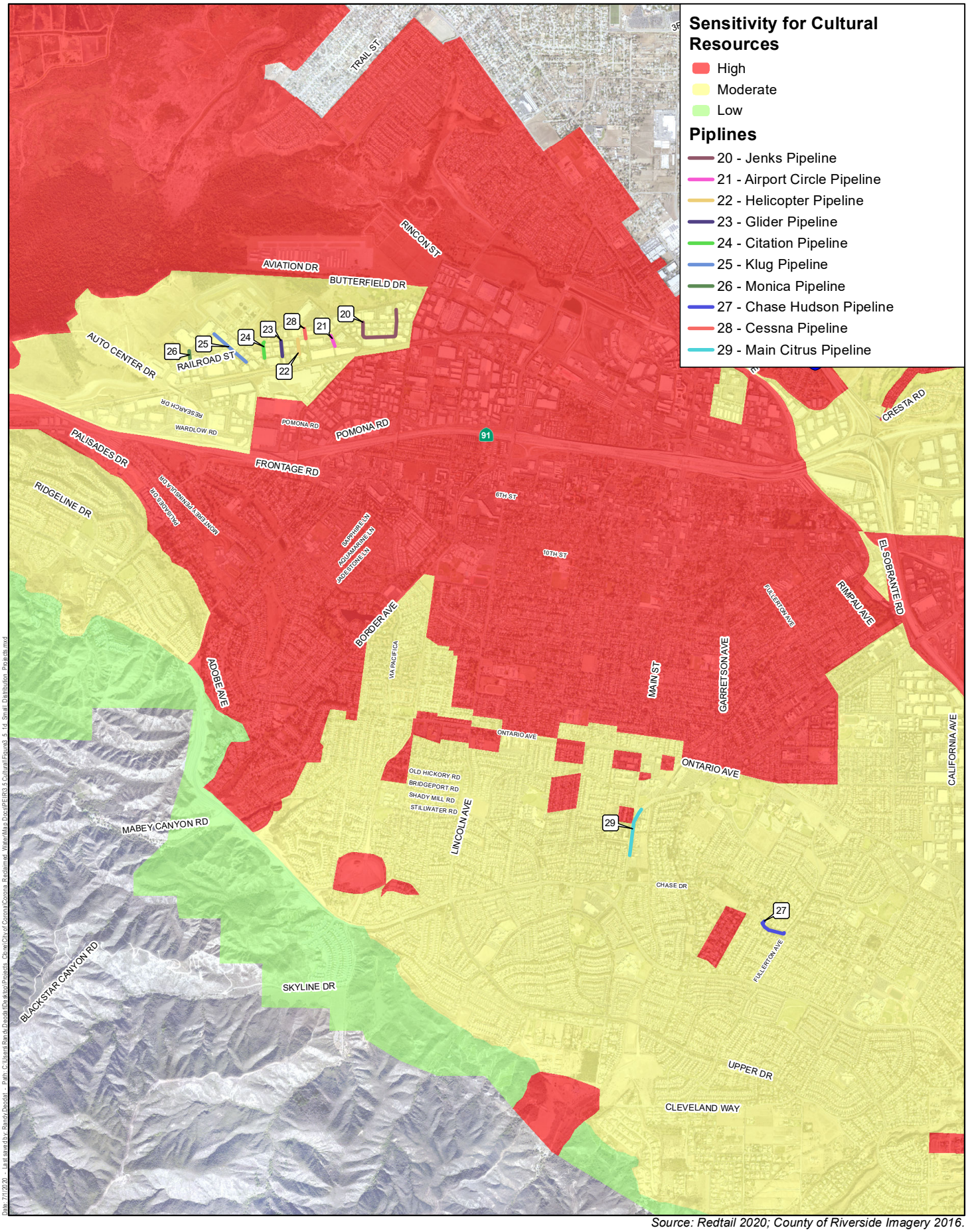
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Figure 3.5-1c

Cultural Sensitivity, Medium Distribution Pipelines

City of Corona 2018 Reclaimed Water Master Plan

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Source: Redtail 2020; County of Riverside Imagery 2016.

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Feet

Figure 3.5-1d

Cultural Sensitivity, Small Distribution Pipelines

City of Corona 2018 Reclaimed Water Master Plan

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3.6 Energy

This section discusses the potential impacts to energy and energy uses in the City of Corona's (City's) water service area that may result from the implementation of the 2018 Reclaimed Water Master Plan (project or 2018 RWMP). The analysis in this section is based in part on the following information: City of Corona 2020–2040 General Plan (City of Corona 2020).

3.6.1 Environmental Setting

Section 21100(b)(3) of the California Environmental Quality Act (CEQA) requires that an Environmental Impact Report include a detailed statement setting forth mitigation measures proposed to minimize significant effects on the environment, including but not limited to measures to reduce the wasteful, inefficient, and unnecessary consumption of energy. Appendix F of the CEQA Guidelines states that, in order to ensure that energy implications are considered in project decisions, the potential energy implications of a project shall be considered in an Environmental Impact Report 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 and Impact Analysis portions of technical sections, as well as through mitigation measures and alternatives.

In accordance with Appendices F and G of the CEQA Guidelines, this Program Environmental Impact Report includes relevant information and analyses that address the energy implications of the project and summarizes its anticipated energy needs, impacts, and conservation measures. Information in this section and related aspects of the project's energy implications are discussed in detail elsewhere in this Program Environmental Impact Report, including Chapter 2, Project Description, and Sections 3.3, Air Quality; 3.8, Greenhouse Gas Emissions; and 3.17, Transportation.

3.6.1.1 Regional Environmental Setting

Regional Location

The City of Corona (City) is in the northwestern portion of the County of Riverside (County), near the convergence of the Counties of Los Angeles, Orange, and Riverside, 45 miles southeast of the City of Los Angeles. The City is in a valley framed by mountains and the Prado Basin. Original settlements focused on development in an area in and adjacent to Grand Boulevard. The City is bordered by the City of Norco to the north, the City of Riverside to the east, and the County to the west and south. The Cleveland National Forest is south/southwest and the Prado Basin is northeast of the border of the City; these natural areas are barriers to the future outward growth of the City.

The City is defined in the County by its transportation infrastructure. Two major freeways and one railroad transect the City. The Riverside Freeway (State Route 91) runs east–west directly north of the City's center; Interstate 15 runs north–south near the eastern edge of the City. These

corridors are major transportation routes to the economic center of the County of Orange from the Inland Empire. In addition, the Burlington Northern Santa Fe railroad transects the center of the community, running parallel to State Route 91.

3.6.1.2 Local Environmental Setting

Location and Energy Use

The water service area is in the western portion of the County and includes the unincorporated communities of El Cerrito and Coronita and parts of Temescal Canyon. The water service area encompasses approximately 39 square miles and is bounded by the neighboring Cities of Norco and Eastvale to the north and the City of Riverside to the northeast. The eastern portion of the water service area is generally bounded by unincorporated County of Riverside, including the unincorporated community of Home Gardens. The southern and western portions of the water service area are bounded by the Cleveland National Forest and other County lands. The Prado Flood Control Basin is adjacent the City's northwestern corner.

Electricity

Southern California Edison

Southern California Edison (SCE) provides electrical service to most of the City and the water service area and uses numerous power plants throughout California and in other western states. As of 2017, 10 substations serve the City and the water service area, 8 of which are owned and operated by SCE. An additional substation is proposed in the City and, if approved by the California Public Utility Commission, is expected to be operational and in service by 2021. Most major electricity transmission lines are also maintained by SCE.

In 2018, total electricity consumption in the SCE's service area, which spans much of Southern California from the Counties of Orange and Riverside to the south to the County of Santa Barbara to the west to the County of Mono to the north, in gigawatt-hours was 102,521 (CEC 2015a; CEC 2019); 1 gigawatt-hour is equivalent to 1 million kilowatt-hours (kWh). Sources of electricity sold by SCE in 2018 the latest year for which data are available, include the following (SCE 2018):

- 36 percent renewable, consisting mostly of solar and wind
- 4 percent large hydroelectric
- 17 percent natural gas
- 6 percent nuclear
- 37 percent unspecified sources (i.e., not traceable to specific sources)[1]

[1] The electricity sources listed above reflect changes after the 2013 closure of the San Onofre Nuclear Generating Station, which is owned by SCE.

Corona Electric Utility

On April 4, 2001, the City Council passed Resolution No. 2001-25, which established a municipally owned electric utility. In August 2001, this electric utility, which is part of the City's Department of Water and Power, entered into an agreement with SCE to provide retail services as an electric services provider. The Department of Water and Power buys and sells power on behalf of the City's municipal electric accounts and properties in specific service areas.

Estimated Existing Electricity Demand

Total estimated existing (2018) electricity demand in the City and water service area based on data provided by SCE and Department of Water and Power is estimated at 1,412,642,823 kWh per year, as shown in Table 3.6-1.

Table 3.6-1. Citywide Existing Electricity Demand

Area	Electricity Use (kWh per year)
City	
Residential	371,670,609
Non-Residential	821,574,727
Municipal	83,334,805
Water Service Area	
Residential	83,753,212
Non-Residential	50,309,471
Total	**1,412,642,823**

Source: City of Corona 2019.
Notes: City = City of Corona; kWh = kilowatt-hour

Natural Gas

Southern California Gas Company (SoCalGas) provides natural gas service in the City and water service area and offers a variety of rebate programs to encourage energy-efficient home improvements and the purchase of energy-saving appliances. It also administers a no-cost, energy-saving installation program regulated by the California Public Utilities Commission. SoCalGas maintains transmission and distribution lines throughout the City and water service area.

The service area of SoCalGas spans much of the southern half of California, from Imperial County in the southeast to the County of San Luis Obispo in the northwest to part of the County of Fresno in the north to the County of Riverside and most of the County of San Bernardino in the east (CEC 2015b). Total natural gas supplies available to SoCalGas for years 2018 and 2019 were 3,055 million cubic feet per day and 3,385 million cubic feet per day, respectively (CGEU 2018). Total natural gas consumption in SoCalGas's service area was 719,423 million cubic feet for 2018, which is equal to 1,971 million cubic feet per day (City of Ontario 2020).

Existing Estimated Natural Gas Demands

Existing natural gas demands in the City and water service area based on data provided by SoCalGas are estimated at 43.9 million therms per year, as shown below in Table 3.6-2.

Table 3.6-2. Estimated Existing Natural Gas Demand

Area	Natural Gas Use (therms per year)
City	
Residential	19,377,837
Non-Residential	19,858,113
Water Service Area	
Residential	3,563,617
Non-Residential	1,145,853
Total	**43,945,421**

Source: City of Corona 2019.
Notes: City = City of Corona

Transportation Fuels

Table 3.6-3 shows the fuel use associated with vehicle miles traveled (VMT) currently generated under existing baseline conditions based on fuel use data obtained from EMFAC2017, Version 1.0.2, and VMT data provided by Fehr & Peers (CARB 2017). VMT is based on vehicle trips beginning and ending in the City and water service area boundaries and from external and internal trips (i.e., trips that either begin or end in the City and water service area). Table 3.6-3 provides fuel use associated with the full VMT associated with the City and water service area and for VMT that incorporates the accounting rules recommended by the California Air Resources Board's Regional Targets Advisory Committee (RTAC) created under Senate Bill (SB) 375. Under the RTAC accounting rules, only 50 percent of the trip length associated with external and internal and internal and external trips are accounted for in determining total VMT.[2]

Table 3.6-3. Existing Operations Related Annual Fuel Usage

	Gas		Diesel		Compressed Natural Gas		Electricity	
	VMT	Gallons	VMT	Gallons	VMT	Gallons	VMT	kWh
Full VMT	2,537,668,340	104,432,661	243,354,087	26,083,846	2,129,944	579,469	9,554,194	3,211,752
VMT per RTAC	1,335,955,575	54,978,577	128,113,767	13,731,841	1,121,309	305,062	5,029,806	1,690,827

Notes: kWh = kilowatt-hour; RTAC = Regional Targets Advisory Committee; VMT = vehicle miles traveled

[2] For accounting purposes, there are three types of trips:
1. Vehicle trips that originate and terminate in the City and water service area (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 and water service area.
2. Vehicle trips that either originate or terminate (but not both) in the City and service area (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 service area.
3. Vehicle trips that neither originate nor terminate within the City and water service area. 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 and water service area VMT.

3.6.2 Regulatory Setting

This section describes the federal, state, regulatory, and local regulatory framework adopted to address energy and energy uses.

3.6.2.1 Federal

Energy Independence and Security Act

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 2019a).

Energy Policy and Conservation Act

In 1975, Congress enacted the Energy Policy and Conservation Act, which established the first fuel economy standards for on-road motor vehicles in the United States. Pursuant to the act, the National Highway Traffic Safety Administration is responsible for establishing additional vehicle standards. In 2010, fuel economy standards were set at 27.5 miles per gallon for new passenger cars and 23.5 miles per gallon for new light-duty trucks. Heavy-duty vehicles (i.e., vehicles and trucks over 8,500 pounds gross vehicle weight) were not subject to fuel economy standards in 2010. Passenger cars and light trucks that would be used directly or indirectly associated with the project would be required to comply with the applicable fuel economy standards. Fuel economy is determined based on each manufacturer's average fuel economy for the fleet of vehicles available for sale in the United States.

Update to Corporate Average Fuel Economy Standards

The current Corporate Average Fuel Economy standards (for model years 2011 to 2016) incorporate stricter fuel economy requirements promulgated by the federal government and California into one uniform standard. Additionally, automakers were required to cut greenhouse gas (GHG) emissions in new vehicles by roughly 25 percent by 2016 (resulting in a fleet average of 35.5 miles per gallon by 2016). Rulemaking to adopt these new standards was completed in 2010. California agreed to allow automakers that show compliance with the national program to be deemed compliant with state requirements. The federal government issued new standards in 2012 for model years 2017 to 2025 that will require a fleet average of 54.5 miles per gallon in 2025. While the U.S. Environmental Protection Agency (USEPA) is reexamining the 2017–2025

emissions and Corporate Average Fuel Economy standards, a consortium of automakers and California have agreed on a voluntary framework to reduce emissions that can serve as an alternative path forward for clean vehicle standards nationwide. Automakers who agreed to the framework are Ford, Honda, BMW of North America, and Volkswagen Group of America. The framework supports continued annual reductions of vehicle GHGs through the 2026 model year, encourages innovation to accelerate the transition to electric vehicles, and provides industry the certainty needed to make investments and create jobs. This commitment means that the auto companies party to the voluntary agreement will only sell cars that meet these standards in the United States (Caltrans 2020).

3.6.2.2 State

Renewables Portfolio Standard

Senate Bill 100

On September 10, 2018, Governor Brown signed SB 100, which replaces the SB 350 requirement of 45 percent renewable energy by 2027 with the requirement of 50 percent by 2026 and raises California's Renewables Portfolio Standard (RPS) requirements for 2050 from 50 percent to 60 percent. 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. Furthermore, the bill also establishes an overall state policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of retail sales of electricity to California end users and 100 percent of electricity procured to serve 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 350

SB 350 (de Leon) was signed into law in September 2015. SB 350 establishes tiered increases to the RPS of 40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. SB 350 also set a new goal to double the energy efficiency savings in electricity and natural gas through energy efficiency and conservation measures.

Senate Bills 1078, 107, and X1-2 and Executive Order S-14-08

The California RPS program was established in 2002 under SB 1078 (Sher) and 107 (Simitian). The RPS program requires investor-owned utilities, electric service providers, and community choice aggregators to increase the use of eligible renewable energy resources to 33 percent of total procurement by 2020. Initially under the RPS, certain retail sellers of electricity were required to increase the amount of renewable energy each year by at least 1 percent to reach at least 20 percent by December 30, 2010. Executive Order S-14-08 was signed in November 2008, which expanded the state's Renewable Energy Standard to 33 percent renewable power by 2020. This standard was

adopted by the legislature in 2011 (SB X1-2). The 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. Based on the 2019 RPS Annual Report, all electricity retail sellers had an annual target to serve at least 29 percent of their electric load with RPS eligible resources by December 31, 2018. In general, retail sellers either met or exceeded the 29 percent interim RPS target, and many are on track to achieve their 2017–2020 compliance period requirements (CPUC 2020).

Heavy-Duty (Tractor-Trailer) Greenhouse Gas Regulation

The tractors and trailers subject to this regulation must either use USEPA 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. Other tractors must use SmartWay-verified, low-rolling resistance tires. There are also requirements for trailers to have low- rolling resistance tires and aerodynamic devices.

The SmartWay Technology Program is a public-private initiative between the USEPA, large and small trucking companies, rail carriers, logistics companies, commercial manufacturers, retailers, and other federal and state agencies. Its purpose is to improve fuel efficiency and the environmental performance (reduction of both GHG emissions and air pollution) of the goods movement supply chains. SmartWay consists of the following three components (USEPA 2019b):

- **SmartWay Transport Partnership:** Freight shippers, carriers, logistics companies, and other stakeholders partner with USEPA to measure, benchmark, and improve logistics operations so they can reduce their environmental footprint.
- **SmartWay Brand:** Through SmartWay technology verification and branding, the USEPA has accelerated availability, adoption, and market penetration of fuel-saving technologies and operational practices while helping companies save fuel, lower costs, and reduce adverse environmental impacts.
- **SmartWay Global Collaboration:** The USEPA works with a broad range of national and global organizations to harmonize sustainability accounting methods in the freight sector. SmartWay also provides support to global policy makers who wish to model transportation sustainability programs after the SmartWay Technology Program.

Through the SmartWay Technology Program, the USEPA has evaluated the fuel-saving benefits of various devices through grants, cooperative agreements, emissions and fuel economy testing, demonstration projects, and technical literature review. As a result, the USEPA has determined

that the following types of technologies provide fuel-saving or emission-reducing benefits when used properly in their designed applications, and has verified certain products (USEPA 2019c):

- Idle reduction technologies (i.e., less idling of the engine when it is not needed) reduce fuel consumption.
- Aerodynamic technologies minimize drag and improve airflow over the entire tractor-trailer vehicle. Aerodynamic technologies include gap fairings that reduce turbulence between the tractor and trailer, side skirts that minimize wind under the trailer, and rear fairings that reduce turbulence and pressure drop at the rear of the trailer.
- Low-rolling resistance tires can roll longer without slowing down, which reduces the amount of fuel used. Rolling resistance (or rolling friction or rolling drag) is the force resisting the motion when a tire rolls on a surface. The wheel will eventually slow down because of this resistance.
- Retrofit technologies include diesel particulate filters and emissions upgrades (to a higher tier) reduce emissions.
- Federal excise tax exemptions.

State Alternative Fuels Plan

Assembly Bill 1007 requires the California Energy Commission to prepare a plan to increase the use of alternative fuels in California. The State Alternative Fuels Plan was prepared by the California Energy Commission with the California Air Resources Board and in consultation with other federal, state, and local agencies to reduce petroleum consumption, increase use of alternative fuels (e.g., ethanol, natural gas, liquefied petroleum gas, electricity, and hydrogen), reduce GHG emissions, and increase in-state production of biofuels. The State Alternative Fuels Plan recommends a strategy that combines private capital investment, financial incentives, and advanced technology that will increase the use of alternative fuels, result in significant improvements in the energy efficiency of vehicles, and reduce trips and VMT through changes in travel habits and land management policies. The Alternative Fuels and Vehicle Technologies Funding Program legislation (Assembly Bill 118, Statutes of 2007) proactively implements this plan (CEC 2007).

3.6.2.3 Regional

Southern California Association of Governments Regional Transportation Plan

Southern California Association of Governments (SCAG) is the largest metropolitan planning organization in California, covering 6 counties and 191 cities, including the City. It is the transportation planning agency responsible for developing and implementing the long-range Regional Transportation Plan known as the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). The 2016–2030 RTP/SCS continues to emphasize the key land use and transportation strategies in the first SCS that support a more sustainable future for the

SCAG region. SCAG anticipates that new growth will occur within existing urban boundaries with higher density development instead of sprawling outward. It supports several strategies aimed at reducing the number of vehicle trips.

3.6.2.4 Local

City of Corona Climate Action Plan

The City's 2019 Climate Action Plan (CAP) Update provides direction for the reduction of GHG emissions from sources under the City's jurisdiction in coordination with the City's land use decisions from the City of Corona 2020–2040 General Plan. The 2019 CAP Update provides measures to meet the goal of reducing community GHG emissions to a level 49 percent below 2008 levels by 2030. Furthermore, the 2019 CAP Update aims to meet the goals set forth in Executive Order S-03-05 to reduce GHG emissions to a level 80 percent below 1990 levels by 2050 (City of Corona 2019).

To meet the established 2030 reduction target, the 2019 CAP Update includes various reduction measures across several sectors that include energy efficiency, water conservation, alternative transportation, solid waste reduction, and clean energy. The reduction measures encompass both state- and local-based measures. Identified state-based measures related to energy include compliance with the Building Energy Efficiency Standards and the California Green Building Standards Code (CALGreen) and utilities meeting the RPS. The 2019 CAP Update also includes energy-related local-based measures, which are measures the City can implement that are beyond statewide measures. For example, Measures 2.1 and 4.1 would promote Tiers 1 and 2 green building ratings such as LEED, Build It Green, or Energy Star-certified buildings to exceed energy efficiency standards for new residential and commercial units. Other energy-related local measures include supporting energy efficiency and renewable energy retrofits for existing homes and commercial buildings (see Measures 1.4 and 3.4). The 2019 CAP Update also includes measures that support increasing renewable energy sources by installing solar photovoltaic panels on residential and commercial building rooftops to save energy and incorporating renewable energy systems into new residential and non-residential development projects (see Measure 9.1) (City of Corona 2019).

City of Corona 2020–2040 General Plan

The following goals and policies in the City of Corona 2020–2040 General Plan are relevant to energy and energy use (City of Corona 2020).

Circulation Element

Goal CE-3. Maximize the efficiency of the circulation system through the use of transportation system management strategies. Reduce total vehicular miles traveled in Corona through the development and improvement of alternative transportation modes, the reduction in the number of trips generated, and the reduction in trip distances.

Policy CE-3.3. Encourage employers to reduce vehicular trips by offering to employees commute trip reduction programs, such as transit fare subsidies, alternative work schedules and telecommuting, employer-sponsored van pools or shuttles, ride share programs, and bike share.

Goal CE-4. A public transportation system that provides mobility for residents and encourages use of public transportation as an alternative to automobile travel.

Policy CE-4.5. Encourage employers to reduce single-occupant vehicular trips by providing employee incentives (e.g., reduced rate transit passes).

Environmental Resources Element

Goal ER-12. Improvement in air quality within the Corona Planning Area by controlling point sources, reducing vehicle trips, implementing efficient land use planning and construction practices, and energy conservation.

Policy ER-12.4. Continue to expand the City-owned fleet of vehicles to alternative fuels, such as methanol or other clean-burning energy sources, as technology becomes feasible and cost-effective.

Policy ER-12.14. Reduce energy consumed by commercial and residential uses by requiring the use and installation of energy conservation features in all new construction projects and wherever feasible, retrofitting existing and redevelopment projects.

Goal ER-13. Reduce greenhouse gas (GHG) emissions from City operations and community-wide sources 15% below 2008 levels by 2020, 49% below 2008 levels by 2030, and 66% below 2008 levels by 2040.

Policy ER-13.4. Support the increase of clean energy supply to existing and new development and municipal facilities through means to include, but not be limited to: onsite or other local renewable energy sources for new and existing buildings and infrastructure.

Infrastructure Element

Goal IU-2. Minimize water consumption and urban runoff generation through site design, the use of water conservation systems, and other techniques.

Policy IU-2.1. Continue to implement the City's water conservation and reuse efforts; review these programs regularly, and modify them as appropriate and feasible.

Policy IU-2.2. Establish guidelines and standards for water conservation and actively promote use of water conserving devices and practices in new construction, major alterations and additions to existing buildings, and retrofitting of irrigation systems where feasible.

Policy IU-2.4. Expand the recycled water program to provide water for landscaped medians and other appropriate open spaces along SR-91 [State Route 91] and I-15 [Interstate 15], in coordination with Caltrans when feasible.

3.6.3 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a significant impact related to energy would occur if the project would (CEQA Guidelines, Section 15000 et seq.):

1. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.
2. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

3.6.4 Environmental Analysis

3.6.4.1 Threshold 1: Wasteful or Inefficient Energy Use

Would the project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Impact Analysis

Construction

Project construction emissions were estimated as described in Section 3.3. During construction, the project would result in an increase in energy consumption through the combustion of fossil fuels in construction vehicles, worker commute vehicles, and construction equipment. Construction would require piping, trenching and backfilling, grading, building construction, asphalt restoration, striping, and coating.

Fossil fuels used for construction vehicles and other energy-consuming equipment would be used during all phases of construction. Types of equipment used would include diesel-powered construction and transportation equipment, including paving equipment, excavators, rubber-tired dozers, tractors/loaders, and graders. Worker vehicle trips to and from the water service area would result in gasoline consumption.

Total diesel and gasoline use from operation of construction equipment, worker trips, haul truck trips, and vendor truck trips is based on the results of the GHG analysis in Section 3.8. The project would require approximately 38,547 gallons of diesel fuel or 1,763 gallons of gasoline (Table 3.6-4).

Table 3.6-4. 2018 RWMP Total Fuel Consumption

Fuel Type	Total Fuel Consumption (gallons)
Diesel	38,547
Gasoline	1,763

Sources: USEPA 2018a, 2018b.

Notes: Diesel fuel use includes fuel use from construction equipment, haul truck trips, and vendor truck trips. Assumes a conversion factor of 10.21 kilograms of carbon dioxide (CO_2) per gallon for diesel fuel. Gasoline use includes fuel use from worker vehicle trips. Assume a conversion factor of 8.78 kilograms of carbon dioxide (CO_2) per gallon for motor gasoline.

Construction required for the project would be typical for the City and project type. The project does not include unusual circumstances that would require unusually high energy use for construction, such as helicopter delivery or highly specialized construction waste disposal requirements. Limitations of idling of vehicles and equipment and requirements that equipment be properly maintained would result in fuel savings. California regulations (13 CCR 2449[d][3], 2485) limit idling from both on-road and off-road diesel powered equipment and are enforced by the California Air Resources Board. In addition, given the significant cost of fuel, contractors have a strong financial incentive to avoid wasteful, inefficient, and unnecessary consumption of energy during construction. Fuel use would be limited to the amount necessary for project completion. Construction of projects included in the 2018 RWMP would result in a nominal increase in fuel consumption during construction and represent typical construction practices. As stated in Section 3.6.1.2, annual fuel consumption in the City in 2017 was approximately 104,432,661 gallons of gasoline and 26,083,846 gallons of diesel fuel (CARB 2017). For comparison, total fuel consumption associated with the construction of the 2018 RWMP would be approximately 0.001 percent of annual gasoline fuel consumption and 0.1 percent of annual diesel fuel consumption. Energy consumption during construction would be necessary for project completion and would comply with applicable regulations so that energy consumption would not be wasteful or inefficient. Therefore, impacts would be less than significant.

Operation

Operation of the project would not be anticipated to generate more than a nominal increase in vehicle trips to and from the water service area. Maintenance trips would be incorporated into existing underlying jurisdiction maintenance schedules for existing facilities, and vehicle trips would be minimal and intermittent. However, energy use is expected for the operation of two new pump stations. The 2001 Program Environmental Impact Report for the City of Corona Recycled Master Plan Project assumes that the electrical consumption for each newly constructed pump station would be approximately 1.7 million kWh per year, which would be powered by the electric grid (City of Corona 2001). Operation of two additional pump stations would represent approximately 0.2 percent of the City's annual electricity consumption (see Section 3.6.1.2). Equipment would only operate as necessary to provide adequate pumping services. Therefore, operation of the project would not increase wasteful, inefficient, or unnecessary consumption of energy resources. Therefore, impacts would be less than significant.

Level of Significance Before Mitigation

Impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Because no mitigation measures are required, impacts would remain less than significant.

3.6.4.2 Threshold 2: Conflict with Renewable or Energy Efficiency Plan

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

Impact Analysis

The applicable plans for the water service area related to renewable energy or energy efficiency are the City of Corona 2020–2040 General Plan and 2019 CAP Update. Energy efficiency goals in the City of Corona 2020–2040 General Plan primarily focus on measures directed toward residential and commercial building (ER-12.14), although Goal 13.4 in the Environmental Resources Element (ER-13.4) supports the increase of clean energy supply to existing and new development and municipal facilities through means to include, but not be limited to: onsite or other local renewable energy sources for new and existing buildings and infrastructure. Policy ER-12.14 in the Environmental Resources Element in the City of Corona 2020–2040 General Plan does not apply because the project is not characterized as a commercial or residential project. Because the implementation of the RWMP would require limited operational energy, and construction equipment would meet current energy efficiency standards, the project would not warrant the need for onsite local renewable energy sources. Furthermore, the project is consistent with and actively supports Goals IU-2.1 , IU-2.2 , and IU-2.1 in the Infrastructure and Utilities Element in the City of Corona 2020–2040 General Plan. Energy efficiency goals adopted in the 2019 CAP Update pertain to residential and commercial development and water efficiency. Because the project increases the use of recycled water and, therefore, contributes directly to water efficiency, the project would be consistent with the 2001 RWMP. Therefore, the project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Impacts would be less than significant.

Level of Significance Before Mitigation

Impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Because no mitigation measures are required, impacts would remain less than significant.

3.6.5 Cumulative Impacts and Mitigation

3.6.5.1 Cumulative Threshold 1: Wasteful or Inefficient Energy Use

SCE is the service provider that sources electricity and natural gas resources in the region; therefore, the geographic scope for impacts related to energy consumption encompasses the SCE's service area. Regional fuel consumption is considered at the regional level through the 2040 MTP/SCS and local Regional Transportation Plans; therefore, the geographic scope for impacts related to fuel consumption is the SCAG region.

The 2018 RWMP is a planned project to support the growth considered in the MTP/SCS and City of Corona 2020–2040 General Plan. Similar to the project and in compliance with CEQA, projects in the City of Corona 2020–2040 General Plan or MTP/SCS would be required to demonstrate that the energy use required for construction and operation would not be unnecessary, wasteful, or inefficient. New development projects would be required to comply with increasingly stringent statewide energy efficiency regulations, such as the Title 24 building standards and the applicable portions of the MTP/SCS or 2016–2030 RTP/SCS, to encourage energy-efficient development and land use patterns that reduce VMT. The projects would be reviewed separately, and in the event that potential energy inefficiencies are identified for these projects, mitigation measures would be identified that would likely require that sustainability or energy efficiency features be incorporated into the project.

Therefore, the project's contribution to cumulative impacts related to energy consumption would not be cumulatively considerable. No mitigation measures are required.

3.6.5.2 Cumulative Threshold 2: Conflict with Renewable or Energy Efficiency Plan

Based on the project's estimated energy consumption, the project would account for a negligible percent of SCE's projected sales for the project's build-out year. Although future development would result in the irreversible use of renewable and non-renewable energy resources during project and construction and operation, other future development projects would be expected to incorporate energy conservation features, comply with applicable regulations as stated in the City of Corona 2020–2040 General Plan and the 2019 CAP Update, and incorporate mitigation measures as necessary. Accordingly, the project's contribution to cumulative impacts related to conflicts with applicable renewable or energy efficiency plans would not be cumulatively considerable and, thus, would be less than significant.

3.6.6 Conclusion

Project construction and operations would result in a nominal increase in electricity and transportation-related energy. As discussed previously, the project's energy consumption during construction would be necessary and would comply with applicable regulations so energy consumption would not be inefficient. In addition, the project's anticipated energy consumption during operation would represent less than 1 percent of annual energy consumption and would not be wasteful. Furthermore, the project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency and would be consistent with goals set forth in the City of Corona 2020–2040 General Plan and 2019 CAP Update related to water conservation and reuse.

Based on the analysis provided, the project's contribution to cumulative impacts related to energy consumption (i.e., electricity, natural gas, and transportation) would not result in the inefficient use of energy resources or conflict with an adopted plan regarding energy conservation. As such, the project's impacts would not be cumulatively considerable, and therefore, the energy impacts associated with the implementation of the project would be less than significant.

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3.7 Geology, Soils, and Paleontological Resources

This section discusses the potential impacts to geology, soils, and paleontological resources in the City of Corona's (City's) water service area that may result from the implementation of the 2018 Reclaimed Water Master Plan (project or 2018 RWMP). The analysis in this section is based in part on the following information: City of Corona 2020–2040 General Plan (City of Corona 2020).

3.7.1 Environmental Setting

This section describes the environmental setting as it relates to geology, soils, and paleontological resources for the water service area. The project proposes reclaimed water facilities in various locations throughout the water service area.

3.7.1.1 Regional Geological Setting

The water service area is situated in the Peninsular Ranges Geomorphic Province. This geomorphic province encompasses an area that extends approximately 900 miles from the Transverse Ranges and the Los Angeles Basin, south to the southern tip of Baja California (Norris and Webb 1990). The province varies in width from approximately 30 to 100 miles. In general, the province consists of a northwest–southeast-oriented complex of blocks separated by similarly trending faults. The portion of the Peninsular Ranges under the water service area is primarily composed of a variety of Cretaceous plutonic rocks, primarily monzogranite, and granodiorite but also micropegmatite granite and gabbros, among others. Monzogranites of the Cajalco pluton, a large composite intrusion that extends south and east of the water service area, are the most widespread of the group (Gray et al. 2002a).

The southern portions of the water service area border the base of the Santa Ana Mountains, whose basement rocks are primarily composed of Bedford Canyon Formation, a fossiliferous limestone containing faunal remains that suggest the formation was formed in black smoker environments (Gray et al. 2002b). Santiago Peak Volcanics unconformably overly and intrude the Bedford Canyon Formation and consist of Cretaceous age basaltic andesite, andesite, dacite, rhyolite, breccia, and volcaniclastic rocks. Volcanic activity occurring during the same time the Santiago Peak Volcanics were formed also hydrothermally altered the rocks, and minor serpentine and associated silica-carbonate rock occur in association (Gray et al. 2002b).

3.7.1.2 Seismicity

Faults are fractures in Earth's crust, along which rocks on one side of the fault have moved relative to those on the other side. Most faults are the result of repeated displacements over a long period of time. A fault trace is a line on Earth's surface defining the fault. An active fault is generally considered to have ruptured the ground surface within the last 11,000 years. Major active fault zones are in the water service area. Based on review of the referenced geologic and seismic

literature, there are mapped Alquist-Priolo Earthquake Fault Zones within the City limits associated with the Chino Fault and Glen Ivy segment of the Elsinore Fault. Both of these are part of the Whittier-Elsinore Fault Zone. The Alquist-Priolo Earthquake Fault Zones are along faults that are sufficiently active and well defined. Structures for human occupancy are not allowed within 50 feet of the trace of an active fault.

Active and potentially active faults are close to water service area (see Figure 3.7-1, Regional Fault Locations). The Peninsular Ranges Province is traversed by a group of subparallel fault zones trending roughly northwest. Major fault systems include the active San Andreas, San Jacinto, Whittier-Elsinore, and Newport-Inglewood Fault Zones. These major fault systems form a regional tectonic framework consisting primarily of right-lateral, strike-slip movement. The City is situated between two major, active fault zones—the Whittier-Elsinore Fault Zone located to the southwest and the San Jacinto Fault located to the northeast. Other potentially active faults in proximity to the City are the San José, Cucamonga, Sierra Madre, Newport-Inglewood, and San Andreas Faults.

Whittier-Elsinore Fault

The Whittier-Elsinore Fault Zone is the closest major fault system to the study area and one of the largest in Southern California. The Elsinore Fault Zone extends from near the United States–Mexico border northwesterly to the northern Santa Ana Mountains. At the northern end, the zone of mapped faults branches into two segments west and east, the Whittier Fault and the Chino-Central Avenue Fault. The northern portion of the Elsinore Fault Zone is also referred to as the "Glen Ivy segment," and it is located on the extreme southwest portion of the City. The Glen Ivy segment is zoned under the Alquist-Priolo Earthquake Fault Zone Act. Dominant movement along the fault is right-lateral strike-slip. The Glen Ivy segment could produce a maximum moment magnitude 6.8 earthquake. From the northern end of the Glen Ivy segment the mapped zone of faulting is fragmented into a zone of discontinuous northwesterly trending faults along the eastern side of the Santa Ana Mountains in Corona. South of the City, the Temecula segment continues from Lake Elsinore for 27 miles. Subsurface investigations have shown that the Elsinore Fault is active and may have a recurrence interval of about 250 years for large earthquakes (Rockwell et al. 1986). The fault branches into the Whittier and Chino-Central Avenue faults near the Santa Ana River.

The Chino-Central Avenue Fault crosses the western portion of Corona. The fault branches away from the Elsinore (Glen Ivy) Fault and extends northwest for a distance of approximately 13 miles through the Prado Basin and into the Puente Hills. Dominant movement along the fault is right-reverse oblique slip. The Chino Fault could produce a maximum moment magnitude 6.9 earthquake. The Chino Fault is zoned under the Alquist-Priolo Earthquake Zone Act.

The Whittier Fault Zone extends approximately 24 miles from Whittier Narrows in Los Angeles County, southeasterly to Santa Ana Canyon where it merges with the Elsinore Fault Zone. The

Whittier Fault Zone averages 1,000 to 2,000 feet in width and is made up of many subparallel and an echelon fault splays, which merge and branch along their course. The Whittier Fault Zone does not extend inside the City boundaries, but approaches to within a mile of the western edge of the City. Available information indicates that the Whittier Fault Zone is active and may be capable of generating an earthquake of magnitude 6.8 accompanied by surface rupture along one or more of its fault traces. The Whittier Fault is zoned under the Alquist-Priolo Earthquake Fault Zone Act northwest of the City.

San Jose Fault

The San Jose Fault is approximately 12.4 miles long, extending southwest and west from near the mouth of San Antonio Canyon on the southern front of the San Gabriel Mountains about 17.8 miles north of the City. The fault is characterized by left-lateral reverse oblique slip movement, and the primary dip direction is to the northwest at about 75 degrees. This fault zone was responsible for the 1990 magnitude 5.4 upland earthquake. The San Jose Fault could produce a maximum moment magnitude 6.9 earthquake.

Cucamonga Fault

The Cucamonga Fault is the eastward extension of the Sierra Madre Fault Zone and is located about 20.4 miles north of the City. The Cucamonga Fault is about 17.4 miles long, extending west from Duncan Canyon to San Antonio Heights along the southern front of the San Gabriel Mountains. The Cucamonga Fault is capable of a maximum moment magnitude 7.0 earthquake. The fault is characterized by reverse dip-slip movement with a primary dip direction to the north at approximately 45 degrees. The Cucamonga Fault is considered active and is included in an Alquist-Priolo Earthquake Fault Zone.

San Jacinto Fault

The San Bernardino and San Jacinto Valley (aka Claremont) segments of the San Jacinto Fault are regarded as the most active in Southern California (Allen et al. 1965). The fault zone extends for over 130 miles and is characterized by right-lateral strike-slip movement. The San Jacinto Fault is capable of a maximum moment magnitude 6.9 earthquake. The fault is zoned under the Alquist-Priolo Earthquake Fault Zone Act.

Sierra Madre Fault Zone

The main segment of the Sierra Madre Fault Zone is approximately 21 miles northwest of the City. The Sierra Madre Fault Zone is approximately 35.4 miles long, extending west–northwest from Claremont and following the southern front of the San Gabriel Mountains to San Fernando. The Sierra Madre Fault Zone is characterized by reverse dip-slip movement and capable of a maximum moment magnitude 7.0 earthquake. The western portion of the fault is zoned under the Alquist-Priolo Earthquake Fault Zone Act.

Newport-Inglewood Fault Zone

The Newport-Inglewood Fault Zone, source of the 1933 Long Beach earthquake (magnitude 6.4), consists of a series of disconnected, northwest-trending fault segments which extend from Los Angeles, through Long Beach and Torrance, to Newport Beach (Bilodeau et al. 2007; CDWR 1967). From Newport Beach, the fault zone continues offshore southeasterly past Oceanside. The most recent evidence for near surface movement during Holocene time is displacement of the Holocene Bolsa aquifer in the vicinity of Bolsa Chica Gap (CDWR 1967). Borehole evidence combined with groundwater pumping tests, piezometric levels, and geophysical data indicate that the North Branch and the Bolsa-Fairview traces of the Newport- Inglewood Fault Zone offset the base of the Bolsa aquifer by 20 feet and 10 feet (vertical separation), respectively. Although no onshore surface fault rupture has taken place in historic time (since 1769), the fault zone is considered capable of generating an earthquake of magnitude 7.1.

San Andreas Fault

The San Bernardino and Southern segments of the San Andreas Fault are approximately 27.8 miles northeast of the City. The overall fault zone trends generally northwest for almost the entire length of California, from Cape Mendocino south to near the Mexican border. Past work estimated the recurrence interval for a magnitude 8.0 earthquake along the entire fault zone is between 50 and 200 years, and a 140- to 200-year recurrence interval for major (magnitude 7.0 to magnitude 7.9) to great (magnitude 8.0 or larger) earthquakes along the southern fault zone segment. The San Bernardino segment is estimated to be capable of a maximum moment magnitude 7.5 earthquake, although recent work estimates that larger earthquakes are possible if the rupture extends beyond local segments (Lin II 2017).

Seismic activity along nearby or more distant fault zones is likely to cause ground shaking within the City limits. Distances from central Corona to active faults within 30 miles of the City are presented in Table 3.7-1.

Table 3.7-1. Principal Active Faults

Fault	Distance from Fault to Central Corona (miles)	Maximum Moment Magnitude Earthquake
Chino-Central Avenue	1.9	6.9
Elsinore – Glen Ivy	3.4	6.8
Elsinore – Whittier	4.6	6.8
San Jose	17.8	6.9
Cucamonga	20.4	7.0
San Jacinto – San Bernardino	20.4	6.9
Elsinore -Temecula	20.8	6.8
Sierra Madre (central)	21.0	7.0
San Jacinto – San Jacinto Valley	22.0	6.9

Table 3.7-1. Principal Active Faults

Fault	Distance from Fault to Central Corona (miles)	Maximum Moment Magnitude Earthquake
Newport-Inglewood(L.A. Basin)	27.3	6.9
Newport-Inglewood (offshore)	27.4	7.1
San Andreas – San Bernardino	27.8	7.5
San Andreas – Southern	27.8	7.5

Source: City of Corona 2020.

3.7.1.3 Geologic Hazards

Expansive Soils

Expansive soils shrink or swell as the moisture content decreases or increases. Structures built on these soils may experience shifting, cracking, and breaking damage as soils shrink and subside or expand. Based on the presence of alluvial materials in the City, there is some potential for expansive soils (USDA 1971).

Corrosive Soils

Corrosive soils contain chemical constituents that may cause damage to construction materials such as concrete and ferrous metals. One such constituent is water soluble sulfate, which if in high enough concentrations, can react with and damage concrete. Electrical resistivity, chloride content, and pH level are ll indicators of the soil's tendency to corrode ferrous metals.

Subsidence

The phenomenon of widespread land sinking, or subsidence, is generally related to substantial overdraft of groundwater or petroleum reserves from underground reservoirs. The northwestern portion of the City is partially within the Prado-Corona Oil Field, and drinking water production wells are also present within the project boundaries. Production in the Prado-Corona Oil Field has declined in recent years from over 10 thousand barrels a year in the 1980s to none in the 2010s. Based on the relatively small size of the oil field and its limited production volumes, and the presence and use of groundwater spreading basins within the area, subsidence is not considered a significant potential hazard to the City.

Seismic Hazards

Historically, the City has generally not experienced a major destructive earthquake. However, based on a search of earthquake databases of the United States Geological Survey's National Earthquake Information Center, several major earthquakes (magnitude 5.8 or more) have been recorded within approximately 60 miles of the City since 1769. The latest was the Northridge earthquake and Granada Hills aftershock in 1994, about 60 miles from the City.

Surface (Fault) Rupture

The potential for ground rupture due to fault movement is generally considered related to the seismic activity of known fault zones. Earthquake Fault Zones (formerly known as "special study zones") have been established along known active faults in California in accordance with the Alquist-Priolo Earthquake Fault Zoning Act. Two active surface faults are mapped in the City and are zoned under the Alquist-Priolo Earthquake Fault Zone Act. Much of the western portion of the City is also in a Riverside County Fault Zone. Faults such as the Chino Fault and the Glen Ivy segment of the Elsinore Fault could cause ground rupture in the water service area.

Slope Failure

Landslides are perceptible downward movements of a mass of earth (soil or debris), rock, or a combination of the two under the influence of gravity. Landslide materials are commonly porous and very weathered in the upper portions and along the margins of the slide. They may also have open fractures or joints. Slope failures can occur during or after periods of intense rainfall or in response to strong seismic shaking. Areas of high topographic relief, such as steep canyon walls, are most likely to be impacted by slope failure.

Liquefaction

Liquefaction is a process by which water-saturated sediment suddenly loses strength, commonly accompanies strong ground motions caused by earthquakes. During an extended period of ground shaking or dynamic loading, porewater pressures increase and the ground is temporarily altered from a solid to a liquid state. Liquefaction is most likely to occur in unconsolidated, granular sediments that are water saturated and less than 30 feet below the ground surface. Ground shaking must be of relatively long duration to cause liquefaction.

The Seismic Safety Element of the City of Corona 2020–2040 General Plan for the City identified liquefaction potential zones based on ground-shaking intensity, alluvial age, alluvial thickness, and groundwater depth (City of Corona 2020). The areas of greatest liquefaction potential are those underlain by recent alluvium with groundwater depths shallower than 10 feet (see Figure 3.7-2, Liquefaction Hazards). These areas are in the Temescal Creek floodplain, including the areas near the airport and Cajalco Road. The other portions of the water service area are rated low to moderate because the depth to groundwater is greater than 10 feet.

3.7.1.4 Paleontological Resources

Paleontological resources are the fossilized remains of organisms from prehistoric environments found in geologic strata. These are valued for the information they yield about the history of the earth and its past ecological settings. There are two types of resources: vertebrate and invertebrate. These resources are found in geologic strata conducive to their preservation, typically sedimentary formations. Paleontological sites are areas that show evidence of prehuman activity. Often they

are simply small outcroppings visible on the surface or sites encountered during grading. While the sites are important indications, it is the geologic formations that are the most important because they may contain important fossils. Potentially sensitive areas for the presence of paleontological resources are based on the underlying geologic formation. Table 3.7-2 and Figure 3.7-3, Sensitive Paleontological Resources, identify the geologic formations in the water service area and their potential to contain paleontological resources.

Table 3.7-2. Paleontological Sensitivities of Geological Formations in the Water Service Area

Geologic Formation	Sensitivity[1]
Artificial Fill (Qaf)	None
Very young wash deposits (Qw)	Low-to-High
Very young landslide deposits (Qls)	Low-to-High
Young alluvial fan deposits (Qyf)	Low-to-High
Unit 1 (Qyf1)	High
Young axial-channel deposits (Qya)	Low-to-High
Young landslide deposits (Qyls)	Low-to-High
Old alluvial fan deposits (Qof)	High
Old alluvial fan deposits, unit 3 (Qof_3)	High
Old alluvial fan deposits, unit 1 (Qof_1)	High
Old alluvial-valley deposits (Qov)	High
Old landslide deposits (Qols)	High
Very old alluvial fan deposits (Qvof)	High
Very old axial-channel deposits (Qvoa)	High
Sedimentary Rocks of the Norco Area (QTn)	Unknown
Conglomerate of Temescal Area (QTt)	Unknown
Fernando Formation (Tf)	High
Sandstone of Norco Area (Tns)	High
Puente Formation (Tp)	High
Lake Matthews Formation (Tlm)	High
Sycamore Canyon Member (Tpsc)	High
Yorba Member (Tpy)	High
Soquel Member (Tpsq)	High
Topanga Group (Tt)	High
Vaqueros & Sespe formations, undivided (Tvs)	High
Santiago Formation (Tsa)	High
Silverado Formation (Tsi)	High
Vaqueros, Sespe, Santiago, and Silverado formations, undivided (Tvss)	High
Ladd Formation (Kl)	High
Baker Canyon Member (Klbc)	High

Table 3.7-2. Paleontological Sensitivities of Geological Formations in the Water Service Area

Geologic Formation	Sensitivity[1]
Williams and Ladd formations, undifferentiated (Kwl)	High
Monzogranite (Kcg)	None
Granodiorite and quartz latite (Kcgq)	None
Gabbro (Kgb)	None
Diorite (Kd)	None
Granite (Kgu)	None
Heterogeneous granite (Khg)	None
La Sierra Tonalite (Klst)	None
Mount Hole Granodiorite (Kmhg)	None
Micropegmatite granite (Kmp)	None
Estelle Mountain Volcanics (Kvem)	None[2]
Santiago Peak Volcanics (Kvsp)	None[3]
Santiago Peak Volcanics, intrusive rocks (Kvspi)	None
Bedford Canyon Formation (Jbc)	Low
Metamorphic Rocks (Trmu)	None

Source: SWCA 2018.

Nortes:

[1] Following Society of Vertebrate Paleontology

[2] Sedimentary layers, if present, have unknown sensitivity.

[3] Sedimentary layers, if present, have high sensitivity.

3.7.2 Regulatory Setting

This section describes the federal, state, and local regulatory framework adopted to protect geology, soils, and paleontological resources.

3.7.2.1 Federal

Paleontological Resources Preservation, Omnibus Public Lands Act, Public Law 111-011, Title VI, Subtitle D

This legislation directs the Secretaries of the U.S. Department of the Interior and U.S. Department of Agriculture to manage and protect paleontological resources on federal land using "scientific principles and expertise." To formulate a consistent paleontological resources management framework, the act incorporates most of the recommendations from the Secretary of the Interior's report Assessment of Fossil Management on Federal and Indian Lands (USDI 2000). In passing the act, Congress officially recognized the scientific importance of paleontological resources on some federal lands by declaring that fossils from these lands are federal property that must be preserved and protected. The act codifies existing policies of the Bureau of Land Management,

National Park Service, U.S. Forest Service, Bureau of Reclamation, and U.S. Fish and Wildlife Service and provides the following:

- Uniform criminal and civil penalties for illegal sale and transport and theft and vandalism of fossils from federal lands
- Uniform minimum requirements for paleontological resource-use permit issuance (terms, conditions, and qualifications of applicants)
- Uniform definitions for "paleontological resources" and "casual collecting"
- Uniform requirements for curation of federal fossils in approved repositories

Antiquities Act

The Antiquities Act of 1906 (16 USC 431–433) states, in part, the following:

> That any person who shall appropriate, excavate, injure or destroy any historic or prehistoric ruin or monument, or any object of antiquity, situated on lands owned or controlled by the Government of the United States, without the permission of the Secretary of the Department of the Government having jurisdiction over the lands on which said antiquities are situated, shall upon conviction, be fined in a sum of not more than five hundred dollars or be imprisoned for a period of not more than ninety days, or shall suffer both fine and imprisonment, in the discretion of the court.

Although there is no specific mention of natural or paleontological resources in the act itself or in the act's uniform rules and regulations (43 CFR 3), the term "objects of antiquity" has been interpreted to include fossils by the National Park Service, Bureau of Land Management, U.S. Forest Service, and other federal agencies. Permits to collect fossils on lands administered by federal agencies are authorized under this act. However, due to the large gray areas left open to interpretation due to the imprecision of the wording, agencies are hesitant to interpret this act as governing paleontological resources.

3.7.2.2 State

California Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act was signed into state law in 1972. Its primary purpose is to mitigate the hazard of fault rupture by prohibiting the location of structures for human occupancy across the trace of an active fault. The act delineates "Earthquake Fault Zones" along faults that are "sufficiently active" and "well defined." The act also requires that cities and counties withhold development permits for sites within an earthquake fault zone until geologic investigations demonstrate that the sites are not threatened by surface displacement from future faulting. Pursuant to this act, structures for human occupancy are not allowed within 50 feet of the trace of an active fault.

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 also known as Title 24, Part 2, of the California Code of Regulations. The most recent building standard adopted by the legislature and used throughout the state is the 2019 version of the CBC (effective January 1, 2020), often with local, more restrictive amendments that are based on local geographic, topographic, or climatic conditions. These codes provide 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 on site, and the strength of ground shaking with specified probability of occurring at a site.

Seismic Hazard Mapping Act

The Seismic Hazard Mapping Act was adopted by the state in 1990 to protect the public from the effects of non-surface 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 California Geological Survey prepares and provides local governments with seismic hazard zone maps that identify areas susceptible to amplified shaking, liquefaction, earthquake-induced landslides, and other ground failures. The Seismic Hazard Mapping Act requires responsible agencies to only approve projects within seismic hazard zones following a site-specific investigation to determine if the hazard is present, and if so, the inclusion of appropriate mitigation. In addition, the Seismic Hazard Mapping Act requires real estate sellers and agents at the time of sale to disclose whether a property is in one of the designated seismic hazard zones.

Natural Hazards Disclosure Act

The Natural Hazards Disclosure Act requires that sellers of real property and their agents provide prospective buyers with a Natural Hazard Disclosure Statement when the property being sold lies within one or more state-mapped hazard areas, including a seismic hazard zone. California law also requires that, when houses built before 1960 are sold, the seller must give the buyer a completed earthquake hazards disclosure report and a booklet The Homeowners Guide to Earthquake Safety. This publication was written and adopted by the California Seismic Safety Commission.

Soils Investigation Requirements

Requirements for soils investigations for subdivisions requiring tentative and final maps, and for other specified types of structures, are in California Health and Safety Code Sections 17953–

17955, and in Section 1802 of the CBC. 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.

California Public Resources Code

Paleontological sites are protected under a wide variety of state policies and regulations in the California Public Resources Code. In addition, paleontological resources are recognized as nonrenewable resources and receive protection under the California Public Resources Code and the California Environmental Quality Act (CEQA). California Public Resources Code, Division 5, Chapter 1.7, Section 5097.5, and Division 20, Chapter 3, Section 30244, states the following:

> No person shall knowingly and willfully excavate upon, or remove, destroy, injure or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.

This statute prohibits the removal, without permission, of any paleontological site or feature from lands under the jurisdiction of the state or any city, county, district, authority, or public corporation, or any agency thereof. As a result, local agencies are required to comply with California Public Resources Code, Section 5097.5, for their own activities, including construction and maintenance, as well as for permit actions (e.g., encroachment permits) undertaken by others. California Public Resources Code, Section 5097.5, also establishes the removal of paleontological resources as a misdemeanor and requires reasonable mitigation of adverse impacts to paleontological resources from developments on public (state, county, city, and district) lands.

3.7.2.3 Local

City of Corona 2020–2040 General Plan

The following goals and policies in the City of Corona 2020–2040 General Plan are relevant to geology, soils, and paleontological impacts (City of Corona 2020).

Public Services Element

Goal PS-1. Adequate protection of the health, safety, and welfare of the public, property and economic investments, and community social and service functions from seismic and geologic events.

Policy PS-1.1. Maintain accurate records, information, and mapping of seismic and geologic activity and hazards in Corona and the region from the California Geologic Survey; update records with information from local geotechnical studies.

Policy PS-1.2. In areas subject to seismic and geologic hazards, require development proposals to include a geotechnical hazard analysis and specific mitigations to reduce risks to acceptable levels as a condition of approval.

Policy PS-1.4. Require adherence to the latest California Building Codes and associated regulations in the City's Municipal Code; update local codes and development requirements periodically for the latest best practices.

Policy PS-1.5. Locate new or existing buildings in the Elsinore earthquake fault zone or in other areas at risk from liquefaction, landslides, or other seismic and geologic hazards in the community and take corrective actions to minimize the risk of loss.

Policy PS-1.7. Require geotechnical analysis for projects proposed in areas subject to corrosive soils. Where found, require appropriate cathodic protections and other best practices to minimize damage to buildings, structures, and infrastructure.

Historical Resources Element

Goal HR-3. Recognize the importance of archeological and paleontological resources and ensure the identification and protection of those resources within the City of Corona.

Policy HR-3.6. Any project that involves earth-disturbing activities in soil or rock units known or reasonably suspected to be fossil-bearing shall require monitoring by a qualified paleontologist retained by the project applicant for the duration of excavation or trenching.

Policy HR-3.7. Paleontological resources found prior to or during construction shall be evaluated by a qualified paleontologist, and appropriate mitigation measures applied, pursuant to § 21083.2 of CEQA, before the resumption of development activities. Any measures applied shall include the preparation of a report meeting professional standards, which shall be submitted to the Riverside County Museum of Natural History.

City of Corona Municipal Code

The City has requirements in the Corona Municipal Code, Title 15, Buildings and Construction, for the preparation and submittal of soil engineering reports and seismicity reports for new development and engineering geology reports for all new hillside development.

3.7.3 Thresholds of Significance

A significant impact related to geology, soils and paleontological resources would occur if the project would (CEQA Guidelines, Section 15000 et seq.):

1. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
    a. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault (Refer to Division of Mines and Geology Special Publication 42.)
    b. Strong seismic ground shaking
    c. Seismic-related ground failure, including liquefaction
    d. Landslides
2. Result in substantial soil erosion or the loss of topsoil
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
4. Be located on expansive soil, as defined in Table 18-1B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property
5. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water
6. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature

3.7.4 Environmental Analysis

3.7.4.1 Threshold 1: Seismic Hazards

Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

a) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42.)

b) Strong seismic ground shaking?

c) Seismic-related ground failure, including liquefaction?

d) Landslides?

Impact Analysis

The project would involve the construction of distribution pipelines, storage tanks, and pump stations. The details of each component are discussed in Chapter 2, Project Description. The potential seismic hazards and their potential impacts on and as a result of the project are described below.

Fault Rupture

There are known active faults or mapped Alquist-Priolo Earthquake Fault Zones traversing the water service area (Figure 3.7-1). Therefore, surface rupture as a result of seismic activity is likely. Mandatory compliance with existing regulations including the CBC, including the preparation and submittal of seismicity reports with Grading Plans, would ensure the project would cause potential substantial adverse effects, including the risk of loss, injury, or death.

Ground Shaking

Ground shaking is responsible for the majority of damage from earthquakes and can damage or destroy buildings, structures, pipelines, and infrastructure. The intensity of shaking depends on the type of fault, distance to the epicenter, magnitude of the earthquake, and subsurface geology. The Whittier-Elsinore Fault Zone is potentially capable of producing the most intense ground accelerations in the City because it is closest. The greatest severity of ground shaking would occur in central Corona, Temescal Valley, and northern Corona where distribution pipelines identified in the 2018 RWMP would be located. In Southern California, there is no way to avoid earthquake hazards. However, compliance with the CBC, including specific provisions for seismic design, would mitigate and minimize the effects of earthquakes. The CBC has been accepted as the basic design standard in the City and the County of Riverside. The design of structures in accordance with the CBC is expected to minimize the effects of ground shaking to the greatest degree feasible.

Seismic-Related Ground Failure and Liquefaction

Research and historical data indicate that loose, granular materials at depths of less than 50 feet with silt and clay contents of less than 30 percent saturated by relatively shallow groundwater table are most susceptible to liquefaction. These geological conditions are typical in parts of Southern California, including the City of Corona, and in valley regions and alluvial floodplains. Much of the northern portion of the City is susceptible to liquefaction, which could be exacerbated by a seismic event. Implementation of the project, including construction of distribution of pipelines, aboveground water storage tanks, and pump stations, would occur in an area subject to potential damage as a result of seismically induced ground shaking, including liquefaction.

Landslides

Marginally stable slopes (including existing landslides) may be subject to landslides caused by earthquakes. The landslide hazard depends on many factors, including existing slope stability,

shaking potential, and presence of existing landslides. The terrain of the City is varied, ranging from relatively flat to hilly. Project locations would be consistent with the City of Corona 2020–2040 General Plan and would not extend into areas that are prone to potential landslide activity. In addition, the project consists of facilities that are not intended for human habitation; therefore, the project would not expose people or critical structures to adverse effects resulting from landslides.

Level of Significance Before Mitigation

Implementation of the project would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Seismic-related ground failure, including liquefaction. Impacts would be potentially significant. Implementation of the project would not directly or indirectly cause potential substantial adverse effects including risk of loss, injury, or death involving the rupture of a known earthquake fault as delineated on the most recent Alquist-Priolo Earthquake Fault Zone Map, strong seismic ground shaking or seismic-related ground failure including landslide. Impacts would be less that significant.

Mitigation Measures

Implementation of Mitigation Measure GEO-1 would require the completion of site-specific geotechnical engineering studies to identify potential constraints and recommend methods to construct, install and design water storage tanks, booster pump stations, flow controls, and distribution pipelines to minimize seismic risks.

GEO-1: **Site-Specific Soil and Geotechnical Study.** The City of Corona shall prepare a site-specific soil and geotechnical engineering study before final design of individual projects under the 2018 Reclaimed Water Master Plan that would involve ground disturbance, including grading and excavation. Each study shall be performed by a licensed professional, including but not limited to a geologist, certified soil scientist, certified agronomist, registered agricultural engineer, registered civil or structural engineer, and/or certified professional erosion and sediment control specialist with expertise in geotechnical engineering issues, who is registered and/or certified in the State of California, to determine site-specific impacts and to recommend site-specific mitigations. Feasible recommendations addressing potential seismic hazards and soil constraints shall be implemented.

Level of Significance After Mitigation

Implementation of Mitigation Measure GEO-1 would reduce impacts to a less than significant level.

3.7.4.2 Threshold 2: Soil Erosion or Loss of Topsoil

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

Impact Analysis

Erosion, or loss of topsoil can occur as a result of and can be accelerated by construction activities. Construction of the project would involve trenching, grading, and backfilling. The projects identified in the 2018 RWMP would largely be constructed within urban areas, and most pipelines would be placed within existing rights-of-way; however, construction would require land clearing, grading, trenching earth moving, and other substantial earthwork, which would expose areas of soil that are not presently exposed resulting soil erosion or the loss of top soil.

Soils in the water service area are particularly prone to erosion during the grading phase of construction, especially during heavy rains. Reduction of the erosion potential during construction activities can be accomplished via compliance with the Construction General Permit and associated local National Pollutant Discharge Elimination System regulations to ensure that the potential for soil erosion is minimized through the preparation of a stormwater pollution prevention plan (SWPPP). The SWPPP will specify best management practices for temporary erosion controls. Standard erosion control measures would be implemented as part of the SWPPP for each project to minimize the risk of erosion or sedimentation during construction. The SWPPP must include an erosion control plan that prescribes measures such as phasing grading, limiting areas of disturbance, designating restricted-entry zones, diverting runoff from disturbed areas, protective measures for sensitive areas, outlet protection, and provisions for revegetation or mulching. The erosion control plan (required under Section 15.36.060, Erosion Control Plan, of the Corona Municipal Code) would also include treatment measures to trap sediment, including inlet protection, straw bale barriers, straw mulching, straw wattles, silt fencing, check dams, terracing, and siltation or sediment ponds.

Level of Significance Before Mitigation

Implementation of the project would not result in substantial soil erosion or loss of topsoil, and impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Because no mitigation is required, impacts would remain less than significant.

3.7.4.3 Threshold 3: Geological Stability

Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

Impact Analysis

Impacts to seismic-related geologic hazards including landslides, liquefaction, and lateral spreading are discussed in Section 3.7.4.1. The potential for slope instability, lateral spreading, and differential settlement not related to seismic activity are discussed below.

There is a potential for projects identified in the 2018 RWMP to be on a geological unit or soil that would be unstable or that would become unstable and would potentially result in on- off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. The potential to occur would be site specific for each project identified in the 2018 RWMP.

Level of Significance Before Mitigation

Implementation of the project would be 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. The impact is potentially significant impact.

Mitigation Measures

Mitigation Measure GEO-1 would require the completion of site-specific geotechnical engineering studies, which would identify potential constraints and recommend methods to construct, install, and design structures, including foundations, tanks, and pipelines to minimize differential settlement and the slipping or sliding of earth; therefore, minimizing impacts from unstable geologic or soil conditions. Mitigation Measure GEO-1 also requires a soils engineering report that includes an evaluation of the nature, distribution, and physical and chemical properties of existing soils, such as the presence of unstable soils.

Level of Significance After Mitigation

With implementation of Mitigation Measure GEO-1, impacts would be reduced to a less than significant level.

3.7.4.4 Threshold 4: Expansive Soils

Would the project be located on expansive soil, as defined in Table 18-1B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

Impacts Analysis

Expansion and contraction of soils in response to changes in moisture content could lead to differential and cyclical movements that could cause damage or distress to structures and equipment. Thus, they are less suitable for development than non-expansive soils. The water service area is known to have a low to moderate potential for expansive soils. During construction activities, individual projects identified in the 2018 RWMP may encounter expansive soil materials resulting in a direct or indirect risk to life and property.

Level of Significant Before Mitigation

Projects identified in the 2018 RWMP would have the potential to be located on expansive soil, as defined in Table 18-1B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property. Impacts would be potentially significant.

Mitigation Measures

Mitigation Measure GEO-1 would require the completion of a site-specific soils and geotechnical engineering report for projects identified in the 2018 RWMP. Recommendations in the report would be implemented during project construction activities to minimize the risk associated with projects proposed within areas containing expansive soils.

Level of Significance After Mitigation

With implementation of Mitigation Measure GEO-1, impacts would be reduced to a less than significant level.

3.7.4.5 Threshold 5: Septic Tanks

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

Impact Analysis

The project proposes construction of reclaimed water storage tanks, pump stations, and transmission pipelines. The project would not require wastewater treatment. Alternative wastewater disposal systems and septic tanks are not a component of the project.

Level of Significance Before Mitigation

Implementation of the project does not propose the use of septic tanks or alternative wastewater disposal systems. No impact would occur.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Because no mitigation is required, no impact would occur.

3.7.4.6 Threshold 6: Paleontological Resources

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

Impact Analysis

Paleontological resources are recognized as nonrenewable and therefore receive protection under the California Public Resources Code and CEQA. There are multiple known fossil locations in the water service area. In addition, the water service area contains underlying formations with varying levels of paleontological sensitivity as shown in Table 3.7-2 and Figure 3.7-3. Implementation of the project would include the construction of distribution pipelines, storage tanks, and pump stations involving ground disturbance, including excavation, grading, and backfilling, in areas of known and unknown paleontological sensitivity. Construction activities extending to a depth of 10 feet or greater in areas characterized with a high sensitivity for paleontological resources would have the potential to directly destroy unique paleontological resources.

Level of Significance Before Mitigation

Implementation of the project could potentially destroy unique paleontological resources, which would result in a potentially significant impact.

Mitigation Measures

Implementation of the following mitigation measure would reduce potentially significant impacts to paleontological resources.

GEO-2: **Paleontological Monitoring.** Paleontological monitoring during excavation, grading or trenching shall be required for all projects identified in the 2018 Reclaimed Water Master Plan that would excavate to a depth of 10 feet or more in areas identified as having a high paleontological sensitivity. Before the approval of project-specific construction documents for each project, the City Engineer shall retain a qualified professional paleontologist to observe all earth-disturbing activities in areas greater than 10 feet in

depth. Fossil materials recovered during paleontological monitoring shall be cleaned, identified, cataloged, and analyzed in accordance with standard professional practices. The results of the fieldwork and laboratory analysis shall be submitted in a technical report and the entire collection transferred to an approved facility. If no resources are found during the monitoring effort, a monitoring summary shall be submitted to the City Engineer within 4 weeks of completion of the monitoring effort.

Level of Significance After Mitigation

Implementation of Mitigation Measure GEO-2 would reduce impacts to a less than significant level.

3.7.5 Cumulative Impacts and Mitigation

3.7.5.1 Cumulative Threshold 1: Seismic Hazards

The geographic context for the analysis of impacts regarding seismic-related hazards is generally site-specific, rather than cumulative in nature because each development site has unique geologic considerations that would be affected differently during a seismic event. Although the proposed project and related cumulative projects could have potentially significant seismic-related hazard impacts requiring mitigation, these projects are geographically independent to the extent that a seismic event at one site would not necessarily result in the same effects at another site. Additionally, as discussed in Section 3.7.4.1, impacts related to seismic hazards would be reduced to a less than significant level with the implementation of Mitigation Measure GEO-1. Other cumulative projects would be required to implement site-specific recommendations to reduce risk from unstable soils, similar to the proposed project. Similarly, cumulative projects would be required to comply with the CBC, which provides minimum standards to protect property and public safety to mitigate the effects of seismic shaking. Therefore, cumulative geologic impacts associated with seismic-related hazards would not be significant. The project's contribution would not be cumulatively considerable.

3.7.5.2 Cumulative Threshold 2: Soil Erosion and Loss of Topsoil

The geographic context for the analysis of impacts regarding soil erosion or topsoil loss would be site-specific and the immediate surrounding area. Future growth and redevelopment in the water service area would result in an increase in grading and clearing of vegetation, which has the potential to contribute to a cumulative increase in erosion or topsoil loss. However, development of cumulative projects are subject to state and local runoff and erosion prevention requirements, including Construction General Permit and associated local National Pollutant Discharge Elimination System regulations to ensure that the potential for soil erosion is minimized, which requires through the preparation of a SWPPP. The project would comply with applicable provisions of the general construction permit and best management practices. These measures are designed to reduce or eliminate potential erosion impacts and are implemented as conditions of

approval for development projects and are subject to continuing enforcement. Therefore, a significant cumulative impact would not occur. The project's contribution would not be cumulatively considerable.

3.7.5.3 Cumulative Threshold 3: Geological Stability

The geographic context for the analysis of impacts resulting from unstable soils is generally site-specific rather than cumulative in nature. Potential impacts related to the proposed project are not additive with other projects and are therefore not cumulatively significant. As discussed in Section 3.7.4.3, impacts related to unstable soils would be reduced to a less than significant level with the implementation of Mitigation Measure GEO-1. Other cumulative projects would be required to implement site-specific recommendations to reduce risk from unstable soils, similar to the proposed project. Although the proposed project and related cumulative projects would have potentially significant geological impacts requiring mitigation, these projects are geographically removed to the extent that a hazardous geologic event at one site would not necessarily occur at another site. Therefore, a significant cumulative impact would not occur. The project's contribution would not be cumulatively considerable.

3.7.5.4 Cumulative Threshold 4: Expansive Soils

The geographic context for the analysis of impacts resulting from expansive soils is generally site-specific, rather than cumulative in nature. Potential project impacts are not additive with other cumulative projects and are therefore not cumulatively significant. As discussed in Section 3.7.4.3, impacts related to unstable soils would be reduced to a less than significant level with the implementation of Mitigation Measure GEO-1. Other cumulative projects would be required to implement site-specific recommendations to reduce risk from expansive soils, similar to the proposed project. Although the proposed project and related cumulative projects would have potentially significant geological impacts requiring mitigation, these projects are geographically removed to the extent that a hazardous geologic event at one site would not necessarily occur at another site. Therefore, a significant cumulative impact would not occur. The project's contribution would not be cumulatively considerable.

3.7.5.5 Cumulative Threshold 5: Paleontological Resources

The geographic context for the analysis of cumulative impacts to paleontological resources is the City's water service area. There are multiple known fossil localities within the water service area. Cumulative projects would have the potential to disturb these geologic formations and the fossils that they contain. However, previous development has also led to the discovery of many fossil sites that have been documented and which have been added to the natural history records for the region. Future cumulative development in the region could impact unrecorded paleontological resources, which would result in a significant cumulative impact.

The continued development of projects has the potential to disturb sensitive paleontological units; however, monitoring for paleontological resources is now typically required for projects that involve significant earthwork in geologic units with high paleontological sensitivities. Because the project would require implementation of a paleontological monitoring program as described in Mitigation Measure GEO-2, additional discoveries may be added to the regional natural history record as a result of project implementation. This mitigation measure would prevent the harm or destruction of potentially highly valuable paleontological resources and allow these resources to be properly documented and preserved. Therefore, in the project's impact would not be cumulatively considerable.

3.7.6 Conclusion

Implementation of the project would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction. Impacts would be potentially significant.

Implementation of the project would not directly or indirectly cause potential substantial adverse effects including risk of loss, injury, or death involving the rupture of a known earthquake fault as delineated on the most recent Alquist-Priolo Earthquake Fault Zone Map, strong seismic ground shaking or seismic-related ground failure including landslide. Impacts would be less that significant. Implementation of Mitigation Measure GEO-1 would require the completion of site-specific geotechnical engineering studies that would identify potential constraints and recommend methods to construct, install, and design structures, including foundations, tanks, and pipelines to minimize seismic-related risks. Therefore, with the incorporation of Mitigation Measure GEO-1, direct and cumulative impacts would be reduced to a less than significant level.

Soils in the water service area are particularly prone to erosion during the grading phase of construction, especially during heavy rains. Reduction of the erosion potential during construction activities would be accomplished through implementation of a SWPPP, which specifies best management practices for temporary erosion control. Standard erosion control measures would be implemented as part of the SWPPP for any proposed project to minimize the risk of erosion or sedimentation during construction and impacts would be less than significant. Direct and cumulative impacts would be less than significant.

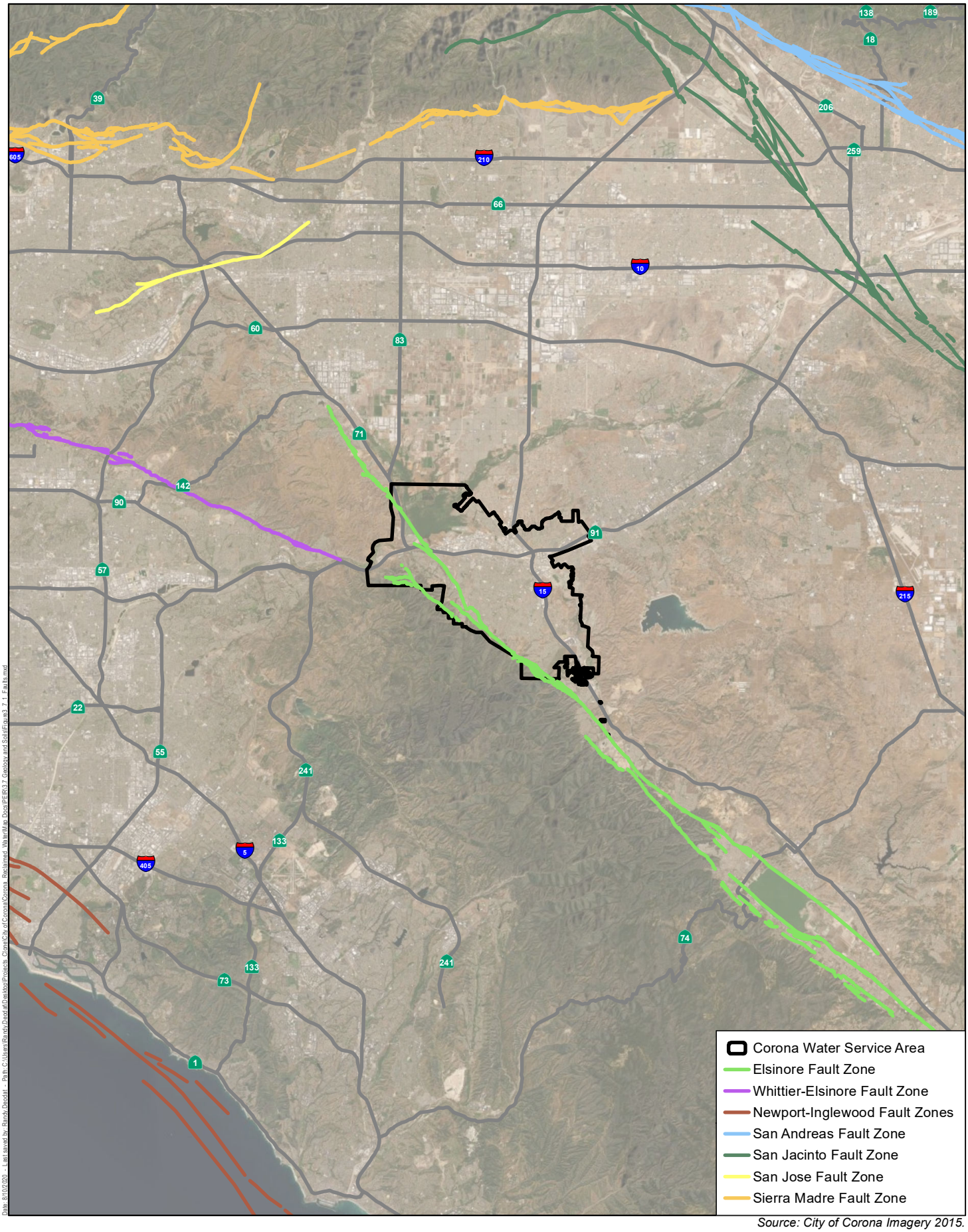
Implementation of the project would be potentially located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse would result in a significant impact. Implementation of Mitigation Measure GEO-1 would require the completion of site-specific geotechnical engineering studies, which would identify potential constraints and recommend methods to construct, install and design structures, including foundations, tanks and pipelines to minimize differential settlement and the slipping or sliding of earth; therefore,

minimizing impacts from unstable geologic or soil conditions. Mitigation Measure GEO-1 also requires a soils engineering report that includes an evaluation of the nature, distribution and physical and chemical properties of existing soils, such as the presence of unstable soils. Therefore, with the incorporation of Mitigation Measure GEO-1, direct and cumulative impacts would be reduced to a less than significant level.

Implementation of the project would be on expansive soil, as defined in Table 18-1B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property. Implementation of Mitigation Measure GEO-1 would require the completion of a site-specific soils and geotechnical engineering report. Recommendations in the report would be implemented during project construction activities to minimize the risk associated with expansive soils. Therefore, with the incorporation of Mitigation Measure GEO-1, direct and cumulative impacts would be reduced to a less than significant level.

Implementation of the project would include the construction of distribution pipelines, storage tanks, and pump stations involving ground disturbance, including excavation, grading, and backfilling, in areas of known and unknown paleontological sensitivity and would have the potential to directly destroy unique paleontological resources. Impacts would be potentially significant. Implementation of Mitigation Measures GEO-2 would require paleontological monitoring during construction excavation, grading, or trenching activities for the projects identified in the 2018 RWMP. Therefore, with the incorporation of Mitigation Measure GEO-2, direct and cumulative impacts would be less than significant.

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Source: City of Corona Imagery 2015.

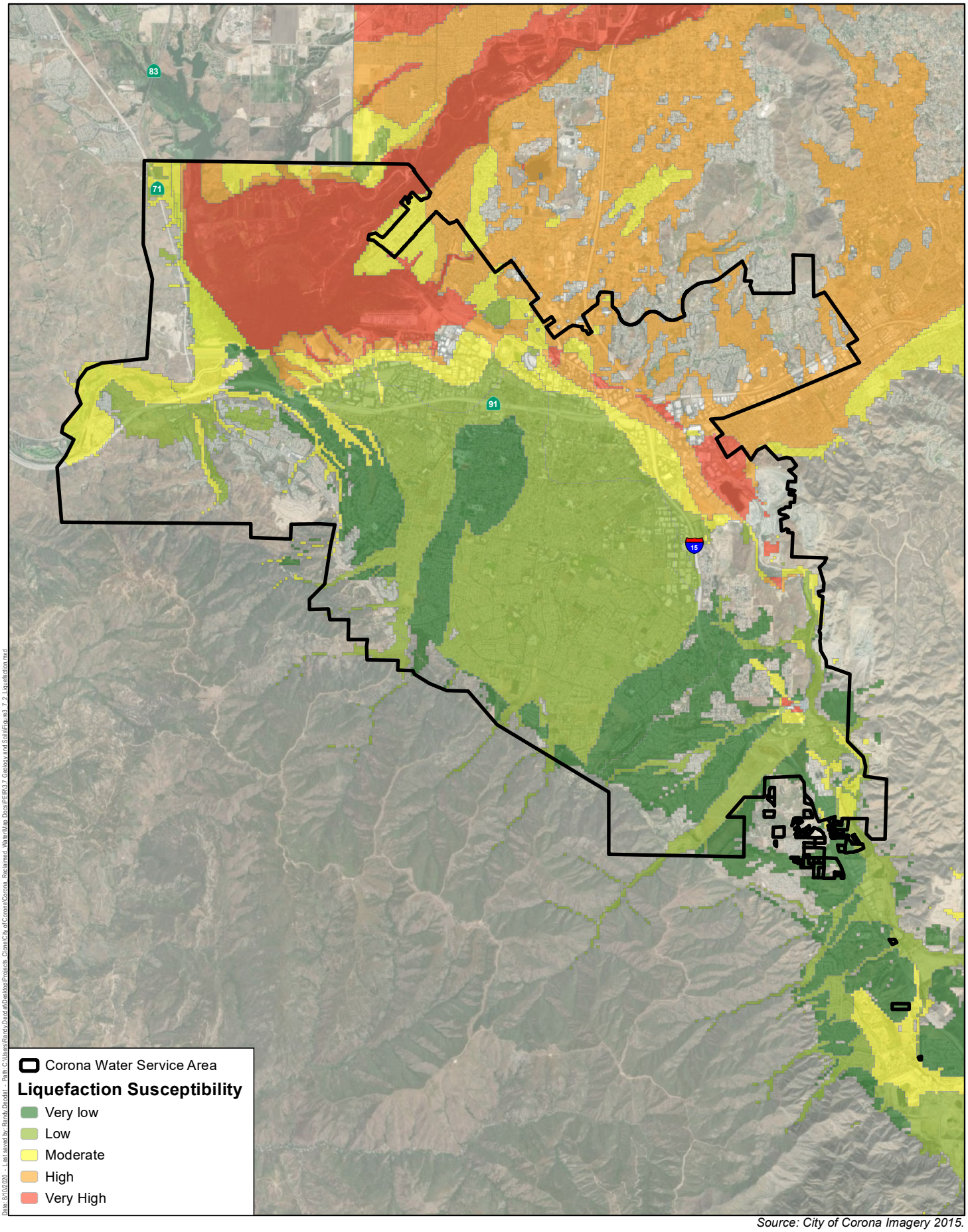
Harris & Associates

Figure 3.7-1

Regional Fault Locations

City of Corona 2018 Reclaimed Water Master Plan

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Source: City of Corona Imagery 2015.

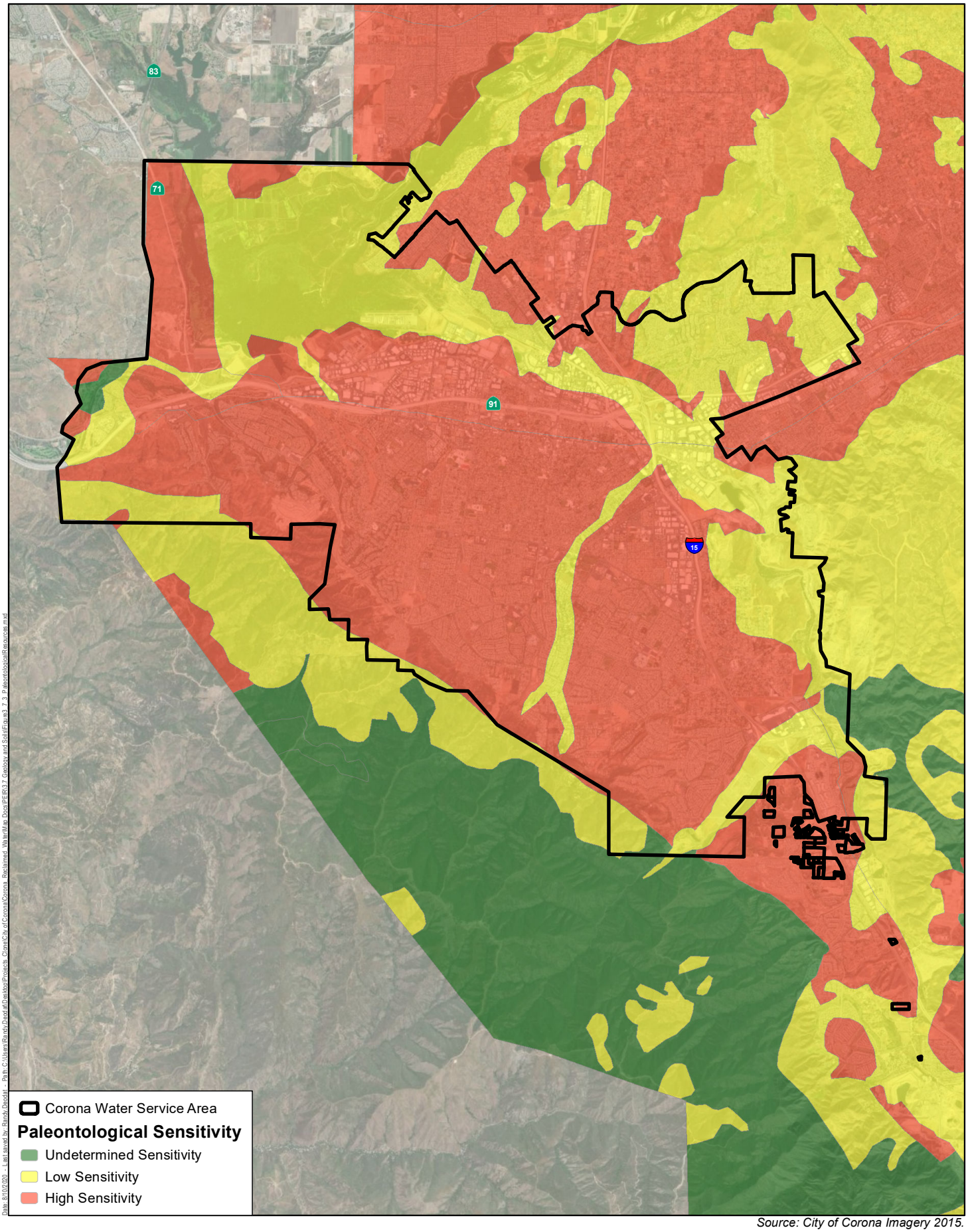
Harris & Associates

Figure 3.7-2

Liquefaction Hazards

City of Corona 2018 Reclaimed Water Master Plan

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Source: City of Corona Imagery 2015.

Harris & Associates

Figure 3.7-3

Sensitive Paleontological Resources

City of Corona 2018 Reclaimed Water Master Plan

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3.8 Greenhouse Gas Emissions

This section describes existing global climate change conditions, existing rules and regulations as adopted by the state and the City of Corona 2020–2040 General Plan (2020) and City of Corona's (City's) 2019 Climate Action Plan (CAP) (2019) to reduce greenhouse gas (GHG) emissions, an inventory of the approximate GHG emissions that would result from implementation of the 2018 Reclaimed Water Master Plan (project or 2018 RWMP), and an analysis of the significance of the impact of these GHG emissions. The analysis in this section is based in part on the following information: City of Corona Reclaimed Water Master Plan GHG Technical Memorandum prepared by Harris & Associates (2020) for the project, City's 2019 CAP Update (2019), and South Coast Air Quality Management District (SCAQMD) Interim California Environmental Quality Act (CEQA) GHG Significance Threshold Guidance Document (2008).

3.8.1 Environmental Setting

Global climate change refers to changes in average climatic conditions on Earth, including changes in temperature, wind patterns, precipitation, and storms. Global warming, a related concept, is the observed increase in average temperature of Earth's surface and atmosphere. One identified cause of global warming is an increase of GHGs in the atmosphere.

Earth's natural warming process is known as the "greenhouse effect." It is called the greenhouse effect because Earth and the surrounding atmosphere are similar to a greenhouse with glass panes in that the glass allows solar radiation (sunlight) into Earth's atmosphere but prevents radiative heat from escaping, thus warming Earth's atmosphere. Some levels of GHGs keep the average surface temperature of Earth hospitable; however, excessive concentrations of anthropogenic GHGs in the atmosphere can result in increased global mean temperatures with associated adverse climatic and ecological impacts.

A GHG is any gas that absorbs infrared radiation and traps heat in the atmosphere. GHGs are produced from natural processes and human activities. The accumulation of GHGs in the atmosphere influences the long-term atmospheric temperatures and contributes to global climate change. In California, GHGs are defined to include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6), plus chlorofluorocarbons and other chlorine- or bromine-containing gases. HFCs, PFCs, and SF_6 are synthetic, powerful GHGs that are emitted from a variety of industrial processes and the production of chlorodifluoromethane. Construction or operation of the proposed project would not include any industrial processes, and chlorodifluoromethane has been mostly phased out of use in the United States, with the exception of feedstock production (USEPA 2020); therefore, these GHGs are not discussed further in this Program Environmental Impact Report. CO_2 accounts for

the largest amount of GHG emissions, and collectively CO_2, CH_4, and N_2O amount to 80 percent of the total radiative forcing from well-mixed GHGs (CARB 2014).

For each GHG, a global warming potential has been calculated to reflect how long emissions remain in the atmosphere and how strongly it absorbs energy on a per-kilogram basis relative to CO_2. For example, 1 pound of CH_4 has 25 times more heat-capturing potential than 1 pound of CO_2. To simplify reporting and analysis, GHG emissions are typically reported in metric tons of CO_2 equivalent ($MTCO_2e$) units. Global warming potential is a metric that indicates the relative climate forcing of a kilogram of emissions when averaged over the period of interest. Table 3.8-1 identifies the CO_2 equivalent and atmospheric lifetimes of basic GHGs.

Table 3.8-1. Global Warming Potential for Select Greenhouse Gases

Pollutant	Atmospheric Lifetime (years)	Global Warming Potential (100-year)[1]
CH_4	12	28
CO_2	~100[a]	1
N_2O	121	265

Source: CAPCOA 2017. Consistent with CalEEMod, version 2016.3.2.

Notes: CH_4 = methane; CO_2 = carbon dioxide; N_2O = nitrous oxide

[1] The warming effects over a 100-year period relative to other GHGs.

The following discussion summarizes the characteristics of six primary GHGs:

- **CO_2.** In the atmosphere, carbon generally exists in its oxidized form as CO_2. Natural sources of CO_2 include the respiration (breathing) of humans, animals, and plants; volcanic outgassing; decomposition of organic matter; and evaporation from the oceans. Human-caused sources of CO_2 include the combustion of fossil fuels and wood, waste incineration, mineral production, and deforestation. Earth maintains a natural carbon balance, and when concentrations of CO_2 are upset, the system gradually returns to its natural state through natural processes. Natural changes to the carbon cycle work slowly, especially compared to the rapid rate at which humans are adding CO_2 to the atmosphere. Natural removal processes, such as photosynthesis by land- and ocean-dwelling plant species, cannot keep pace with this extra input of human-made CO_2, and consequently, the gas is building up in the atmosphere. The concentration of CO_2 in the atmosphere has risen approximately 30 percent since the late 1800s.

  In 2002, CO_2 emissions from fossil fuel combustion accounted for approximately 98 percent of human-made CO_2 emissions and approximately 84 percent of California's overall GHG emissions (in CO_2e). The transportation sector accounted for California's largest portion of CO_2 emissions, with gasoline consumption making up the greatest portion of these emissions. Electricity generation was California's second-largest category of GHG emissions.
- **CH_4.** CH_4 is produced when organic matter decomposes in environments lacking sufficient oxygen. Natural sources include wetlands, termites, and oceans.

Anthropogenic sources include rice cultivation, livestock, landfills and waste treatment, biomass burning, and fossil fuel combustion (burning of coal, oil, and natural gas). Decomposition occurring in landfills accounts for the majority of human-generated CH_4 emissions in California, followed by enteric fermentation (emissions from the digestive processes of livestock). Agricultural processes such as manure management and rice cultivation are also significant sources of human-made CH_4 in California. CH_4 accounted for approximately 8 percent of gross climate change emissions (in CO_2e) in California in 2012. It is estimated that over 60 percent of global CH_4 emissions are associated with human-related activities. As with CO_2, the major removal process of atmospheric CH_4—a chemical breakdown in the atmosphere—cannot keep pace with source emissions, and CH_4 concentrations in the atmosphere are increasing.

- **N_2O.** N_2O is produced naturally by a wide variety of biological sources, particularly microbial action in soils and water. Tropical soils and oceans account for the majority of natural source emissions. N_2O is a product of the reaction that occurs between nitrogen and oxygen during fuel combustion. Both mobile and stationary combustion emit N_2O, and the quantity emitted varies according to the types of fuel, technology, and pollution control devices used, as well as maintenance and operating practices. Agricultural soil management and fossil fuel combustion are the primary sources of human-generated N_2O emissions in California. N_2O emissions accounted for nearly 7 percent of human-made GHG emissions (in CO_2e) in California in 2002.
- **HFCs, PFCs, and SF_6.** HFCs are primarily used as substitutes for O_3-depleting substances regulated under the Montreal Protocol. PFCs and SF_6 are emitted from various industrial processes, including aluminum smelting, semiconductor manufacturing, electric power transmission and distribution, and magnesium casting. There is no aluminum or magnesium production in California; however, the rapid growth in the semiconductor industry, which is active in California, leads to greater use of PFCs. HFCs, PFCs, and SF_6 accounted for about 3.5 percent of human-made GHG emissions (in CO_2e) in California in 2002.

3.8.2 Regulatory Setting

The following regulations are intended to reduce GHG emissions. This section describes the federal, state, and local regulatory framework adopted for the purposes of reducing the City's contribution to global climate change.

3.8.2.1 Federal

The U.S. Environmental Protection Agency is responsible for implementing federal policy to address global climate change. In 2009, the U.S. Environmental Protection Agency issued a final rule for mandatory reporting of GHG emissions, which applies to fossil fuel and industrial gas suppliers, direct GHG emitters, and manufacturers of heavy-duty and off-road vehicles, and

requires annual reporting of emissions. This rule does not regulate the emission of GHGs; it only requires the monitoring and reporting of GHGs for those sources above certain thresholds.

3.8.2.2 State

California has enacted a variety of legislation relating to climate change, much of which has set aggressive goals for GHG emissions reductions throughout the state.

Assembly Bill 32

In September 2006, Governor Schwarzenegger signed California's Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32), requiring the California Air Resources Board (CARB) to establish a statewide GHG emissions cap for 2020 based on 1990 emissions and adopt mandatory reporting rules for significant sources of GHG emissions. GHGs as defined under AB 32 include CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6.

Assembly Bill 32 Scoping Plan Supplement and Update

In 2011, CARB developed a supplement to its Climate Change Scoping Plan. The supplement updated the emissions forecast based on current projections as of October 2010 for business-as-usual emissions in 2020. The updated projection included adopted measures and estimated that an additional 16 percent reduction below the estimated business-as-usual levels would be necessary to return to 1990 levels by 2020.

In 2014, CARB published its First Update to the Climate Change Scoping Plan. This update indicated that the state is on target to meet the goal of reducing GHG emissions to 1990 levels by 2020. The First Update tracks progress in achieving the goals of AB 32 and lays out a new set of actions that will progress the state in achieving the 2050 goal of reducing emissions to 80 percent below 1990 levels. While the first Update discussed setting a mid-term target, the plan did not set a quantifiable target toward meeting the 2050 goal. CARB is currently developing a Second Update to the Climate Change Scoping Plan.

Executive Order B-30-15, Senate Bill 32, and Assembly Bill 197

In April 2015, Governor Brown signed Executive Order (EO) B-30-15, which established the goal of reducing GHG emissions to 40 percent below 1990 levels by 2030. The EO directs state agencies with jurisdiction over GHG-emitting sources to implement measures designed to achieve the new interim 2030 goal, as well as the pre-existing, long-term 2050 goal identified in EO S-3-05 to reduce GHG emissions to 80 percent below 1990 levels. The EO directs CARB to update its Climate Change Scoping Plan to address the 2030 goal.

In 2016, the Legislature passed Senate Bill (SB) 32, which codified the 2030 GHG emissions reduction target of 40 percent below 1990 levels. With SB 32, the Legislature passed companion legislation AB

197, which provides additional direction for CARB to develop and update to the Climate Change Scoping Plan. CARB is currently in the process of developing a Second Update to the Climate Change Scoping Plan to reflect the 2030 target set by EO B-30-15 and codified by SB 32.

Executive Order S-03-05

EO S-03-05 establishes the goal of reducing GHG emissions to 2000 levels by 2010, to 1990 levels by 2020, and to 80 percent below 1990 levels by 2050.

Senate Bill 97

SB 97 recognizes that climate change in relation to environmental issues and requires analysis under CEQA. SB 97, approved in August 2007, provides direction to the Governor's Office of Planning and Research to prepare, develop, and transmit to the resources agency guidelines for feasible mitigation of GHG emissions or the effects of GHG emissions by July 1, 2009. The resources agency is required to certify or adopt those guidelines by January 1, 2020.

Senate Bill 375

SB 375, signed into law on October 1, 2008, is intended to enhance CARB's ability to reach AB 32 goals by directing CARB to develop regional GHG emission reduction targets to be achieved within the automobile and light truck sectors for 2020 and 2035. The targets are required to consider the emission reductions associated with vehicle emission standards, the composition of fuels, and other CARB-approved measures to reduce GHG emissions. In September 2010, CARB announced GHG reduction goals for implementation by regional land use and transportation agencies.

3.8.2.3 Local

In June 2020, the City adopted the 2019 CAP Update, which includes an interim goal of reducing GHG emission to 49 percent below 2008 levels by the year 2030 and a longer-term GHG reduction goal of 66 percent below 2008 levels by 2040. The interim and longer-term goals put the City on a path toward the state's long-term goal to reduce emissions 80 percent below 1990 levels by 2050. The 2019 CAP Update establishes goals and policies that encourage energy efficiency, water conservation, alternative transportation, solid waste reduction, and clean energy (City of Corona 2019).

3.8.3 Thresholds of Significance

According to Appendix G of CEQA Guidelines, a significant impact related to GHG emissions would occur if the project would (CEQA Guidelines, Section 15000 et seq.):

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

Regarding Threshold 1, to provide guidance to local agencies on determining significance for GHG emissions in their CEQA documents, the SCAQMD formed a GHG CEQA Significance Threshold Working Group. In December 2008, the working group developed a tiered approach for evaluating GHG emissions for development projects where the SCAQMD is not the lead agency.

A proposed project would be evaluated against the following tiers and a determination would be made as to which tier would be most appropriate for the individual project:

Tier 1 consists of evaluating whether or not the project qualifies for any applicable exemption under CEQA. If the project qualifies for an exemption, no further action is required. The project is not exempt from CEQA; therefore, Tier 1 does not apply.

- **Tier 2** consists of determining whether or not the project is consistent with a GHG Reduction Plan that may be part of a local government plan. The GHG Reduction Plan must, at a minimum, comply with AB 32 GHG reduction goals, include an emissions inventory agreed upon by either CARB or the SCAQMD, have been analyzed under CEQA and have a certified final CEQA document, and have monitoring and enforcement components. If the proposed project is consistent with the qualifying GHG reduction plan, it is not significant for GHG emissions.

  The City's 2019 CAP Update provides a method consistent with the 2012 CAP for determining the significance of GHG emissions from new development in the City but reflects updated emission reduction targets (City of Corona 2019). A project that is consistent with the City's 2019 CAP Update would contribute its fair share to the City's emissions reduction targets and would result in a less than significant impact. Consistency with the 2019 CAP Update is demonstrated through the CAP Screening Tables, which provide a menu of emission reduction options with associated points based on development type. If a project can garnish 100 points from the screening table, the project is considered less than significant. The 2019 CAP Update includes Screening Tables for residential, commercial, industrial, or mixed-use projects. The Screening Tables do not include measures applicable to municipal infrastructure projects as proposed in the 2018 RWMP; therefore, Tier 2 does not apply.
- **Tier 3** includes a screening level threshold of 3,000 $MTCO_2e$ per year that is intended to achieve a regional emissions capture rate of 90 percent. That is, most future projects would be required to implement GHG reduction measures while excluding small projects that would contribute a relatively small fraction of the cumulative statewide GHG emissions. Consistent with the SCAQMD method, construction emissions should be amortized over a 30-year project life and added to operational emissions. The following analysis uses Tier 3. The project would result in a significant GHG emissions impact if annual project operation and amortized construction emissions would exceed the screening level threshold of 3,000 $MTCO_2e$.

3.8.4 Environmental Analysis

3.8.4.1 Threshold 1: Greenhouse Gas Emissions

Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Impact Analysis

Single projects do not generate enough GHG emissions on their own to influence global climate change; therefore, the GHG impact analysis measures the project's contribution to the cumulative environmental impact. Implementation of the project would contribute to global climate change directly through GHG emissions from on-site area sources and vehicle trips generated by the project (construction and maintenance) and indirectly through off-site energy production required for on-site activities, including operation of two additional pump stations and nighttime security lighting.

Project construction and operational GHG emissions are provided separately below and were estimated in the same manner as described in Section 3.3, Air Quality.

Construction

Construction activities associated with the projects identified in the 2018 RWMP would result in short-term GHG emissions from heavy equipment and construction worker vehicles. Construction is anticipated to begin in late 2020. It was assumed that an average of 3 projects would occur in any given year based on the number of projects included in the 2018 RWMP and the time frame until buildout (29 projects in 10 years). The Sampson Pipeline Project was selected from the 2018 RWMP project list to represent the worst-case maximum daily emissions that could occur from any project. The Sampson Pipeline Project is calculated to require the greatest total amount of soil import and export and the most material movement in the shortest amount of time. Therefore, assuming simultaneous construction of three projects with the construction intensity of the Sampson Pipeline Project represents a conservative worst-case scenario. Total GHG emissions associated with construction of the Sampson Pipeline Project would be approximately 411 $MTCO_2e$. Assuming annual construction of three projects of the same intensity as the worst-case Sampson Pipeline Project, maximum annual emissions would be approximately 1,233 $MTCO_2e$. Maximum annual emissions are conservative because less intense construction is anticipated to occur each subsequent year of project implementation, and projects that would be completed in later years are anticipated to benefit from more stringent emissions standards. Less construction-intensive projects and equipment that meets higher emissions standards would generate fewer GHG emissions compared to the Sampson Pipeline Project. Buildout of the projects identified in the 2018 RWMP would take place over 10 years. However, the worst-case annual emissions of 1,233 $MTCO_2e$ are conservatively assumed to be the amortized construction emissions for the project.

Operation

Most of the projects associated with the 2018 RWMP would be passive, new, or upgraded pipelines and storage projects, which would not result in any new sources of GHG emissions. Following construction, operation of the pipelines and water storage facilities would be passive and would not result in an increase in GHG emissions. Landscape equipment would occasionally be used for maintenance. However, once new landscaping is established, only periodic brush clearing, tree trimming, and weed abatement would be required. Due to the limited amount of equipment and time required for maintenance at each facility, landscape equipment use would not substantially increase compared to existing conditions. Night-time safety lighting installed at some project sites would require minimal additional energy consumption. The new pump stations would have daily maintenance checks, and tanks would have weekly maintenance checks; however, maintenance for new and improved facilities would be incorporated into the existing maintenance schedule. Therefore, the net increase in new vehicle trips would be minimal, and the vehicle emissions associated with project implementation would not be significant.

However, GHG emissions would potentially result from a net increase in energy use from the operation of two proposed pump stations. The City currently has six active reclaimed water booster pump stations. Operation of the two new pump stations would be similar to the operation of the existing pump stations. The GHG emissions presented in Table 3.8-2 for operational emissions are calculated based on the 2001 RWMP Program Environmental Impact Report assumption that the electrical consumption for a newly constructed pump station would be approximately 1.7 million kilowatt-hour per year (City of Corona 2001) and the GHG intensity factor for energy consumption from Southern California Edison (Appendix E).

Table 3.8-2. Estimated Annual Operational Emissions from Electrical Consumption

Project	$MTCO_2e$
Amortized Construction Emissions	1,233
Pump Station Emissions	789
Total Calculated Annual Emissions	**2,022**
SCAQMD Threshold	3,000
Significant Impact?	*No*

Source: Appendix E.

Notes: $MTCO_2e$ = metric tons of carbon dioxide equivalent; SCAQMD = South Coast Air Quality Management District
Southern California Edison CO_2e Intensity Factor (2017) = 0.232 MT/MWH.

As shown in Table 3.8-2, GHG emissions from the project's operational electrical consumption and amortized construction would be below the SCAQMD significance threshold. These emissions would not exceed the 3,000 $MTCO_2e$ significance threshold for GHG emissions.

Level of Significance Before Mitigation

The project's combined operational and amortized construction GHG emissions would not exceed the applicable threshold. Impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Because no mitigation measures are required, impacts would remain less than significant.

3.8.4.2 Threshold 2: Consistency with Adopted Greenhouse Gas Reduction Plan

Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Impact Analysis

The plans, policies, or regulations adopted for the purpose of reducing GHG emissions that are applicable to the project include AB 32, SB 32, the City's 2019 CAP Update, and SCAQMD's interim guidance. As explained in Section 3.8.2, Regulatory Setting, the City's CAP Screening Tables are not applicable because they do not include measures applicable to municipal infrastructure projects as proposed in the 2018 RWMP. Therefore, this analysis uses the SCAQMD's interim guidance to determine consistency with the City's GHG reduction policy with respect to construction and operational impacts. As demonstrated above, the GHG emissions associated with the project are below the SCAQMD's interim GHG significance thresholds. Because the project is consistent with the SCAQMD interim guidance, it would not conflict with the statewide reduction targets (SCAQMD 2008).

Furthermore, the project is not expected to impede the City's ability to achieve the goals of its adopted 2019 CAP Update or future updates to the 2019 CAP Update. The purpose of the 2019 Update CAP is to reduce GHG emissions in support of AB 32 and to mitigate the City's contribution to global climate change. Consistency with the SCAQMD interim guidance supports the City's 2019 CAP goals (5.2.C and 5.2.F) to increase residential, commercial, and industrial reclaimed water use (City of Corona 2019).

The City's 2019 CAP Update sets goals in line with SB 32's 2030 GHG emission targets. However, the 2019 Screening Tables are not applicable for the projects included in the 2018 RWMP for similar reasons described above for the 2019 CAP Update. Nonetheless, long-term operational emissions from the proposed projects identified in the 2018 RWMP would be minimal (789 $MTCO_2e$ per year) and would not significantly affect the ability of the City or state to meet the

emissions reduction goals of SB 32. Therefore, the project would not conflict with AB 32, SB 32, or the City's 2019 CAP Update.

Level of Significance Before Mitigation

The project would not conflict with any adopted local, regional, or state GHG reduction plan; therefore, impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Because no mitigation measures are required, impacts would remain less than significant.

3.8.5 Cumulative Impacts and Mitigation

Due to the mixing of GHGs in the atmosphere and their global effect on climate change, it is only possible to analyze the impacts of GHG in a cumulative context. The proposed project emphasizes water conservation and would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing emissions of GHGs. Furthermore, the proposed project would not exceed the SCAQMD's Tier 3 GHG significance thresholds. As a result, the proposed project's climate change impacts regarding GHG emissions would be not be cumulatively considerable.

3.8.6 Conclusion

As demonstrated in this analysis, GHG emissions from operational electrical consumption and amortized construction would be below the SCAQMD Tier 3 GHG significance threshold. These emissions, with nominal emissions from maintenance trips and landscaping, would not exceed the SCAQMD Tier 3 screening level threshold and would not be significant.

Additionally, the project would not conflict with any adopted local, regional, or state GHG reduction plan and would be consistent with the City's 2019 CAP Update goals to increase residential, commercial, and industrial reclaimed water use. Therefore, the climate change impacts associated with the project would be less than significant, and no mitigation is required.

3.9 Hazards and Hazardous Materials

This section discusses the potential impacts to hazards and hazardous materials in the City of Corona's (City's) water service area that may result from the implementation of the 2018 Reclaimed Water Master Plan (project or 2018 RWMP). The analysis in this section is based in part on the following information: City of Corona 2020–2040 General Plan (City of Corona 2020a).

3.9.1 Environmental Setting

This section describes the environmental setting as it relates to hazards and hazardous materials for the water service area. The project proposes reclaimed water facilities in various locations throughout the water service area.

3.9.1.1 Regional Environmental Setting

Hazardous Materials

Hazardous materials include but are not limited to hazardous substances, hazardous wastes, and any material that a business or implementing agency has a reasonable basis for believing would be injurious to public health and safety or harmful to the environment if released into the workplace or the environment.

Hazardous Waste Generators

The City has more than 300 licensed commercial and industrial businesses and uses that generate some form of hazardous materials or waste. The U.S. Environmental Protection Agency regulates generators of hazardous waste based on the amount of waste generated. Large quantity generators produce 1,000 kilograms or more per month or more than one kilogram per month of acutely hazardous waste. Small quantity generators produce between 100 and 1,000 kilograms of hazardous waste per month.

Hazardous Materials Sites

A database search found hazardous materials cleanup sites in the City on four databases—the U.S. Environmental Protection Agency's Superfund Enterprise Management System and Brownfields databases, the Department of Toxic Substances Control's EnviroStor database, and the State Water Resources Control Board's GeoTracker database. Figure 3.9-1a through 3.9-1d depicts the location of the open cases from the identified databases in the water service area.

Hazardous Material Transport

Releases of explosive, highly flammable, or toxic materials can cause fatalities and injuries, necessitate evacuations, destroy property, or result in serious environmental effects if toxic materials seep into surface or groundwater supplies. In the City, hazardous materials and wastes

are transported on the State Route 91 and Interstate 15. Notably, the City has no direct authority to regulate the transport of hazardous materials on federal and state highways or rail lines. When transporting explosives, inhalation hazards or other potentially dangerous materials, and controlled quantities of radioactive materials, state and federal governmental agencies require transporters to include safeguards to reduce the risks of hazardous materials release.

Fire Hazards

The City includes Very High Fire Hazard Severity Zones (VHFHSZ) pursuant to the California Department of Forestry and Fire Protection (CAL FIRE). The VHFHSZs occur along the southwestern City boundary and the western end of the City, in the southeastern corner of the City, in the southeastern area of the City, and in part of the easternmost portion of the water service area east of the community of El Cerrito (CAL FIRE 2009) (see Figure 3.20-1, Very High Fire Hazard Severity Zones, in Section 3.20, Wildfire). Both the City and the state share responsibilities for the cost of fire suppression in the water service area.

In the City and water service area, 9,300 housing units and 3 million square feet of office, commercial, and industrial land uses are in VHFHSZs. Additionally, essential public facilities and services, which include two freeways (Interstate 15 and State Route 91), electrical transmission lines, and some public utilities, are also in VHFHSZs. The primary assets at risk are seven water reservoirs and three radio communication towers in the VHFHSZs.

Fire Protection

Riverside County Fire Department

The Riverside County (County) Fire Department operates five stations that primarily serve the City's sphere of influence. The County Fire Department and CAL FIRE respond to additional calls in the broader Temescal Valley. In 2016, the County Fire Department responded to approximately 2,044 service calls, 70 percent of which were medical services and rescue. The County Fire Department's average time for first response is 5.8 minutes for medical service and 7.7 minutes for fire and rescue.

Evacuation Routes

The City's location makes it susceptible to wildfires, earthquakes, and floods. Most major roadways and transit systems in or exiting the community cross one or more disaster-prone areas. 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 Interstate 15 and State Route 91, both which can be affected by wildfires. For areas at the wildland-urban interface, the City has Structure Protection Plans to address the evacuation routes. The Riverside County Strategic Contingency Plan that coincides with the Corona Structure Protection Plans incorporates these routes. The Corona Fire Department, in partnership with CAL FIRE, has published its Ready, Set, Go! Wildfire Action Plan to give residents the tools needed to prepare for

such an event. The City makes available the timely notification of wildland fires and debris flows. The City offers a local notification system that sends telephone notifications to residents and businesses in the community. The City also maintains a Community Emergency Response Team program where community members learn about the various hazards they are most susceptible to in their local jurisdiction, preparedness methods, mitigation efforts, and various types of evacuations, with an emphasis that direction and route can easily change and are incident driven.

3.9.2 Regulatory Setting

This section describes the federal, state, and local regulatory framework adopted to govern hazards and hazardous materials.

3.9.2.1 Federal

Comprehensive Environmental Response, Compensation and Liability Act

The Comprehensive Environmental Response, Compensation and Liability Act of 1980 is a law developed to protect the water, air, and soil resources from the risks created by past chemical disposal practices. This law is also referred to as the "Superfund Act" and regulates sites on the National Priority List, which are called "Superfund sites."

Emergency Planning and Community Right-To-Know Act

In 1986, Congress passed the Superfund Amendments and Reauthorization Act. Title III of this regulation may be cited as the "Emergency Planning and community Right-to-Know Act of 1986" (EPCRA). The act requires the establishment of state commissions, planning districts, and local committees to facilitate the preparation and implementation of an Emergency Plan. Under these requirements, local emergency planning committees are responsible for developing a plan to prepare for and respond to a chemical emergency, including the following:

- An identification of local facilities and transportation routes where hazardous materials are present.
- The procedures for immediate response in case of an accident (this must include a community-wide evacuation plan).
- A plan for notifying the community that an incident has occurred.
- The names of response coordinators at local facilities.
- A plan for conducting drills to test the plan. The Emergency Plan is reviewed by the State Emergency Response Commission and publicized throughout the community. The local emergency planning committee is required to review, test, and update the plan each year. The Riverside County Department of Environmental Health (DEH) is responsible for coordinating hazardous material and disaster preparedness planning and appropriate response efforts with City departments and local and state agencies. The goal is to improve public and private sector readiness and to mitigate local impacts resulting from natural or human-made emergencies.

Another purpose of the EPCRA is to inform communities and residents of chemical hazards in their areas. Sections 311 and 312 require businesses to report to state and local agencies the location and quantities of chemicals stored on site. Under Section 313, manufacturers are required to report chemical releases for more than 600 designated chemicals. In addition to chemical releases, regulated facilities are also required to report off-site transfers of waste for treatment or disposal at separate facilities, pollution prevention measures, and chemical recycling activities. The U.S. Environmental Protection Agency maintains the Toxic Release Inventory database that documents the information that regulated facilities are required to report annually.

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act is the principal federal law that regulates generation, management, and transportation of hazardous waste. Hazardous waste management includes the treatment, storage, or disposal of hazardous waste.

3.9.2.2 State

California Accidental Release Prevention Program

The California Accidental Release Prevention Program became effective on January 1, 1997, in response to Senate Bill 1889. The program aims to be proactive by requiring businesses to prepare Risk Management Plans, which are detailed engineering analyses of the potential accident factors present at a business and include mitigation measures that can be implemented to reduce this accident potential. This requirement is coupled with the requirements for preparation of Hazardous Materials Business Plans under the Unified Program, implemented by the certified unified program agency. This program is administrated locally by the County DEH.

California Code of Regulations, Title 22, Division 4.5

Title 22, Division 4.5, of the California Code of Regulations sets forth the requirements for hazardous waste generators, transporters, and owners or operators of treatment, storage, or disposal facilities. These regulations include the requirements for packaging, storage, labeling, reporting, and general management of hazardous waste before shipment. In addition, the regulations identify standards applicable to transporters of hazardous waste. These regulations specify the requirements for transporting shipments of hazardous waste, including manifesting, vehicle registration, and emergency accidental discharges during transportation.

California Fire Code

The California Fire Code (Title 24, Part 9, of the California Code of Regulations) sets forth requirements for building materials and methods pertaining to fire safety and life safety, fire protection systems in buildings, emergency access to buildings, and handling and storage of hazardous materials. The City adopts the update to the California Fire Code every 3 years.

Government Code, Section 65302, requires the Safety Element of a General Plan to address evacuation routes. The CAL FIRE Safety Element checklist also requires cities to address evacuation routes. In addition, Senate Bill 99 (2018) requires a Safety Element upon the next revision of the housing element on or after January 1, 2020, to include information identifying residential developments in hazard areas that do not have at least two emergency evacuation routes.

Hazardous Materials Business Plans

Both the federal government (Code of Federal Regulations) and the State of California (California Health and Safety Code) require businesses that handle more than a specified amount, or "reporting quantity," of hazardous or extremely hazardous materials to submit a Hazardous Materials Business Plan to the Corona Fire Department. According to City guidelines, the preparation, submittal, and implementation of a Hazardous Materials Business Plan is required by any business that handles a hazardous material or a mixture containing a hazardous material in specified quantities.

Hazardous Materials Business Plans must include an inventory of the hazardous materials at the facility. Businesses must update their plan and the chemical portion annually. In addition, Hazardous Materials Business Plan must include Emergency Response Plans and procedures to be used in the event of a significant or threatened significant release of a hazardous material. These plans need to identify the procedures for immediate notification of the appropriate agencies and personnel, identification of local emergency medical assistance appropriate for potential accident scenarios, contact information for the company emergency coordinators, a listing and location of emergency equipment at the business, an Evacuation Plan, and a training program for business personnel.

Hazardous Materials Disclosure Programs

The Unified Program administered by the State of California consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities for environmental and emergency management programs, which include Hazardous Materials Release Response Plans and Inventories (Hazardous Materials Business Plans), the California Accidental Release Prevention Program, and the Underground Storage Tank (UST) Program. The Unified Program is implemented at the local government level by certified unified program agencies.

The certified unified program agency for the City is the County DEH, which is responsible for regulating hazardous waste and tiered permitting, underground storage tanks, aboveground storage tanks, and Risk Management Plans.

The Corona Fire Department is a participating agency under the Unified Program and administers the Hazardous Materials Release Response Plans and Inventory Program and permits for handling underground storage and storage of hazardous materials pursuant to the Corona Fire Code.

Hazardous Materials Release Notification

The following state statutes require emergency notification of a hazardous chemical release:

- California Health and Safety Codes, Sections 25270.8 and 25507
- California Vehicle Code, Section 23112.5
- California Public Utilities Code, Section 7673, (California Public Utilities Commission General Orders No. 22-B and 161)
- California Government Code, Sections 51018 and 8670.25.5(a)
- California Water Code, Sections 13271 and 13272
- California Labor Code, Section 6409.1(b)10

Requirements for immediate notification of significant spills or threatened releases cover owners, operators, people in charge, and employers. Notification is required regarding significant releases from facilities, vehicles, vessels, pipelines, and railroads. In addition, releases that result in injuries or harmful exposure to workers must be immediately reported to the California Division of Occupational Safety and Health (Cal/OSHA) pursuant to the California Labor Code, Section 6409.1(b).

Leaking Underground Storage Tanks

Leaking USTs have been recognized since the early 1980s as the primary cause of groundwater contamination from gasoline compounds and solvents. In California, regulations aimed at protecting against UST leaks have been in place since 1983 (California Health and Safety Code). This occurred 1 year before the Resource Conservation and Recovery Act was amended to add Subtitle I, requiring UST systems to be installed in accordance with standards that address the prevention of future leaks. The State Water Resources Control Board was designated as the lead California regulatory agency in the development of UST regulations and policy. Older tanks are typically single-walled, steel tanks. Many of these have leaked as a result of corrosion, punctures, and detached fittings. As a result, the State of California required the replacement of older tanks with new, double-walled, fiberglass tanks with flexible connections and monitoring systems. UST owners were given 10 years to comply with the new requirements—the deadline was December 22, 1998. However, many UST owners did not act by the deadline; therefore, the state granted an extension for their replacement, ending January 1, 2002. The Regional Water Quality Control Boards, in cooperation with the City's Office of Emergency Services, maintain an inventory of leaking USTs in a statewide database.

3.9.2.3 Local

California Department of Forestry and Fire Protection, County of Riverside Unit Strategic Plan

The California Strategic Plan is implemented through individual "unit plans" that are prepared for different regions of the state. CAL FIRE has adopted a County of Riverside Unit Strategic Plan

that covers the County's and CAL FIRE's priorities for prevention, protection, and suppression of wildfires. The overall goal of the 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 and increasing initial attack success.

City of Corona 2020–2040 General Plan

The following policies in the City of Corona 2020–2040 General Plan are relevant to hazards and hazardous materials (City of Corona 2020a).

Public Safety Element

Goal PS-3. Ensure that the health, safety, and general welfare of residents and visitors of the City of Corona, including the overall health of the natural environment, is provided through good land use planning and strict adherence and enforcement of the City of Corona Hazardous Material Area Plan, Local Hazard Mitigation Plan, California Fire Code, Certified Unified Program Agency, and other pertinent sources and documents.

Policy PS-3.1. Enforce federal and state regulations and local ordinances in accordance with Certified Unified Program Agency requirements that require all users, producers and transporters of hazardous materials and waste to clearly identify materials that they store, use or transport, and make available emergency response plans, emergency release reports, hazardous material inventory reports, and toxic chemical release reports to reduce the risk from natural or other hazards and effectively protect the community.

Policy PS-3.5. Actively work with federal, state, County, and responsible entities to ensure proper cleanup activities are undertaken in as a timely manner as possible and are effectively managed to clean up contaminated sites so as to protect the public's health and safety.

Goal PS-4. Implement land use restrictions and review procedures that encourage adequate protection of the community, its residents, and business from airport land use and flight-related hazards.

Policy PS-4.4. Periodically review the Corona Municipal Airport Master Plan to update operational and safety procedures, reflect State and Federal mandates, improve the use of airport property, and recommend land use capability standards for land surrounding the airport.

Goal PS-9. Through fire prevention and educational efforts, promote participation, voluntary compliance and community awareness of fire safety issues in order to reduce the incidence and severity of fire and related emergencies and loss.

Policy PS-9.4. Maintain safe and accessible evacuation routes throughout the community; take precautions and ensure backup or mitigations for routes crossing high hazard areas (e.g., flood, seismic, high fire, etc.).

Goal PS-10. Reduce fire risk to life and property through effective land use planning and compliance with federal, state, local laws, ordinances, and standards.

Policy PS-10.1. Locate, when feasible, new essential public facilities outside of high fire risk areas; if not feasible, require construction and other methods to harden and minimize damage for existing/planned facilities in such areas.

Policy PS-10.2. Require all improved and new homes, structures, and facilities in the Very High Fire Hazard Severity Zones to adhere to additional fire safe design standards consistent with state law and local practice.

Policy PS-10.6. Require fuel modification plans and vegetation clearance standards for development in VHFHSZs to protect structures from wildfire, protect wildlands from structure fires, and provide safe access routes for the community and firefighters within the project boundary, which may be extended pursuant to required findings when in accordance with state law, local ordinance, rule or regulation and no feasible mitigation measures are possible.

City of Corona Emergency Operations Plan

The City has prepared an Emergency Operations Plan (EOP) to address the City's planned response to natural disasters, technological incidents, and national security emergencies. The EOP does not address normal day-to-day emergencies or the well-established and routine procedures used in coping with such emergencies. The EOP's operational concepts focus on potential large-scale disasters that can generate unique situations requiring unusual emergency responses. The EOP's emergency management goals are as follows (City of Corona 2020a):

1. Provide effective life safety measures and reduce property losses
2. Provide for the rapid resumption of impacted businesses and community services
3. Provide accurate documentation and records required for cost recovery efforts

City of Corona Local Hazard Mitigation Plan

The City has prepared a Local Hazard Mitigation Plan to identify the City's hazards, review and assess past disaster occurrences, estimate the probability of future occurrences, and set goals to reduce or eliminate long-term risk to people and property from natural and human-made hazards. Wildfire hazard is rated the second highest risk, after earthquakes, of the 23 hazards evaluated. The Local Hazard Mitigation Plan contains a series of goals and mitigation programs to address each of the hazards.

City of Corona Municipal Code

The following chapters and sections of the Corona Municipal Code relate to hazards and hazardous and materials:

- Chapter 2.52, Emergency Management Organization, provides for the preparation and carrying out of plans to protect people and property in the City during an emergency or disaster event.
  - Section 2.52.060 establishes a Disaster Council in the event there is an emergency or disaster event in the City. The Disaster Council includes the Fire Chief, who shall be the Council Chair, and members of the County Disaster Council, unless otherwise stated by the City Manager, and the Disaster Council shall include the Fire Department Emergency Services Director.
  - Section 2.52.090 indicates that the Fire Chief shall be the Emergency Services Director and shall appoint an Emergency Services Coordinator.
  - Section 2.52.120 established the Corona Fire Department Office of Emergency Services, which consists of positions that may be established by the City Council by resolution. The Corona Fire Department is assigned the office and its responsibilities.
  - Section 2.52.130 establishes the position of Emergency Services Coordinator, which the Fire Chief shall appoint. The Emergency Services Coordinator, and associated duties, is assigned to the Corona Fire Department, and the person serving that position is assigned to the Emergency Services Director.
- Chapter 15.16, Fire Hazard Severity Zones, outlines the authority of the Fire Chief in determining VHFHSZs and creating a VHFHSZ map.
  - Section 15.16.010 the City Council delegates authority to its Fire Chief to designate in the City's VHFHSZs as required by California Government Code, Section 51175 et seq., and other applicable state and federal laws, rules, and regulations. The Fire Chief has the authority to make any future revisions to the VHFHSZ in accordance with state and federal laws, rules, and regulations.
  - Section 15.16.020 the Fire Chief shall prepare and maintain a map titled the "City of Corona Very High Fire Hazard Severity Zones in LRA" ("VHFHSZ Map") to show the VHFHSZ in the City. The Fire Chief has the authority to make any future revisions to the VHFHSZ Map in accordance with state and federal laws, rules, and regulations.

Corona Standards of Coverage Study and Fire Strategic Plan

The Corona Fire Department sets the vision, mission, business operations, and guiding principles for the department by means of a strategic plan. The purpose of the Fire Strategic Plan is to allow

members of the organization to envision its future and develop the necessary procedures and operations to achieve that future. The plan is a foundational plan that assists the Corona Fire Department in preparing annual fiscal year budgets, Master Plans, and other related activities it is required to perform. Although the planning period is 8 years, the plan updated annually to assess service levels, performance, and other needed functions that may change during the course of a year.

South Coast Air Quality Management District

South Coast Air Quality Management District Rule 1403 governs the demolition of buildings containing asbestos materials. Rule 1403 specifies work practices with the goal of minimizing asbestos emissions during building demolition and renovation activities, including the removal and associated disturbance of asbestos-containing material. The requirements for demolition and renovation activities include asbestos surveying, notification, asbestos-containing material removal procedures and time schedules, asbestos-containing material handling and cleanup procedures, and storage and disposal requirements for asbestos-containing waste materials.

3.9.3 Thresholds of Significance

According to Appendix G of the California Environmental Quality Act (CEQA) Guidelines, a significant impact related to hazards and hazardous materials would occur if the project would (CEQA Guidelines, Section 15000 et seq.):

1. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials
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
3. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substance, or waste within one-quarter mile of an existing or proposed school
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
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
6. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan
7. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires

3.9.4 Environmental Analysis

3.9.4.1 Threshold 1: Routine Transport, Use, or Disposal of Hazardous Materials

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

Impact Analysis

Construction

Potentially toxic substances, such as fuels, oils, and lubricants, would be used during construction of proposed improvements. These materials would generally be used for excavation equipment, generators, and other construction equipment and would be contained in vessels engineered for safe storage. Spills or leakage of petroleum products during construction activities are required to be immediately contained, the hazardous material identified, and the material remediated in compliance with applicable state and local regulations for the cleanup and disposal of that contaminant including the California Health and Safety Code, Section 25510, and California Vehicle Code, Section 23112.5. Cal/OSHA has regulations concerning the use of hazardous materials, including requirements for safety training, exposure warnings, availability of safety equipment, and preparation of Emergency Action and Prevention Plans. A Spill Prevention and Control Plan that includes standard operating procedures for spill prevention, hazard assessment, spill prevention and containment, emergency response procedures, and closure of the spill incident would be prepared. Contaminated waste encountered would be required to be collected and disposed of at an appropriately licensed disposal or treatment facility. Compliance with existing regulations would ensure that construction workers and the general public are not exposed to any risks related to hazardous materials during construction activities.

Since the projects identified in the 2018 RWMP would be subject to these existing regulations, the implementation of the 2018 RWMP would not create significant hazards to the public or the environment through the routine transport, use, or disposal of hazardous materials.

Operation

Operation of the underground pipelines identified in 2018 RWMP would not require the use of any hazardous materials. Any use of hazardous materials at the aboveground facilities, including the Chase Tank, Chase Booster Pump Station, WRCRWA Booster Pump Station, and WRCRWA Flow Controls Improvements, would require Hazardous Materials Business Plans to be prepared pursuant to both the federal government (Code of Federal Regulations) and the State of California (California Health and Safety Code). These plans need to identify the procedures for immediate notification of the appropriate agencies and personnel, identification of local emergency medical assistance appropriate for potential accident scenarios, contact information for company

emergency coordinators, a listing and location of emergency equipment at the business, an Evacuation Plan, and a training program for business personnel. Therefore, the project would not create significant hazards to the public or the environment through the routine transport, use, or disposal of hazardous materials

Level of Significance Before Mitigation

Implementation of the 2018 RWMP would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Compliance with applicable state and local regulations for the cleanup and disposal of that contaminant, including the California Health and Safety Code, Section 25510; California Vehicle Code, Section 23112.5; Cal/OSHA; and the Hazardous Materials Disclosure Programs, would minimize the potential for the accidental release or upset of hazardous materials, ensuring public safety. Impacts would be less than significant.

Mitigation Measures

No mitigation measure are required.

Level of Significance After Mitigation

Because no mitigation measures are required, impacts would remain less than significant.

3.9.4.2 Threshold 2: Accidental Release of Hazardous Materials

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

Impact Analysis

Construction

Construction of distribution pipelines, booster pump stations, and water tanks associated with the 2018 RWMP would involve excavation and grading activities. As shown on Figure 3.9-1a through 3.9-1d, five projects—Rimpau California Pipeline, River Pipeline, Sampson Pipeline, Buena Vista Tenth Avenue Pipeline, and Klug Pipeline—identified in the 2018 RWMP would be in the vicinity of known hazardous waste sites. Therefore, there is a potential to encounter contaminated soils and groundwater during excavation activities that would result in an accidental release of hazardous materials. In addition, during construction of the additional projects identified in the 2018 RWMP, unreported contaminated soils and groundwater could be encountered. Encountered contaminated materials may be classified as a hazardous waste, a designated waste, or a special waste, depending on the type and degree of contamination. If hazardous substances are encountered during

construction, and if materials are improperly managed or disposed, workers and the public could be potentially exposed to contaminated materials through the accidental release.

Operation

Under normal operating procedures, chemicals would either be contained on site or used during normal operational procedures. However, unanticipated, accidental release of these hazardous materials into the environment could result. Any use of hazardous materials would require that a Hazardous Materials Business Plan be prepared pursuant to the federal government (Code of Federal Regulations) and the State of California (California Health and Safety Code). Any accidental release would be subject to the California Accidental Release Program. Therefore, operation of 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.

Level of Significance Before Mitigation

Implementation of the project would 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.

Mitigation Measures

Implementation of Mitigation Measures HAZ-1 and HAZ-2 would be required to address any undocumented sources of containments encountered during construction.

HAZ-1: **Preparation of Phase 1 Environmental Site Assessment.** Before construction of the Rimpau California Pipeline, River Pipeline, Sampson Pipeline, Buena Vista Tenth Avenue Pipeline, and Klug Pipeline, the City of Corona shall conduct a Phase 1 Environmental Site Assessment. The Phase 1 Environmental Site Assessment shall be prepared by a registered environmental assessor or equally qualified professional to assess the potential for contaminated soil or groundwater conditions at the project sites and along conveyance alignments. The Phase 1 Environmental Site Assessment shall include a review of appropriate federal and state hazardous materials databases and relevant local hazardous material site databases for hazardous waste in on-site and off-site locations within a one-quarter mile radius of the project sites and along conveyance alignments. The Phase 1 Environmental Site Assessment shall also include a review of existing or past land uses and aerial photographs, a summary of results of reconnaissance site visits, and a review of other relevant existing information that could identify the potential existence of contaminated soil or groundwater. If no contaminated soil or groundwater is identified, or if the Phase 1 Environmental Site Assessment does

not recommend any further investigation, the City of Corona shall proceed with final project design and construction.

If existing soil or groundwater contamination is identified, and if the Phase 1 Environmental Site Assessment recommends further review, the City of Corona shall retain a registered environmental assessor to conduct follow-up sampling to characterize the contamination and to identify any required remediation that shall be conducted consistent with applicable regulations before any earth-disturbing activities. The registered environmental assessor shall prepare a report that includes but is not limited to activities performed for the assessment, a summary of anticipated contaminants and contaminant concentrations at the proposed construction sites, and recommendations for appropriate handling of any contaminated materials during construction.

HAZ-2: **Halt of Construction Work if Hazardous Materials Are Encountered.** Before construction, workers shall be trained on how to identify hazardous materials and procedures if undefined, suspected contaminated soil or groundwater is encountered.

If unidentified or suspected contaminated soil or groundwater is encountered during construction activities of the projects identified in the 2018 Reclaimed Water Master Plan, the construction contractors shall immediately stop surface or subsurface activities in the event that potentially hazardous materials are encountered, an odor is identified, or considerably stained soil is visible. Contractors shall notify the City of Corona Public Works Department Project Manager immediately and follow the applicable local, state, and federal regulations regarding the discovery, response, disposal, and remediation of hazardous materials encountered during the construction process. This requirement shall be included in individual project Construction Plans and submitted to the City of Corona Public Works Department for review before approval of final design.

Level of Significance After Mitigation

Implementation of Mitigation Measures HAZ-1 and HAZ-2 would reduce impacts from undocumented sources of contamination encountered during construction to a less than significant level.

3.9.4.3 Threshold 3: Hazardous Emissions within 0.25 Mile of a School

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

Impact Analysis

Construction

According to the City's General Plan Technical Update: Final Environmental Impact Report, 34 schools are in the water service area. In addition, the City has 14 private schools—Montessori schools, alternative education, and religious schools. Several of these schools are within 0.25 mile of one or more of the projects identified in the 2018 RWMP (City of Corona 2020b).

Potentially toxic substances, such as fuels, oils, and lubricants, would be used during construction of the projects identified in the 2018 RWMP. These materials would generally be used for excavation equipment, generators, and other construction equipment and would be contained in vessels engineered for safe storage. As described in Section 3.9.4.1, compliance with applicable local, state, and federal regulations governing the transport, use, and storage of hazardous materials would ensure that schools within 0.25 mile of the project sites are not exposed to any risks related to hazardous materials during construction activities.

Operation

Under normal operating procedures, chemicals would either be contained on site or used during normal operational procedures. However, unanticipated, accidental release of these hazardous materials into the environment could result. As described in Section 3.9.4.1, compliance with applicable local, state, and federal regulations governing the transport, use, and storage of hazardous materials would ensure that schools within 0.25 mile of the project sites are not exposed to any risks related to hazardous materials during operation.

Level of Significance Before Mitigation

Implementation of the project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substance, or waste within 0.25 mile of an existing or proposed school. Impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Because no mitigation measures are required, impacts would remain less than significant.

3.9.4.4 Threshold 4: Hazardous Materials Sites

Would the project 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?

Impact Analysis

Construction

The Hazardous Waste and Substances Sites (Cortese) List is a planning document used by the state, local agencies, and developers to comply with the CEQA requirements in providing information about the location of hazardous materials release sites. Based on a review of the Cortese List, of the 31 hazardous material sites identified by the California Department of Toxic Substances Control EnviroStor database in the water service area, none are listed on the Cortese List. Therefore, construction associated with the project would not encounter hazardous sites pursuant to California Government Code, Section 65962.5.

Operation

Once constructed, the projects identified in the 2018 RWMP are not anticipated to result in any impacts related to the disturbance of documented hazardous materials sites.

Level of Significance Before Mitigation

Implementation of the project would not be on a site included on a list of hazardous materials compiled pursuant to California Government Code, Section 65962.5, and as a result, would not create a significant hazard to the public or the environment. Impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Because no mitigation measures are required, impacts would remain less than significant.

3.9.4.5 Threshold 5: Aircraft Safety Hazards

For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

Impact Analysis

Portions of the water service area are in the Airport Influence Area (AIA) of the Corona Municipal Airport as identified in the Comprehensive Land Use Plan (Aires 1993). The following projects identified in the 2018 RWMP would be constructed in the AIA of the Corona Municipal Airport: Monica, Klug, Citation, Glider, Helicopter, Cessna, Airport Circle, and Jenk Pipelines and the WRCRWA Flow Control Improvements. These projects are outside the 60 decibel contour lines and are not in the Airport Safety Zone. Therefore, the project would not result in a safety hazard

or excessive noise for people working in the water service area during construction activities or operational maintenance activities.

Level of Significance Before Mitigation

The project would not result in a safety hazard or excessive noise for people residing or working in the water service area, and impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Level of Significance After Mitigation

Because no mitigation is required, impacts would remain less than significant.

3.9.4.6 Threshold 6: Emergency Response Plan or Evacuation Plan

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

Impact Analysis

Construction of the project would occur in mainly public roadway right-of-way (ROW). During construction, temporary full or partial lane closures may be necessary, especially for distribution pipeline projects. The full or partial lane closures could result in the re-distribution of traffic along adjacent and surrounding roadways. As construction progresses, access for emergency vehicles could be impaired as result of reduced roadway widths (or capacity) and increased volumes of construction-related traffic or re-distributed traffic. As a result, construction could impair or physically interfere with adopted Emergency Response Plans or Evacuation Plans.

Once constructed, the identified pipelines, water storage tanks, booster pump stations, and flow control improvements would be in or adjacent to existing facilities or ROW. Trenches for pipeline installation would be backfilled with on-site material, and the surface elevation would be restored to match the original ground surface and pavement surface elevations. Therefore, operation of the projects identified in the 2018 RWMP would not interfere with emergency access.

Level of Significance Before Mitigation

Project construction would have the potential to temporarily impair implementation of or physically interfere with an adopted Emergency Response Plan or Evacuation Plan. Impacts would be potentially significant.

Mitigation Measures

Implementation of the following mitigation measures would reduce impacts to less than significant level. Mitigation Measure HAZ-3 would require the construction contractor to prepare and implement a Construction Traffic Control Plan during construction activities.

HAZ-3: **Prepare and Implement a Construction Traffic Control Plan**. The construction contractor shall prepare and implement a Construction Traffic Control Plan for roadways and intersections affected by the individual projects identified in the 2018 RWMP. This requirement shall be included on individual project Construction Plans and be submitted to the City of Corona Public Works Department for review before approval of final design. The Construction Traffic Control Plan shall comply with local agency requirements with jurisdiction over project construction and shall include but not be limited to the following elements based on local site and roadway conditions:

- Provide street layout showing location of construction activity and surrounding streets to be used as detour routes, including special signage.
- Post a minimum 72-hour advance warning of construction activities in affected roadways to allow motorists to select alternative routes.
- Restrict delivery of construction materials to non-peak travel periods (9:00 a.m.–3:00 p.m.) as appropriate.
- Maintain the maximum travel lane capacity during non-construction periods and provide flagger control at construction sites to manage traffic control and flows
- Maintain access for driveways and private roads, except for brief periods of construction, in which case property owners shall be notified.
- Require temporary steel plate trench crossings as needed to maintain reasonable access to homes, businesses, and streets. When required by the applicable encroachment permit, maintain the existing lane configuration during nonworking hours by covering the trench or jack pit with steel plates or by using temporary backfill.
- Require appropriate warning signage and safety lighting for construction zones.
- Access for emergency vehicles shall be maintained at all times. Police, fire, and emergency services shall be notified of the timing, location, and duration of construction activities that could hinder or delay emergency access through the construction period.
- Coordinate with regional transit agencies, including Corona Cruiser and Riverside Transit Agency, to plan as needed for the temporary relocation of bus stops or detour of transit routes on affected distribution pipeline alignments.
- Identify detours where available for bicyclists and pedestrians in areas potentially affected by project construction.

- Provide adequate off-street parking locations for worker vehicles and construction equipment where on-street parking availability is insufficient.
- Repair or restore the roadway right-of-way to its original condition or better upon completion of work.

Level of Significance After Mitigation

Implementation of Mitigation Measure HAZ-3 would reduce impacts to a less than significant level.

3.9.4.7 Threshold 7: Wildland Fires

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

Impact Analysis

Construction

Development under the project would involve the construction of water tanks, booster pump stations, flow control improvements, and distribution pipelines.

Portions of the water service area are in VHFHSZs mapped by CAL FIRE. The distribution pipelines would generally be in urbanized areas along public ROWs and would be generally devoid of dried vegetation. The presence of paved surfaces and existing structures substantially reduces the risk of construction equipment accidentally igniting surrounding vegetation. However, the Promenade Pipeline, Research Pipeline, Chase Tank, Chase Booster Pump Station, WRCRWA Booster Pump Station, and WRCRWA Flow Controls Improvements projects would be constructed on undeveloped sites and potentially flammable materials, such as brush, grass, or trees, could pose a risk of wildland fires during construction.

Operation

Once constructed, the proposed distribution pipelines would be installed underground. For aboveground facilities situated in the City's VHFHSZs, these facilities would maintain brush clearance to protect facilities from damage. There would be no permanent City employees working at these facilities so the risk of exposure to people would be low. New facilities identified in the 2018 RWMP would be incorporated into the existing maintenance schedule, which consists of daily maintenance checks for the pump stations and weekly maintenance checks for the water storage tanks. Therefore, the project would act not as a potential ignition sources for wildfires and would not expose people or structures to a significant risk of loss, injury, or death.

Level of Significance Before Mitigation

Construction activities associated with the project could expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. Impacts would be potentially significant.

Mitigation Measures

Implementation of Mitigation Measures HAZ-4 and HAZ-5 would reduce wildfire impacts during construction.

HAZ-4: **Maintain Construction Area Clear of Combustible Materials.** During construction, the contractor shall ensure that staging areas, welding areas, or areas slated for construction using spark-producing equipment shall be cleared of combustible vegetation or other materials that could serve as fire fuel. Vegetation clearing shall be coordinated with a qualified biologist before removal. The contractor shall keep these areas clear of combustible materials to maintain a firebreak. Any construction equipment that normally includes a spark arrester shall be in good working order. This includes but is not limited to vehicles, heavy equipment, and chainsaws. This requirement shall be included on individual project Construction Plans and be submitted to the City of Corona Public Works Department for review before approval of final design.

HAZ-5: **Provide Accessible Fire Suppression Equipment.** Work crews shall be required to have sufficient fire suppression equipment readily available to ensure that any fire resulting from construction activities is immediately extinguished. Off-road equipment using internal combustion engines shall be equipped with spark arrestors. This requirement shall be included on individual project Construction Plans and be submitted to the City of Corona Public Works Department for review before approval of final design.

Level of Significance After Mitigation

Implementation of Mitigation Measures HAZ-4 and HAZ-5 would reduce impacts to a less than significant level.

3.9.5 Cumulative Impacts and Mitigation

3.9.5.1 Cumulative Threshold 1: Routine Transport, Use, or Disposal of Hazardous Materials

The geographic context for the analysis of cumulative impacts relative to the transport, use, and disposal of hazardous materials encompasses nearby facilities that regularly require the use or disposal of hazardous materials and the roadways and freeways used by vehicles transporting hazardous materials to and from the water service area. Cumulative projects in the region would result in the use and transport of incrementally more oils, greases, and petroleum products for

construction and operational purposes. This could potentially result in a significant hazard to the public or the environment. Similarly, cumulative projects would be required to comply with federal, state, and local regulations for the routine transport, use, and disposal of any hazardous materials, including the California Health and Safety Code, Section 25510; California Vehicle Code, Section 23112.5; Cal/OSHA; and the Hazardous Materials Disclosure Programs, which would reduce the potential to result in a significant cumulative impact. Therefore, implementation of the project would not contribute to a significant cumulative impact.

3.9.5.2 Cumulative Threshold 2: Accidental Release of Hazardous Materials

The geographic context for the analysis cumulative impacts relative to the accidental releases is site specific. The implementation of various cumulative projects may increase the likelihood of hazards to the public or the environment through the reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Additionally, as discussed in Section 3.9.4.2, construction impacts related to accidental release would not be significant with the implementation of Mitigation Measure HAZ-1 and HAZ-2. Similarly, during operation, other projects would have to comply with a similar set of federal, state, and local laws and regulations concerning the identification and management of hazardous materials used during operation, and any use of hazardous materials would require a Hazardous Materials Business Plan to be prepared pursuant to both the federal government (Code of Federal Regulations) and the State of California (California Health and Safety Code). Any accidental release would be subject to the California Accidental Release Program. This would reduce the risks associated with an accidental release of hazardous materials from construction and operation of cumulative projects, and a potentially significant cumulative impact would not occur. Therefore, implementation of the project would not contribute to a significant cumulative impact.

3.9.5.3 Cumulative Threshold 3: Hazardous Emissions within 0.25 Mile of School

The geographical context for the analysis of cumulative impacts related to hazards to school would be projects identified in the 2018 RWMP within 0.25 mile of the existing 34 public and 14 private schools in the water service area. Cumulative projects would be required to comply with federal, state, and local regulations applicable to the use, disposal, and transportation of hazardous materials, including the California Health and Safety Code, Section 25510; California Vehicle Code, Section 23112.5; Cal/OSHA; and the Hazardous Materials Disclosure Programs. Any potentially significant impacts would be reduced to a less than significant level through compliance with applicable regulations, and cumulative projects would not result in a significant cumulative impact. Therefore, implementation of the proposed project would not contribute to a significant cumulative impact associated with the handling of or emissions from hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school.

3.9.5.4 Cumulative Threshold 4: Hazardous Materials Sites

The geographic context for the analysis cumulative impacts relative to the hazardous materials sites is site specific. There are no known sites listed on the Cortese List in the water service area. Therefore, a significant cumulative impact would not occur with implementation of the project, and the project's contribution to hazardous materials sites would not be cumulatively considerable.

3.9.5.5 Cumulative Threshold 5: Aircraft Safety Hazards

The geographic context for the analysis of cumulative impacts related to aircraft hazards would be the Corona Municipal Airport AIA. Potential risks associated with development in the vicinity of the Corona Municipal Airport would be a factor in any decision to approve or deny future development proposals. Land uses that may be impacted by the airport are reviewed and regulated through the Airport Land Use Compatibility Plan and the City. As a result, cumulative risks to future development associated with proximity to the Corona Municipal Airport would not result in a significant impact. The project's contribution would not be cumulatively considerable.

3.9.5.6 Cumulative Threshold 6: Emergency Response Plan or Evacuation Plan

The geographic context for the analysis of cumulative impacts relative to Emergency Response and Evacuation Plans is the water service area. Cumulative projects have the potential to impair existing Emergency Response and Evacuation Plans if they block evacuation or access roads or if necessary off-site road improvements result in the closure of roads. Construction and operation associated with future development in the surrounding City could result in activities that could interfere with adopted Emergency Response or Evacuation Plans, such as temporary construction barricades or other obstructions that could impede emergency access. Cumulative projects would be required to comply with the requirements of the Corona Fire Department, County Fire Department, and the City's traffic control requirements. Compliance with applicable regulations would ensure that cumulative projects do not result in a significant impact associated with the impairment of an Emergency Response and Evacuation Plan.

Implementation of the project would require temporary road and lane closures during construction, which could impair or physically interfere with adopted Emergency Response Plans or Evacuation Plans. However, a Construction Traffic Control Plan would be put in place to minimize impaired emergency response or evacuation during construction activities consistent with Mitigation Measure HAZ-3. In addition, police, fire, and emergency services shall be notified of the timing, location, and duration of construction activities that could hinder or delay emergency access through the construction period. Therefore, the project's contribution to cumulative impacts associated with the interference of an adopted Emergency Response or Evacuation Plan would not be cumulatively considerable.

3.9.5.7 Cumulative Threshold 7: Wildland Fires

The geographic scoped for cumulative impacts related to wildland is the water service area. Portions of the cumulative projects and the projects identified in the 2018 RWMP are in a VHFHSZ. Construction and operation of cumulative projects could result significant cumulative impact associated with significant risk of loss, injury, or death involving wildland fires.

As discussed in Section 3.9.4.7, Mitigation Measures HAZ-4 and HAZ-5 would require construction areas to be clear of combustible materials and to ensure that sufficient fire suppression equipment is available during construction activities, which would reduce any construction-related wildfire impacts. In addition, the project would include defensibility features for the aboveground structures. Therefore, cumulative projects, including the project, would be constructed and designed to minimize expose people or structures to a significant risk of loss, injury, or death involving wildland fires. A significant cumulative impact would not occur, and the project's contribution would not be cumulatively considerable.

3.9.6 Conclusion

Potentially toxic substances, such as fuels, oils, and lubricants, would be used during construction activities associated with the project. Spills or leaks of petroleum products during construction activities are required to be immediately contained, the hazardous material identified, and the material remediated in compliance with applicable state and local regulations for the cleanup and disposal of containments, including the California Health and Safety Code, Section 25510; Vehicle Code, Section 23112.5; Cal/OSHA; and the Hazardous Materials Disclosure Programs. However, contaminated waste encountered would be required to be collected and disposed of at an appropriately licensed disposal or treatment facility. Compliance with existing regulations would ensure that construction workers and the public are not exposed to any risks related to the routine transport, use, or disposal of hazardous materials. Direct and cumulative impacts would be less than significant.

Construction associated with the project could encounter documented and unreported contaminated soils and groundwater during excavation activities. If hazardous substances are encountered during construction of the project, and if materials are improperly managed or disposed, workers and the public could be potentially exposed to contaminated materials and impacts would be significant. Implementation of Mitigation Measures HAZ-1 and HAZ-2 would address any documented or unreported sources of containment encountered during construction of the project. In addition, under normal operating procedures, unanticipated, accidental release of these hazardous materials into the environment could result. Any use of hazardous materials would require that a Hazardous Materials Business Plan be prepared pursuant to both the federal government (Code of Federal Regulations) and the State of California (California Health and Safety Code). Any accidental release would be subject to the California Accidental Release

Program. Direct and cumulative impacts would be less than significant with the incorporation of mitigation measures.

Several schools in the water service area would be within 0.25 mile of one or more projects identified in the 2018 RWMP. Potentially toxic substances, such as fuels, oils, and lubricants, would be used during construction of projects identified in the 2018 RWMP. In addition, under normal operating procedures, chemicals would either be contained on site or used during normal operational procedures. Compliance with applicable local, state, and federal regulations governing the transport, use, and storage of hazardous materials, including the California Health and Safety Code, Section 25510; California Vehicle Code, Section 23112.5; Cal/OSHA; and the Hazardous Materials Disclosure Programs, would ensure that schools within 0.25 mile of the project sites are not exposed to any risks related to hazardous materials during construction and operation activities. Direct and cumulative impacts would be less than significant.

No known sites in the water service area are on the Cortese List. Therefore, construction associated with the project would not encounter hazardous sites pursuant to California Government Code, Section 65962.5. No direct or cumulative impacts would occur.

Portions of the water service area are in the Corona Municipal Airport AIA. The projects in the AIA would be constructed outside the 60-decibel contour lines and are not in the Airport Safety Zone. Therefore, the project would not result in a safety hazard or excessive noise during construction activities or operational maintenance activities. Direct and cumulative impacts would be less than significant.

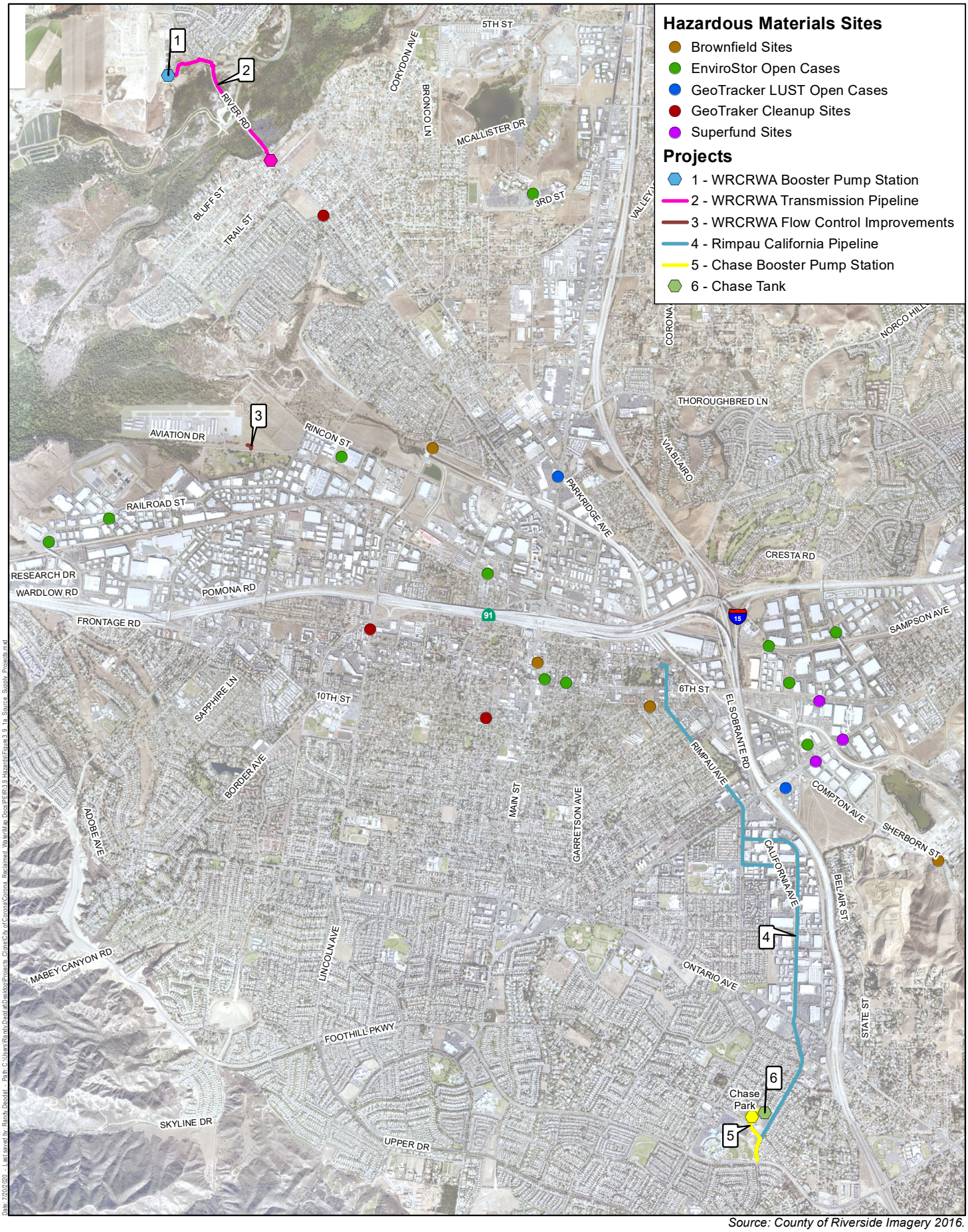
Construction of the project may require temporary full or partial lane closures. The full or partial lane closures could result in the re-distribution of traffic along adjacent and surrounding roadways. As construction progresses, access for emergency vehicles could be impaired as result of reduced roadway widths (or capacity) and increased volumes of construction-related traffic or re-distributed traffic. As a result, construction could impair or physically interfere with adopted Emergency Response Plans or Evacuation Plans. Implementation of Mitigation Measure HAZ-3 would require the preparation and implementation of a Construction Traffic Control Plan that would allow for access for emergency vehicles shall be maintained at all times. In addition, once constructed, the identified pipelines, water storage tanks, booster pump stations, and flow control improvements would be in or adjacent to existing facilities or ROW and would not interfere with emergency access. Direct and cumulative impacts would be less than significant with the incorporation of mitigation measures.

Portions of the water service area are in VHFHSZs mapped by CAL FIRE. The distribution pipelines would generally be in urbanized areas along public ROWs and would be generally devoid of dried vegetation. However, the Promenade Pipeline, Research Pipeline, Chase Tank, Chase Booster Pump Station, WRCRWA Booster Pump Station, and WRCRWA Flow Controls

Improvements projects are proposed on undeveloped sites and potentially flammable materials, such as brush, grass, or trees, could pose a risk of wildland fires during construction.

Mitigation Measures HAZ-3 and HAZ-4 would require construction areas to be clear of combustible materials and to ensure that sufficient fire suppression equipment is available during construction activities, which would reduce impacts to less than significant. In addition, once constructed, the proposed distribution pipelines would be installed underground. Aboveground facilities would maintain brush clearance to protect facilities from damage. No permanent City employees would be working at these facilities so the risk of exposure to people would be low. Therefore, direct and cumulative impacts would be less than significant with incorporation of mitigation measures.

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Source: County of Riverside Imagery 2016.

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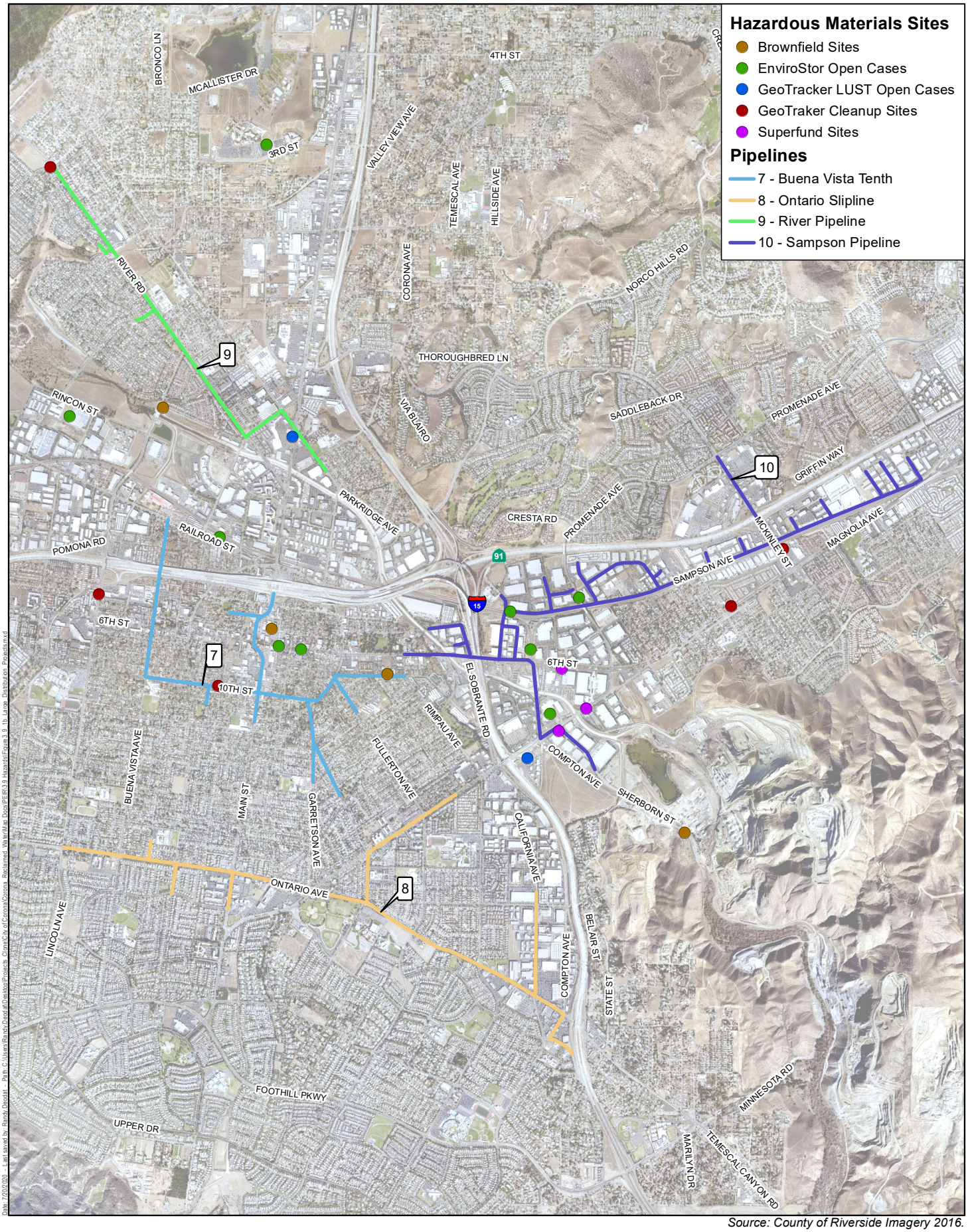
Harris & Associates

Figure 3.9-1a

Hazardous Materials Cleanup Sites - Source of Supply Projects

City of Corona 2018 Reclaimed Water Master Plan

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Source: County of Riverside Imagery 2016.

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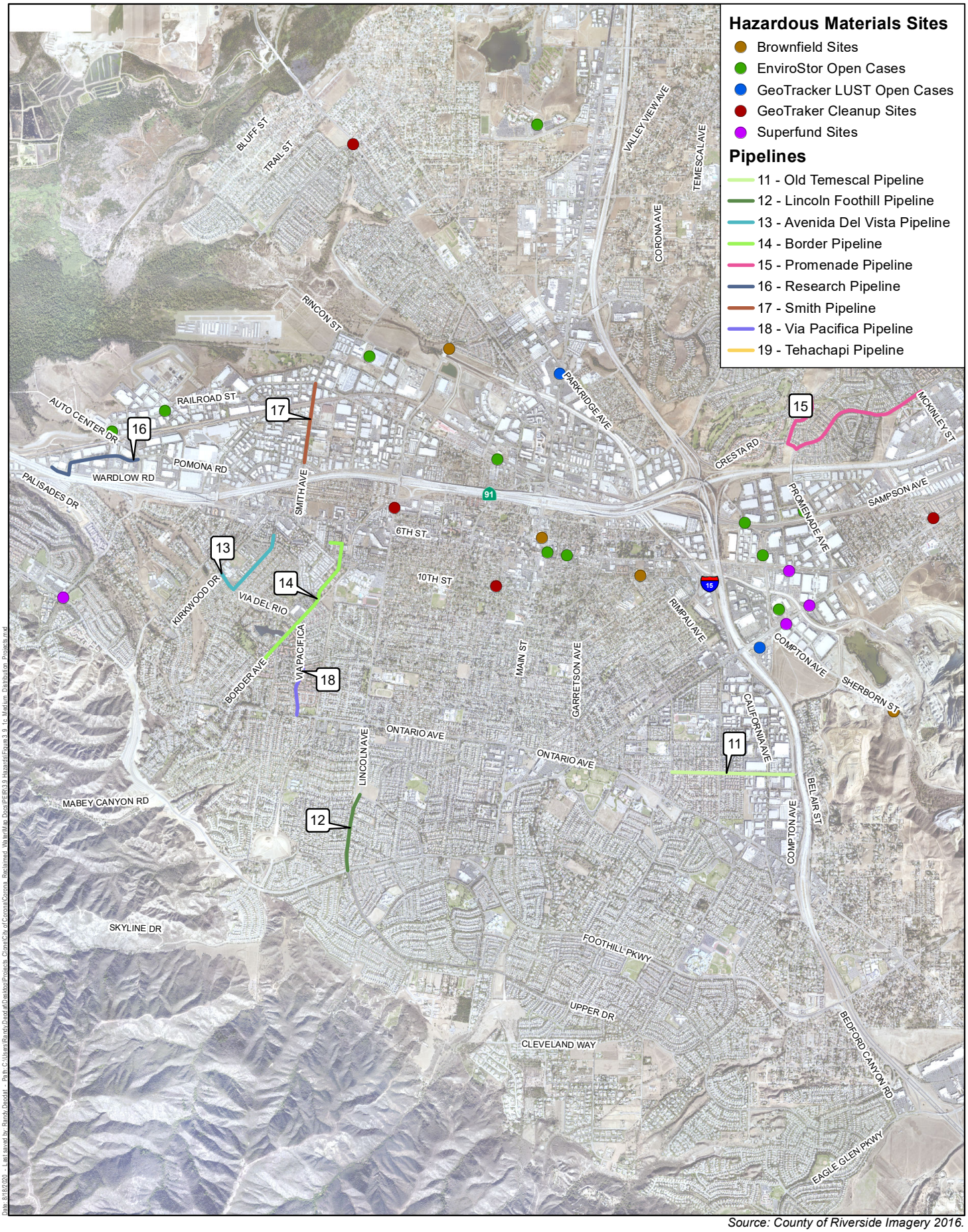
Harris & Associates

Figure 3.9-1b

Hazardous Material Cleanup Sites - Large Distribution Pipelines

City of Corona 2018 Reclaimed Water Master Plan

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Source: County of Riverside Imagery 2016.

Harris & Associates

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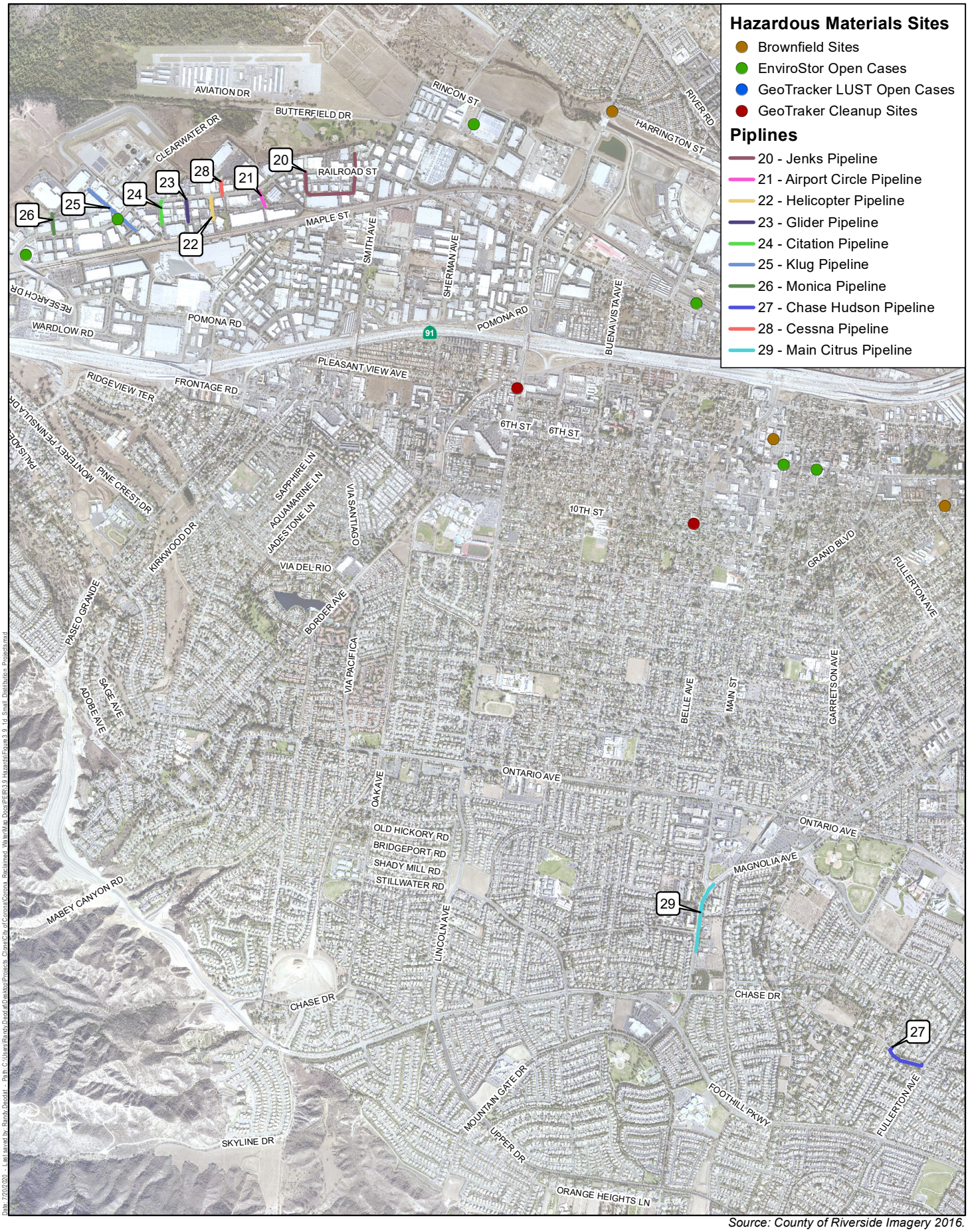
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Figure 3.9-1c

Hazardous Material Cleanup Sites - Medium Distribution Pipelines

City of Corona 2018 Reclaimed Water Master Plan

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Source: County of Riverside Imagery 2016.

Harris & Associates

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Figure 3.9-1d

Hazardous Material Cleanup Sites - Small Distribution Pipelines

City of Corona 2018 Reclaimed Water Master Plan

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3.10 Hydrology and Water Quality

This section discusses the potential impacts to agriculture and forestry resources in the City of Corona's (City's) water service area that may result from the implementation of the 2018 Reclaimed Water Master Plan (project or 2018 RWMP). Impacts of the project on existing and future water supply sources, wastewater treatment, and stormwater facilities are described and analyzed in Section 3.19, Utilities and Service Systems. Impacts associated with potential topsoil loss and erosion are addressed in Section 3.7, Geology, Soils, and Paleontological Resources. The analysis in this section is based in part on the following information: City of Corona 2020–2040 General Plan (City of Corona 2020a).

3.10.1 Environmental Setting

This section describes the environmental setting as it relates to hydrology and water quality for the water service area. The project proposes reclaimed water facilities in various locations throughout the water service area.

3.10.1.1 Hydrology

Regional Drainage

The water service area resides in the Santa Ana River watershed, a flood control zone monitored by the Santa Ana Regional Water Quality Control Board (RWQCB) that covers portions of the Counties of Riverside, Orange, and San Bernardino. In the County of Riverside, the Santa Ana River watershed is subdivided into the Santa Ana River subwatershed (which the water service area is in) and the San Jacinto River subwatershed. The Santa Ana River subwatershed consists of the Santa Ana River and its tributaries, and the San Jacinto River subwatershed includes the San Jacinto River and its tributaries that overflow into the Santa Ana River only in high-volume storm events.

Ultimately, all channels converge with the Santa Ana River where downstream ends of the channel travel through the County of Orange before emptying into the Pacific Ocean.

Local Surface Waters

The Santa Ana River subwatershed is also subdivided into smaller subwatersheds based on major tributary channels that feed into the Santa Ana River. The water service area is in two of these smaller subwatersheds: the Middle Santa Ana River subwatershed and the Temescal Wash subwatershed. The Middle Santa Ana River subwatershed is in the northwestern corner of the County and covers a total tributary area of 170 square miles that generally drains west toward the Santa Ana River. Tributaries to this subwatershed include Temescal Creek, Tequesquite Arroyo (Sycamore Creek), Day Creek, and San Sevaine Creek. The Temescal Wash subwatershed covers

250 square miles and is defined as the tributary area draining into the Temescal Wash, also known as Temescal Creek, that connects Lake Elsinore with the Santa Ana River.

Tributaries to the Temescal Wash include Wasson Canyon Wash, Arroyo Del Toro, Stovepipe Canyon Wash, Rice Canyon Wash, and Lee Lake. The majority of the City lies in this subwatershed, and the drainage channels that run through the City and tie into Temescal Wash include Arlington Channel, Main Street Channel, Oak Street Drain, Joseph Canyon Wash, and Bedford Wash.

Existing Drainage Facilities

The general drainage pattern in the water service area is in a northwesterly direction toward the Santa Ana River. Substantial flows reach the mouths of the canyons and then spread out onto the alluvial fan formed by several watercourses draining the mountains. The alluvial fan runs northerly at an average grade of 4 percent from an elevation of approximately 1,500 feet at the toe of the mountains to an elevation of approximately 600 feet along Temescal Wash. All the channel reaches in the City in the two subwatersheds are improved (lined) for flood control and are not subject to hydromodification impacts. The storm drain system in the City is composed of the following six main storm drain facilities:

- Temescal Canyon Wash is the major watercourse and flows northwesterly through the northern half of the City. Temescal Wash joins the Santa Ana River at the site of Prado Dam, a U.S. Army Corps of Engineers flood control reservoir. This reservoir is at the northwestern City limits.
- Oak Street Channel traverses generally from the Oak Street Debris Basin northerly across State Route 91 and terminates at the Temescal Wash. The channel is generally an open, rectangular, concrete-lined section with various culvert crossings at the major streets.
- Main Street Channel traverses through the southeasterly corner of the City and consists of a concrete-lined, rectangular channel at the upstream end. It joins the Temescal Wash at Sixth Street.
- Arlington Channel consists of a vertical wall, concrete-lined section that flows west through the Home Gardens area and joins Temescal Wash near the Atchison, Topeka, and Santa Fe Railroad, north of State Route 91.
- South Norco Storm Drain runs from southwest of Norco through Parkridge Avenue at the City limit and terminates at Temescal Wash.
- North Norco Storm Drain enters the City limits at River Road and terminates at Temescal Wash.

Other facilities include the Main, Oak, and Mabey Basins; the Line 36 storm drain; the Line 7-A storm drain; and the Compton Avenue storm drain. Storm drainpipes range from 12-inch to 102-inch-diameter pipes in the City.

3.10.1.2 Groundwater

The Middle Santa Ana River Groundwater Basin contains 12 management zones: Arlington, Bedford, Coldwater, Elsinore, Lee Lake, Riverside A through F, and Temescal. The City resides in the Bedford, Coldwater, and Temescal management zones. The Temescal subbasin underlies the southwestern part of the upper Santa Ana Valley. The water-bearing materials are dominantly composed of Holocene alluvium deposited by streams draining the northeastern slopes of the Santa Ana Mountains. Dominant recharge to the groundwater reservoir is from percolation of precipitation on the valley floor and infiltration of stream flow in tributaries exiting the surrounding mountains and hills. The Bedford subbasin is south of the Temescal subbasin in Temescal Canyon between the Santa Ana Mountains and the El Sobrante Hills. The Coldwater subbasin is southwest of the Bedford subbasin and Temescal Wash. The Coldwater and Bedford subbasins are separated by the North Glen Ivy segment of the Elsinore Fault (City of Corona 2016).

3.10.1.3 Surface Water Quality

"Receiving waters" is a general term typically used to describe any water body, such as a creek, river, lake, bay, or ocean, that receives runoff. In the context of the project, it refers to the water bodies that would receive runoff from the water service area. The water service area lies in the Santa Ana Hydrologic Basin and Middle Santa Ana Hydrological Area. The designated beneficial uses of surface waters in the water service area include agriculture (ARG), groundwater recharge (GWR), industrial supply (IND), municipal (MUN), contact water recreation (REC-1), non-contact water recreation (REC-2), Rare, Threatened, or Endangered Species (RARE), warm freshwater habitat (WARM), and wildlife habitat (Wild). Table 3.10-1 provides a description of the beneficial use designations.

The Clean Water Act (CWA) (Section 303[d]) requires that impaired waterways be identified and plans devised to restore their beneficial uses. In the water service area, portions of the Temescal Creek and the Santa Ana River are listed as CWA Section 303(d) impaired water bodies for pH (Temescal Creek Reach), indicator bacteria (Santa Ana River Reach 2), and copper, lead, and pathogens (Santa Ana River Reach 3).

Table 3.10-1. Beneficial Use Designations

Designation	Abbreviation	Definition
Agriculture Supply	ARG	Includes uses of water for farming, horticulture or ranching. These uses may include, but are not limited to, irrigation, stock watering, and support of vegetation for range grazing.
Industrial Service Supply	IND	Includes uses of water for industrial activities that do not depend primarily on water quality. These uses may include, but are not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection and oil well repressurization.
Municipal and Domestic Supply	MUN	Includes uses of water for community, military, municipal or individual water supply systems. These uses may include, but are not limited to, drinking water supply.
Groundwater Recharge	GRW	Includes uses of water for natural or artificial recharge of groundwater for purposes that may include, but are not limited to, future extraction, maintaining water quality or halting saltwater intrusion into freshwater aquifers.
Contact Water Recreation	REC-1	Includes uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include but are not limited to swimming, wading, water-skiing, skin and SCUBA diving, surfing, white water activities, fishing, or use of natural hot springs.
Non-contact Water Recreation	REC-2	Includes the uses of water for recreational activities involving proximity to water but not normally involving body contact with water, where ingestion of water is reasonably possible. These uses include but are not limited to picnicking, sunbathing, hiking, beachcombing, camping, boating, tide pool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.
Rare, Threatened, or Endangered Species	RARE	Includes uses of water that support habitats necessary, at least in part, for the survival and successful maintenance of plant or wildlife species established under state or federal law as rare, threatened, or endangered.
Warm Freshwater Habitat	WARM	Includes uses of water to support warm water ecosystems that may include, but are not limited to, preservation and enhancement of aquatic habitats, vegetation, fish and wildlife, including invertebrates.
Wildlife Habitat	WILD	Includes uses of water that support terrestrial ecosystems including but not limited to preservation and enhancement of terrestrial habitats, vegetation, wildlife, or wildlife water and food sources.

Source: RWQCB 2019.

3.10.2 Regulatory Setting

This section describes the federal, state, regional, and local regulatory framework adopted to protect hydrology and water quality.

3.10.2.1 Federal

Clean Water Act

The Federal Water Pollution Control Act (or 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 U.S. Environmental Protection Agency authority to implement pollution control programs, such as setting wastewater standards for industry. The statute's goal is to 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 water quality, such as dredging and filling wetlands. The CWA funds the construction of sewage 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 discernible, confined, and discrete conveyance, such as am 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 that discharge pollutants from any point source into waters 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, 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 discharge to publicly owned treatment works, 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 dischargers. Municipal sources are publicly owned treatment works that receive primarily domestic sewage from residential and commercial customers. Specific NPDES program areas applicable to municipal sources are the National Pretreatment Program, Municipal Sewage Sludge Program, Combined Sewer Overflows, and Municipal Stormwater Program. Non-municipal sources include industrial and commercial facilities. The NPDES establishes requirements for the discharge of urban runoff from Municipal Separate Storm Sewer Systems (MS4), which are ditches, curbs, gutters, storm sewers, and similar means of collecting or conveying runoff that are not connected with a wastewater collection system or treatment plant. The State Water Resources Control Board (SWRCB) approved a MS4 permit for the County of Riverside (Order No. R8-2010-003), of which the City and other cities in the County are copermittees. Pursuant to the 2010 MS4 Permit, each copermittee was required to update and implement a Drainage Area Management Plan for its jurisdiction, as well as Local Implementation Plans (LIPs), which describe the copermittee's urban runoff management programs for existing and proposed dischargers in the jurisdiction.

3.10.2.2 State

California Statewide Groundwater Elevation Monitoring Program

The California Department of Water Resources manages the California Statewide Groundwater Elevation Monitoring program, which tracks the health and groundwater-level elevations of California's 515 different basins and how to best manage these basins. It also publishes a list of basin prioritization to determine how resources should be allocated to manage various groundwater basins, with the majority of resources directed toward basins with medium and high priority.

Porter-Cologne Water Quality Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act), codified in Division 7 of the California Water Code, is California's primary statutory authority for the protection of water quality. Under the Porter-Cologne Act, the state must adopt water quality policies, plans, and objectives that protect the state's waters beneficial uses. State law defines beneficial uses as "domestic; municipal; agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves" (California Water Code, Section 13050[f]). The Porter-Cologne Act sets the obligations of the SWRCB and RWQCB pertaining to the adoption of water quality control plans and establishment of water quality objectives. Unlike the CWA, which regulates only surface water, the Porter-Cologne Act regulates both surface water and groundwater. The SWRCB and RWQCBs establish water quality objectives for surface waters and groundwater and have permitting and enforcement authority to prevent and control waste discharges that could affect waters of the state through the issuance of NPDES permits and water discharge requirements. The City is under the jurisdiction of the San Ana RWQCB.

Stormwater Pollution Prevention Plans

Pursuant to the CWA, in 2001, the SWRCB issued a statewide general NPDES permit for stormwater discharges from construction sites (NPDES No. CAS000002). Under this Statewide General Construction Activity Permit, discharges of stormwater from construction sites with a disturbed area of one or more acres are required to either obtain individual NPDES permits for stormwater 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 Stormwater Pollution Prevention Plan (SWPPP). Each applicant under the General Permit must ensure that a SWPPP is prepared before grading and is implemented during construction. The SWPPP must list best management practices (BMPs) implemented on the construction site to protect stormwater 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.

3.10.2.3 Regional

County of Riverside MS4 Permit

In January 2010, the Santa Ana RWQCB re-issued the Riverside County MS4 Stormwater Permit as Waste Discharge Requirement Order R8-2010-0033 (NPDES Permit No. CAS618033) to the County of Riverside, the incorporated cities of the County of Riverside, and the Riverside County Flood Control and Water Conservation District in the Santa Ana Region. Pursuant to the 2010 MS4 Permit, the copermittees were required to update and implement a Drainage Area Management Plan for its jurisdiction, as well as an LIP, which describes the copermittee's urban runoff management program for its local jurisdiction.

Santa Ana Basin Plan

Each RWQCB 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 is in the Santa Ana River Basin, Region 8, in the Upper Santa Ana Watershed. The Water Quality Control Plan for the Santa Ana River Basin (Region 8) was adopted in 1995. The Santa Ana Basin Plan gives direction on the beneficial uses of the state waters in Region 8, describes the water quality that must be maintained to support such uses, and provides programs, projects, and other actions necessary to achieve the standards established in the Santa Ana Basin Plan (RWQCB 2019).

Santa Ana Watershed Action Plan

The Watershed Action Plan for the Santa Ana Watershed Region of the County of Riverside and its permittees is a requirement of the 2010 MS4 Permit. The purpose of this requirement is to coordinate existing watershed approaches to address water quality and hydromodification impacts resulting from urbanization within the watershed. This requirement is to be achieved by evaluating existing programs relating to the integration of water quality, stream protection, stormwater management, and reuse strategies with land planning policies, ordinances, and plans within each jurisdiction to the maximum extent practicable. Through implementation of the 2010 MS4 Permit, along with the development of the Santa Ana Watershed Action Plan, the Santa Ana RWQCB has emphasized that the plans for each jurisdiction should address cumulative impacts of development on vulnerable streams; preserve or restore, consistent with the maximum extent practicable standard, the structure and function of streams; and protect surface water and groundwater quality.

3.10.2.4 Local

City of Corona 2020–2040 General Plan

The following section provides relevant goals and policies of the City of Corona 2020–2040 General Plan as they relate to hydrology and water quality (City of Corona 2020a):

Infrastructure and Utilities Element

Goal IU-5. Ensure that urban runoff from existing and new development does not degrade the quality of the City's surface waters, groundwater system, and other sensitive environmental areas.

Policy IU-5.1. Ensure that existing and new development does not directly degrade or indirectly contribute to the degradation of surface waters or the groundwater system.

Policy IU-5.2. Reduce pollutant loading through passive treatment systems such as vegetated filter strips, grass swales, and infiltration/sedimentation areas in suitable open space areas, overland flow channels, and landscaping adjacent to parking lots and streets.

Policy IU-5.4. Evaluate any existing environmental degradation or potential degradation from current or planned storm drain and storage control facilities in wetlands or other sensitive environments.

Policy IU-5.6. Implement environmentally and economically efficient stormwater treatment systems, whenever practical (such as artificial marshland sewer treatment).

Policy IU-5.8. During construction projects, ensure compliance with all terms and conditions outlined in the NPDES permit, including the implementation of the latest BMPs and determination of need for any additional water quality management plans to reduce pollutants and urban runoff flows to the maximum extent practicable.

Public Safety Element

Goal PS-2. Adequate protection of the health, safety, and welfare of the public, property and economic losses, and community social and service functions from flooding and dam inundation events.

Policy PS-2.3. Require adherence to the California Building Code, Municipal Codes, FEMA [Federal Emergency Management Agency] flood control guidelines, and Corona Floodplain Management Ordinance for the purposes of avoiding or minimizing the risk of damages to structures, injury, or loss of life.

Policy PS-2.4. Locate, when feasible, new essential public facilities outside of flood zones; for those that must remain or are built in flood hazard zones, harden structures to maintain the structural and operational integrity of such public facilities in case of flooding.

Policy PS-2.5. Identify vulnerable structures, infrastructure, and utilities in areas of special flood hazards and encourage the retrofit or upgrade of such structures and infrastructure to minimize damages and reduce the risk or injury or death from flooding.

Policy PS-2.6. Prohibit the alteration of natural floodplains or improved drainage areas or the allowance of encroachments by structures without determination by the Floodplain Administrator that such actions will not be detrimental to public health and safety.

Environmental Resources Element

Goal ER-1. Enhancement, protection, and management of the quality and quantity of hydrologic resources in Corona to ensure its long-term quality and sustainability.

Policy ER-1.1. Continually monitor the implementation and enforcement of water quality regulations by appropriate County, state, and federal agencies to prevent additional pollution of the City's hydrologic resources, including aquatic environments, underground water basins, and surface waters.

Policy ER-1.2. Require all public and private grading and construction activities to minimize adverse impacts on the City's water resources through the use of best management practices, as established and updated from time to time by the City of Corona.

Policy ER-1.3. Implement standard conditions of approval on development and related projects that require appropriate mediation strategies if soil or groundwater contamination is encountered during project grading and construction.

Policy ER-1.4. Prohibit the discharge of toxins, debris, refuse, and other contaminants into watercourses, other drainages, water bodies, and groundwater basins. Work with appropriate entities to ensure the cleanup of contamination of existing water resources.

Policy ER-3.2. Incorporate natural drainage systems (vegetated swales, small ponds, etc.) into developments, where appropriate and feasible, that offer opportunities for groundwater recharge.

Policy ER-3.3. Retain stormwater and runoff at or near the site of generation for percolation into the aquifer to conserve it for future uses and to mitigate adjacent flooding.

Policy ER-4.2. Avoid altering floodways or channelization wherever possible; however, limit alterations to those that meet the following criteria:

- Alterations necessary for the protection of public health and safety only after all other options are exhausted
- Alterations essential to public service projects where no other feasible construction method or alternative project location exists
- Projects where the primary function is the improvement of fish and wildlife habitats

Policy ER-4.3. Design alterations and improvements to floodways so that they avoid adverse environmental effects to the maximum extent feasible, considering the following environmental factors:

- Stream scour
- Erosion protection and sedimentation
- Wildlife habitat and linkages
- Groundwater recharge capability

- Adjacent property
- Natural designs (e.g., soft riparian bottoms and gentle bank slopes, and landscaping with native plants

City of Corona Local Implementation Plan

Under the City's LIP, land development policies pertaining to hydromodification and low-impact development (LID) are regulated for new developments and significant redevelopment projects. The use of LID BMPs in project planning and design is to preserve a site's predevelopment hydrology by minimizing the loss of natural hydrologic processes such as infiltration, evapotranspiration, and runoff detention. These land development requirements are detailed in the County-wide Model Water Quality Management Plan and Technical Guidance Document, approved in May 2011, which cities have incorporated into their discretionary approval processes for new development and redevelopment projects. Within the City's built-out system, runoff ultimately discharges into fully engineered concrete flood control channels. Based on this drainage collection system, projects in the City are not subject to the hydromodification requirements.

Projects are required to comply with the City's LIP requirements in accordance with the LID hierarchy. The LID hierarchy requires new developments and redevelopments to implement BMPs as described in the Technical Guidance Document. The LID hierarchy requires new projects to first infiltrate, then harvest and reuse, then biofilter stormwater runoff from their project sites. In areas where infiltration is determined to be infeasible, harvest and reuse BMPs may prove feasible for projects that incorporate ample landscaping or have high indoor toilet flushing demands (i.e., hotels). For areas that cannot infiltrate or use harvest and reuse systems, projects will be able to biofilter stormwater through biofiltration BMPs, such as vegetated swales and bioretention basins.

City of Corona Municipal Code

The Corona Municipal Code addresses hydrology and water quality issues through Chapter 13.27, Stormwater Management and Discharge Controls. The purpose of this chapter is to protect the future health, safety and general welfare of the City's citizens by (City of Corona 2020b):

1. Reducing pollutants in storm water discharges to the maximum extent practicable
2. Regulating illicit connections and discharges to the storm drain system
3. Regulating non-storm water discharges to the storm drain system

The enforcement of this chapter is intended to protect and enhance the water quality of City watercourses, water bodies, groundwater, and wetlands in a manner consistent with the CWA.

The Corona Municipal Code addresses floodplain issues through Title 18, Floodplain Management. The purpose of this title is to promote the public health, safety, and general welfare and to minimize public and private losses due to flood conditions in specific areas. To accomplish its purposes, this title includes provisions for the following (City of Corona 2020c):

1. Restricting or prohibiting uses which are dangerous to health, safety and property due to water or erosion hazards or which result in damaging increases in erosion or in flood heights or velocities
2. Requiring that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction
3. Controlling the alteration of natural flood plains, stream channels and natural protective barriers which help accommodate or channel flood waters
4. Controlling filling, grading, dredging and other development which may increase flood damage
5. Preventing or regulating the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards in other areas

Corona Groundwater Management Plan

A Groundwater Management Plan was prepared for the City in June 2008. The City is the water service provider for its constituents, and the Groundwater Management Plan was adopted in accordance with Assembly Bill 3030 to address management for groundwater supply and quality to sustain beneficial uses.

Currently, coordinated efforts are required to manage the Coldwater and Bedford Basins between the various agencies with jurisdiction over the area. The agencies that manage the Coldwater and Bedford Basins include the City and Temescal Valley Water District, while Elsinore Valley Municipal Water District manages the remainder of the Elsinore Basin outside the Coldwater and Bedford Basins.

3.10.3 Thresholds of Significance

According to Appendix G of the California Environmental Quality Act (CEQA) Guidelines, the project would normally have a significant effect on the environment if the project would:

1. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.
2. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.
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:
    a. Result in substantial erosion or siltation on- or off-site.
    b. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite.

c. 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.
d. Impede or redirect flood flows.

4. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.
5. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

3.10.4 Environmental Analysis

3.10.4.1 Threshold 1: Water Quality Standards

Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Impact Analysis

Construction

The projects identified in the 2018 RWMP include water storage tanks, pump stations, and distribution pipelines. Construction activities would have the potential to result in substantial additional sources of polluted runoff, which could have short-term impacts on surface water quality through activities such as excavation and trenching, grading, and stockpiling of soils and materials; repaving; and removing vegetation.

Construction of the project would involve the use of heavy-duty machinery for surface preparation, excavation, surface restoration, and construction of aboveground facilities. The main pieces of equipment that may be used during construction include track-mounted excavators, backhoes, front-end loaders, a paver, forklifts, cranes, industrial saws, and welders. Excavated soils that are suitable would be stockpiled and reused for backfilling the trench. Unusable soil would be hauled off site for disposal. Pollutants associated with these construction activities that could result in water quality impacts include soils, debris, other materials generated during clearing, fuels, and other fluids associated with the equipment used for construction, other hazardous materials, and asphalt materials.

These pollutants could impact water quality during construction if they are washed off site by stormwater or non-stormwater or are blown or tracked off site and could result in significant short-term impacts to water quality from uncontrolled sediment and pollutants in stormwater runoff.

State and local regulations would effectively reduce construction stormwater runoff impacts from the project. The City's Grading Ordinance contains expanded requirements for grading, site erosion control, and NPDES requirements. This ordinance affects grading construction sites of any size. In addition, projects resulting in 1 acre or more of soil disturbance are required to comply

with the Construction General Permit and associated local NPDES regulations to ensure that the potential for soil erosion is minimized, which requires the preparation of a SWPPP.

The SWPPP must describe construction BMPs that address pollutant source reduction, and provide measures and controls necessary to mitigate potential pollutant sources.

Construction-related BMPs include but are not limited to the following:

- Proper storage, use, and disposal of construction materials
- Regular removal of sediment from surface runoff before it leaves the site by silt fences or other similar devices around the site perimeter, with particular attention to protecting impaired water bodies listed on the 303(d) list for sediment and protecting downstream environmentally sensitive habitats such as wetlands
- Protection of storm drain inlets on site or downstream of the construction site to eliminate entry of sediment
- Stabilization of cleared or graded slopes
- Diversion of runoff from uphill areas around disturbed areas of the site
- Prevention of tracking soil off site through use of a gravel strip or wash facilities at exit areas
- Protection or stabilization of stockpiled soils
- Continual inspection and maintenance of specified BMPs through the duration of construction, with special emphasis before and after rain events

With the compliance with these regulations, which include the implementation of construction-period BMPs that would address potential discharges of pollutants to stormwater, any short-term water quality impacts during construction would be minimized to avoid potential violation of any water quality standard or waste discharge requirement or otherwise substantially degrade water quality.

Operation

Operation and maintenance activities would be incorporated into the existing maintenance schedule, which consists of daily maintenance checks for the pump stations and weekly maintenance checks for the water storage tanks and yearly brush clearing at the aboveground facilities. No ground-disturbing activities are expected as a result of project operation. Maintenance activities would introduce the potential for chemicals, nutrients from fertilizer, pesticides and sediment from landscaping, trash and debris, and oil and grease from vehicles. There would be no use of generators or portable pumps in the reclaimed system, which may use petroleum or other fuels and chemicals. However, due to the limited frequency of maintenance activities and brush-clearing activities, pollutant discharge into surface waters would be minimal and would not violate any water quality standards or waste discharge requirements.

Level of Significance Before Mitigation

Implementation of the project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. Impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Because no mitigation measures are required, impacts would remain less than significant.

3.10.4.2 Threshold 2: Groundwater Supplies

Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Impact Analysis

The projects identified in the 2018 RWMP would not involve the use groundwater. The aboveground structures identified in the 2018 RWMP would include the installation of pumps, flow controls, and storage tanks, which would result in an increase in impervious surfaces in the project locations. However, the increase would be minimal and would not impact groundwater recharge. Dewatering of the construction areas may be required at selected sites; however, potential impacts to groundwater supplies would be temporary and would be required to comply with the appropriate permits.

Level of Significance Before Mitigation

Implementation of the 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. Impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Because no mitigation measures are required, impacts would remain less than significant.

3.10.4.3 Threshold 3: Alteration of Existing Drainage Patterns

Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

a) Result in substantial erosion or siltation on- or off-site?

b) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?

c) 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?

d) Impede or redirect flood flows?

Impact Analysis

Construction

Land-disturbing construction activities associated with implementation of the project, such as vegetation clearing, grading, and excavation of project sites, could result in the localized alteration of drainage patterns and the temporarily increase in erosion and sedimentation in the construction area. Construction activities would not alter the course of a stream or river.

Construction phase activities implemented under the project would be required to comply with City's Grading Ordinance. Projects that would disturb more than 1 acre would be subject to NPDES Construction General Permit requirements, including the preparation of a SWPPP and implementation of BMPs to reduce the likelihood of alterations in drainage and adverse effects associated with hydromodification. Standard erosion control measures would be implemented as part of the SWPPP for any project component to minimize the risk of erosion or sedimentation during construction.

With compliance with these regulations, which include the implementation of construction-period erosion and sediment control BMPs, any short-term impacts resulting from alterations of drainage and hydrology during construction would be less than significant.

Operation

Distribution pipelines would be installed underground and, once installed, would be restored to preconstruction conditions and would not interfere with drainage patterns. Storage tanks, pump stations, and flow control improvement projects would be sited above ground and could result in a change in an individual site's drainage patterns. However, the changes would be minor and would

comply with the NPDES permit and the City's LIP so that they are designed to reduce stormwater runoff from projects sites by promoting infiltrating, minimizing impervious surfaces, and requiring a no-net increase in flow. Therefore, operation of the project would not result in substantial erosion or siltation on or off site or increase in the amount of surface runoff or impede or redirect flood flows.

Level of Significance Before Mitigation

Implementation of the project would not result in substantial erosion or siltation on or off site or increase the amount of surface runoff or impede or redirect flood flows. Impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Because no mitigation measures are required, impacts would remain less than significant.

3.10.4.4 Threshold 4: Flood Hazards, Tsunami, or Seiche

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

Impact Analysis

The project would not result in aboveground structures being placed within a FEMA-defined 100-year flood zone as shown on Figure 3.10-1, Source of Supply Projects in 100-Year Flood Zone. Pipelines would be installed underground and, once installed, would not interfere with flood flows. The water storage tanks would be partially buried underground, and the pumps and flow controls would be minor, aboveground structures that would not interfere with flood flows. In addition, a seiche is a phenomenon typically associated with land-locked bodies of water, none of which occur near the project components. The water service area is more than 30 miles from the Pacific Ocean and is outside the tsunami inundation zone.

Level of Significance Before Mitigation

Implementation of the project would not release pollutants due to inundation caused by a flood hazard, tsunami, or seiche. Impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Because no mitigation measures are required, impacts would remain less than significant.

3.10.4.5 Threshold 5: Conflict with Water Quality Basin Plan

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

Impact Analysis

Construction

Project construction activities would involve various types of equipment, such as excavators, bulldozers, scrapers, backhoes, and other earthmoving equipment; dump trucks; trucks; concrete mixers; and paving machines. Excavated soils that are suitable would be stockpiled and reused for backfilling the trench. Unusable soil would be hauled off site for disposal at a licensed facility. Pollutants associated with these construction activities that could result in water quality impacts include soils, debris, other materials generated during excavation and clearing, fuels, and other fluids associated with the equipment used for construction and asphalt materials. Implementation of the project could result in significant short-term water quality impacts from uncontrolled sediment and pollutants in stormwater runoff that could conflict with the policies of the Santa Ana Basin Plan.

To comply with the policies in the Santa Ana Basin Plan, construction projects included in the 2018 RWMP would be required to comply with the City's Grading Ordinance other regulatory requirements related to stormwater runoff to minimize the potential for pollutants to enter receiving waters. As discussed previously, the City's Grading Ordinance contains expanded requirements for grading, site erosion control, and NPDES requirements. This ordinance affects grading construction sites of any size. In addition, development of projects resulting in 1 acre or more of soil disturbance are required to comply with the Construction General Permit and associated local NPDES regulations, which include preparation of a SWPPP, to ensure that the potential for soil erosion is minimized. The SWPPP must identify BMPs that the discharger would actively use to protect stormwater runoff from pollutants and the placement of those BMPs to ensure stormwater would not leave active construction sites. Construction-related BMPs are discussed in Section 3.10.4.1. These measures ensure that construction not obstruct or conflict with the implementation of the Santa Ana Basin Plan or the Santa Ana Watershed Action Plan.

Operation

Operation and maintenance activities would be incorporated into the existing maintenance schedule, which consists of daily maintenance checks for the pump stations and weekly maintenance checks for the water storage tanks and yearly brush clearing at aboveground facilities. No ground-disturbing activities are expected as a result of project operation. Maintenance activities

would introduce the potential for chemicals, nutrients from fertilizer, pesticides and sediment from landscaping, trash and debris, and oil and grease from vehicles. There would be no use of generators or portable pumps in the reclaimed system, which may use petroleum or other fuels and chemicals. However due to the limited frequency of maintenance activities and brush-clearing activities, pollutant discharge would be minimal and would not obstruct or conflict with the implementation of the Santa Ana Basin Plan or the Santa Ana Watershed Action Plan.

Level of Significance Before Mitigation

Implementation of the project would not conflict with or obstruct implementation of a Water Quality Control Plan or Sustainable Groundwater Management Plan. Impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Because no mitigation measures are required, impacts would remain less than significant.

3.10.5 Cumulative Impacts and Mitigation

3.10.5.1 Cumulative Threshold 1: Water Quality Standards

The geographic context for the analysis of cumulative impacts with regard to water quality standards is the Santa Ana Watershed. Future growth and redevelopment in the water service area would result in an increase in impermeable surfaces and an increase of runoff of stormwater pollutants contributing to a cumulative increase in impacts to water quality. Similar to the project, future development would be subject to federal, state, and local applicable regulations and would be designed to reduce the discharge of stormwater pollutants and to improve water quality. With the cumulative projects' compliance with applicable laws and regulations and their incorporation of required construction and operational BMPs, a significant cumulative impact would not occur. Therefore, the project's contribution would not be cumulatively considerable.

3.10.5.2 Cumulative Threshold 2: Groundwater Supplies

The geographic context for the analysis of cumulative impacts with regard to groundwater supplies and recharge is the Middle Santa Ana River Groundwater Basin. A significant cumulative impact related to groundwater supplies and recharge would occur if development in the Middle Santa Ana River Groundwater Basin would increase the amount of impervious surface in the water service area, which would decrease the amount of recharge received by the groundwater table and decrease groundwater supplies. Therefore, increased impervious areas associated with construction of cumulative development projects would result in a significant cumulative impact to groundwater supplies and recharge. However, the project would result in a nominal amount of impervious

surface that would not impact groundwater recharge. Therefore, the project's contribution would not be cumulatively considerable.

3.10.5.3 Cumulative Threshold 3: Alteration of Existing Drainage Patterns

The geographic context for the analysis of cumulative impacts with regard to drainage alteration is the Santa Ana Watershed. Future growth and redevelopment in the water service area would result in an increase in impervious surfaces, which has the potential to result in an increase in stormwater flows. However, future development would be subject to federal, state, and local regulations including the NPDES permit that are designed to reduce stormwater runoff from project sites by promoting infiltration, minimizing impervious, and requiring a no-net increase in flows over the existing condition through hydromodification processes. Any short-term impacts resulting from alterations of drainage and hydrology would be minimized with the incorporation of appropriate construction BMPs and operational compliance with the NPDES permit and City's LIP. Therefore, the project's contribution would not be cumulatively considerable.

3.10.5.4 Cumulative Threshold 4: Flood Hazards, Tsunami, or Seiche

The geographic context for the analysis of cumulative impacts for exposure inundation by seiche, tsunami, or mudflow is site specific and not cumulative in nature. The exposure of one project to inundation is based on the upstream location of a seiche or mudflow or location on the coast for a tsunami and would not affect the location of another cumulative project. Future development projects that would be constructed in an inundation area would be required to incorporate applicable building standards related to flood hazards to minimize the impacts from these types of events. As stated in Section 3.10.4.4, the project is not in an area with a significant risk associated from inundation by a seiche, tsunami, or mudflow. Therefore, the project's contribution would not be cumulatively considerable.

3.10.5.5 Cumulative Threshold 5: Conflict with Water Quality Basin Plan

The geographic context for the cumulative impact analysis concerning conflict with a Water Quality Basin Plan is the Santa Ana Watershed. Urban development associated with cumulative projects in the Santa Ana Watershed would increase impervious areas and activities that generate pollutants and, consequently, could result in additional impacts to receiving waters. Most development would be subject to NPDES regulations, which would require site design and source control BMPs to control potential effects on water quality and the incorporation of stormwater quality control devices into stormwater collection systems to collect sediment and other pollutants.

The project would not result in significant direct impacts associated with obstruction of the Santa Ana Basin Plan because it would comply with the City's Grading Ordinance, NPDES requirements, and other regulations related to stormwater runoff to minimize the potential for

pollutants to enter receiving waters during project construction and operation. Therefore, the project's contribution would not be cumulatively considerable.

3.10.6 Conclusion

With compliance with the City's Grading Ordinance, Construction General Permit, and local NPDES requirements, any short-term water quality impacts during construction would be minimized to avoid potential violation of any water quality standard or waste discharge requirement or otherwise substantially degrade water quality. Therefore, direct and cumulative impacts would be less than significant.

The project would not involve the use of groundwater and would result in a nominal increase in the amount of impervious services that would not impact groundwater recharge. Direct and cumulative impacts would be less than significant.

Land-disturbing construction activities associated with implementation of the project, such as vegetation clearing, grading, and excavation of project sites, would be conducted in compliance with the City's Grading Ordinance, NPDES, Construction General Permit, and other requirements, including the implementation of construction-period BMPs that would avoid impacts resulting from alterations of drainage and hydrology during construction. In addition, water storage tanks, pump stations, and flow control improvement projects could result in a change in an individual site's drainage patterns. However, the changes would be minor and would comply with the NPDES permit and the City's LIP. Therefore, direct and cumulative impacts would be less than significant.

The project would not result in aboveground structures being placed in a FEMA-defined 100-year flood zone. In addition, no projects identified in the 2018 RWMP would occur in an area susceptible to seiche or tsunami. Direct and cumulative impacts would less than significant.

Implementation of the project would not conflict with or obstruct implementation of a Water Quality Control Plan or Sustainable Groundwater Management Plan. Construction projects identified in the 2018 RWMP would be required to prepare a SWPPP that would identify BMPs designed to protect stormwater runoff from pollutants and to ensure stormwater would not leave active construction sites. These measures would ensure that the project would not obstruct or conflict with the implementation of the Santa Ana Basin Plan or the Santa Ana Watershed Action Plan.



Source: County of Riverside Imagery 2016.

Harris & Associates

N

0 2,000 4,000

Feet

Figure 3.10-1

Source of Supply Projects in 100-Year Flood Zone

City of Corona 2018 Reclaimed Water Master Plan

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3.11 Land Use and Planning

This section discusses the potential impacts to land use and planning in the City of Corona's (City's) water service area that may result from the implementation of the 2018 Reclaimed Water Master Plan (project or 2018 RWMP). The analysis in this section is based in part on the following information: City of Corona 2020–2040 General Plan (City of Corona 2020).

3.11.1 Environmental Setting

The water service area is in the western portion of the County of Riverside and includes the unincorporated communities of El Cerrito, Coronita, and parts of Temescal Canyon. The water service area encompasses approximately 39 square miles and is bounded by the neighboring Cities of Norco and Eastvale to the north and the City of Riverside to the northeast. The eastern portion of the water service area is generally bounded by unincorporated County of Riverside, including the unincorporated community of Home Gardens. The southern and western portions of the water service area are bounded by the Cleveland National Forest and other County of Riverside lands. The Prado Flood Control Basin is adjacent the City's northwestern corner.

Table 3.11-1 and Figure 3.11-1, Existing Land Uses, show a summary of the existing land uses in the water service area.

Table 3.11-1. Existing Land Use Summary

Description	Code	Number of Parcels	Acreage
Agriculture	AG	32	708
Commercial	C	851	1,090
Commercial – Office	CP	221	131
Flood Control	FC	218	1,462
Industrial General	GI	436	2,124
Institutional	I	169	723
Light Industrial	LI	581	927
Multiple-Family Residential	MFR	4,466	789
Multiple-Family Residential Mobile Home Park	MFR-MH	14	97
Passive Open Space	OS-P	946	1,736
Recreational Open Space	OS-R	120	984
Public/Quasi-Public	QP	56	127
Rural Residential	R/R	39	112
Right-of-Way	ROW	231	324
Single-Family Residential	SFR	32,731	7,154
Utility	U	4	4
Vacant Agriculture	VA	7	93
Vacant Commercial	VC	39	33

Table 3.11-1. Existing Land Use Summary

Description	Code	Number of Parcels	Acreage
Vacant Industrial	VI	76	378
Vacant Residential	VR	383	2,233
Unknown	—	211	75
	Total	**41,831**	**21,304**

Source: City of Corona 2018.

3.11.2 Regulatory Setting

This section describes the federal, state, regional, and local regulatory framework adopted to protect land use and planning.

3.11.2.1 Federal

There are no federal regulations related to land use and planning.

3.11.2.2 State

State Planning Law and California Complete Streets Act

State Planning Law (California Government Code, Section 65300) requires every city in California to adopt a comprehensive, long-term General Plan for physical development of the city and its sphere of influence. A General Plan should consist of an integrated and internally consistent set of goals and policies that are grouped by topic into a set of elements and are guided by a citywide vision. State law requires that a General Plan address eight required elements (Land Use, Circulation, Housing, Conservation, Open Space, Noise, Safety, and Environmental Justice), but allows some discretion on the arrangement and content. Additionally, each of the specific and applicable requirements in the State Planning Law should be examined to determine if there are environmental issues in the community that the General Plan should address, including but not limited to hazards and flooding.

Additionally, on September 30, 2008, Assembly Bill 1358, the California Complete Streets Act, was signed into law, becoming effective January 1, 2011. Assembly Bill 1358 places the planning, designing, and building of complete streets into the larger planning framework of the General Plan by requiring jurisdictions to amend their Circulation Elements to plan for multimodal transportation networks.

3.11.2.3 Regional

Southern California Association of Governments

The Southern California Association of Governments (SCAG) is a council of governments representing the Counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and

Ventura. SCAG is the federally recognized metropolitan planning organization for this region, which encompasses over 38,000 square miles. SCAG is a regional planning agency and a forum for addressing regional issues concerning transportation, the economy, community development, and the environment. SCAG is also the regional clearinghouse for projects requiring environmental documentation under federal and state law. In this role, SCAG reviews proposed development and infrastructure projects to analyze their impacts on regional planning programs. As the Southern California region's metropolitan planning organization, SCAG cooperates with the South Coast Air Quality Management District, California Department of Transportation, and other agencies in preparing regional planning documents. SCAG has developed regional plans to achieve specific regional objectives. The plans most applicable to the project are discussed below.

High-Quality Transit Areas

With the adoption of the 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (2016–2040 RTP/SCS), SCAG has designated high-quality transit areas. A high-quality transit area is generally a walkable transit village or corridor that is within one-half mile of a well-serviced transit stop or a transit corridor with 15-minute or less service frequency during peak commute hours. The overall land use pattern of the 2016–2040 RTP/SCS focuses on jobs and housing in the region's designated high-quality transit areas (SCAG 2016). The City is designated as a SCAG High-Quality Transit Area Eligible Jurisdiction.

Regional Transportation Plan/Sustainable Communities Strategy

On April 7, 2016, SCAG adopted the 2016–2040 RTP/SCS, which encompasses three principles that work as the key to the region's future: mobility, economy, and sustainability. The 2016–2040 RTP/SCS provides a blueprint for improving quality of life for residents by providing more choices for where they will live, work, and play and how they will move around (SCAG 2016).

Western Riverside County Multiple Species Habitat Conservation Plan

The Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), which is administered by the Western Riverside County Regional Conservation Authority, is a comprehensive, multi-jurisdictional plan that addresses biological and ecological diversity by conserving species and associated habitats while allowing approval of development in Western Riverside County (County of Riverside 2003).

The MSHCP functions as a Habitat Conservation Plan pursuant to Section 10(a)(1)(B) of the federal Endangered Species Act (FESA) and as a Natural Community Conservation Plan pursuant to California's Natural Community Conservation Planning Act. The MSHCP provides a framework for the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) to grant take authorization (i.e., incidental take permits) for species covered

by the MSHCP that are FESA or California Endangered Species Act listed as threatened or endangered; take of these species without a permit would be unlawful.

The MSHCP covers 146 species, not all of which are FESA or California Endangered Species Act listed. However, mitigation for impacts to listed and non-listed species may be required pursuant to the California Environmental Quality Act (CEQA) or other regulatory processes, and the MSHCP Conservation Area provides an avenue for this mitigation. Furthermore, should any of the non-listed covered species be subsequently FESA or California Endangered Species Act listed, take authorization may be granted through the MSHCP framework.

The MSHCP was approved and permits were issued by the USFWS and CDFW in 2004. The MSHCP Plan Area encompasses approximately 1.26 million acres (approximately 1,967 square miles) in Western Riverside County and addresses 146 sensitive plant and animal species and the vegetation communities on which they depend. In total, 14 animal species and 11 plant species are designated by the USFWS as federally listed under FESA. Several of these species also have federally designated critical habitat within the MSHCP jurisdiction (USFWS 2020). The MSHCP encompasses the City and many other city, county, and state entities. It should be noted that the listing status of plants and animals may change over time, with species added or removed from listing. The Biological Resources Technical Report prepared for the project describes the species used to define the original planning subunits (Appendix C).

The MSHCP originally set a target Conservation Area of 500,000 acres for Western Riverside County that included the following: (1) conservation of existing publicly owned lands; (2) voluntary acquisition of privately held lands by the cities, the county, or other involved agencies; (3) voluntary acquisition of privately held lands by state or federal agencies; and (4) contribution from public and private development. The Implementing Agreement for the MSHCP between the City and other appropriate implementing agencies outlined a strategy for assembling the 500,000-acre MSHCP Conservation Area. Local implementing agencies would be responsible for contributing approximately 97,000 acres of Additional Reserve Lands through the development review process. If it is determined that all or a portion of a property is needed for inclusion as Additional Reserve Lands, various incentives may be available to the property owner in lieu of or in addition to monetary compensation in exchange for conveyance of property interest, such as development rights.

Approval of the MSHCP and execution of the Implementing Agreement by the USFWS and CDFW allows the agencies, including the City, to issue take authorizations. Issue of take authorization to the City would allow implementation of land use decisions consistent with the MSHCP without project-by-project review and permitting by the USFWS and CDFW.

3.11.2.4 Local

City of Corona 2020–2040 General Plan and Zoning Ordinance

The City of Corona 2020–2040 General Plan was adopted in June 2020 and presents a vision for the City's future and a strategy to make that vision a reality. The City of Corona 2020–2040 General Plan contains the following elements: Land Use; Housing; Community Design; Historic Resources; Economic Development; Parks, Recreation, Cultural Arts, and Education; Circulation; Infrastructure and Utilities; Public Safety; Noise; Healthy Community; and Environmental Resources. The City of Corona 2020–2040 General Plan provides the basis for land use designations in the City. According to the City of Corona 2020–2040 General Plan, "the zoning map should be consistent with the General Plan Land Use Plan and the Zoning Code should be consistent with the land use classification system and density/intensity and design and development policies." The Zoning Ordinance, Title 17 of the Corona Municipal Code, is one of the primary means of implementing the City of Corona 2020–2040 General Plan (City of Corona 2020).

Corona Municipal Airport Land Use Plan

Corona Municipal Airport is in the northwestern portion of the City on a 100-acre site that is leased as part of a master recreational lease between the City and the U.S. Army Corps of Engineers. The northwestern part of the City and portions of the City are in the Airport Influence Area, which is defined as the area in which current or future airport-related noise, overflight, safety, or airspace protection factors may significantly affect land uses or require restrictions on those uses. The Airport Influence Area constitutes the area where certain land use actions are subject to Airport Land Use Commission review. The Riverside County Airport Land Use Commission has implemented specific compatibility criteria for land uses within the general vicinity of the airport.

3.11.3 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a significant impact related to land use and planning would occur if the project would (CEQA Guidelines, Section 15000 et seq.):

1. Physically divide an established community
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

3.11.4 Environmental Analysis

3.11.4.1 Threshold 1: Physical Division of Established Community

Would the project physically divide an established community?

Impact Analysis

Construction and operation of the projects identified in the 2018 RWMP would occur in the water service area. Proposed distribution pipelines would be underground. Aboveground facilities, such as proposed water storage tanks, booster pump stations, and flow control improvements, would be in existing rights-of-way (ROWs) or adjacent to existing infrastructure. The facilities would be located and designed with minimal disturbance to existing and planned uses in the established community. Therefore, construction and operation of the project would not physically divide existing communities in the water service area.

Level of Significance Before Mitigation

Implementation of the project would not physically divide an established community. No impact would occur.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Because no mitigation measures are required, no impact would occur.

3.11.4.2 Threshold 2: Conflict with Land Use Plan, Policy, or Regulation

Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Impact Analysis

The following discussion addresses the project's consistency with applicable land use plans, policies, and regulations.

City of Corona 2020–2040 General Plan

The City of Corona 2020–2040 General Plan presents a vision for the City's future and provides a framework for the City's physical, economic, social, and environmental development, addressing all geographic areas in the City and those that may be served by the City in the future. Table 3.11-2 identifies the City of Corona 2020–2040 General Plan goals and policies that are relevant to the project and provides an evaluation of the project's consistency with them. Consistent with

Appendix G of the CEQA Guidelines, only the goals, objectives, and policies adopted for the purpose of avoiding or mitigating an environmental effect are discussed in Table 3.11-2.

Table 3.11-2. Project Consistency with Relevant City of Corona 2020–2040 General Plan Policies

City of Corona 2020–2040 General Plan Goal/Objective/Policy	Project Consistency Evaluation
Land Use Element	
Policy LU-4.5. Manage the timing of development and allow development to occur only when public infrastructure and services needed to support that development are available, will be provided concurrently, or are committed to be provided within a reasonable time frame.	**Consistent.** The project would expand and improve the City's reclaimed water program and implement system improvements to better serve existing and future City demands.
Policy LU-15.4. Ensure that the City's public buildings, sites, and infrastructure are designed to be compatible in scale, mass, character, and architecture with the district and neighborhood in which they are located and pertinent design and development characteristics specified by this plan.	**Consistent.** The project includes the operation of belowground pipelines and aboveground facilities, including the Chase Tank and Chase Booster Pump Station, WRCRWA Booster Pump Station, and WRCRWA Flow Control Improvements Projects. Upon completion of construction, pipelines would be buried underground, trenches would be backfilled with on-site material, and the surface elevation would be restored to match the original ground surface and pavement elevations. The Chase Booster Pump Station and the WRCRWA Booster Pump Station would include aboveground turbine pumps necessary to deliver reclaimed water from reclamation treatment plants to the reclaimed system, and lift water from lower zones to the higher zones. The WRCRWA Flow Control Improvements would include aboveground flow control valves and flow meters to manage the flow of reclaimed water. These facilities would be colored purple because the City uses purple pipes to distinguish reclaimed water facilities from potable water infrastructure. These facilities would have a low profile and would be relatively small in nature. In addition, the Chase Tank would be partially buried based on the elevations of the project location. Implementation of Mitigation Measure AES-1 would require the development of a Landscaping Plan, which would require visual screening of aboveground facilities from public views.
Policy LU-16.3. Protect viewsheds by prohibiting the placement of electrical transmission lines, substations, and other types of overhead or at grade heavy infrastructure into public open space or other sensitive areas.	**Consistent.** Project components include water storage tanks, pump stations, and distribution pipelines that are primarily in or adjacent to existing facilities or public ROWs and would not be constructed in public open space or other sensitive areas.
Policy LU-16.5. Require that improvements required to be placed in open space areas (e.g., reservoirs, lighting, and other infrastructure) be designed to minimize the impact on the landscape, avoid obstructing viewsheds, and be shielded to the extent feasible by landscaping, trees, and other natural forms.	**Consistent.** The projects identified in the 2018 RWMP would be confined to existing facilities or easements or in existing ROWs and would be designed to minimize the impact on the landscape and avoid obstructing viewsheds. Distribution pipelines would be buried underground, trenches would be backfilled with on-site material, and surface elevation would be restored to match the original ground surface and pavement elevations. The aboveground facilities would have a low profile and would be relatively small in nature. In addition, the Chase Tank would be partially buried based on

Table 3.11-2. Project Consistency with Relevant City of Corona 2020–2040 General Plan Policies

City of Corona 2020–2040 General Plan Goal/Objective/Policy	Project Consistency Evaluation
	the elevations of the project location. Furthermore, implementation of Mitigation Measure AES-1 would require the development of a Landscaping Plan, which would require visual shielding of aboveground facilities to the extent feasible.
Policy LU-23.4. Review proposed projects within the airport influence area of the Corona Municipal Airport for consistency with applicable airport land use compatibility plan policies adopted by the Riverside County Airport Land Use Commission and City of Corona.	**Consistent.** The following projects identified in the 2018 RWMP would be constructed in the Airport Influence Area of the Corona Municipal Airport: Monica, Klug, Citation, Glider, Helicopter, Cessna, Airport Circle, and Jenk small distribution pipelines and the WRCRWA Flow Control Improvements project. These projects would be outside the 60-decibel contour lines and would not be in the Airport Safety Zone.
Historic Resources Element	
Policy HR-1.1. Continue to implement and expand upon, as feasible, the following historic resources management strategies: • A local Corona Historic Register that includes significant "Landmark" properties, "Historic Districts," and "Historical Markers" as prescribed in the Corona Municipal Code. • A Corona Heritage Inventory that includes surveyed properties meeting all of the criteria as prescribed in the Corona Municipal Code to be considered a local historic resource. • Procedures and criteria for determining the eligibility for listing properties on the Corona Historic Register and the Corona Heritage Inventory. • Standards and regulations governing the identification, protection, restoration, maintenance, alteration, relocation, or removal of historic resources.	**Consistent.** As discussed in Section 3.5.4.1, construction that would involve use of vibratory equipment within 40 feet of a historic structure eligible for the NRHP, CRHR, or Corona Register would have the potential to result in damaging vibration levels, which would have the potential to result in a substantial adverse change in a historic resource. Implementation of Mitigation Measure CUL-1 requires that no vibratory equipment be operated within 40 feet of a structure eligible or listed on the NRHP, CRHR, or Corona Register. For structures that have not been previously evaluated, the City Engineer shall consult with a qualified Architectural Historian, approved by the City, to conduct an evaluation of the structure.
Policy HR-3.1. Require appropriate treatment/preservation of archaeological collections in a culturally appropriate manner, in accordance with state and federal standards, and in consultation with interested Native American tribes that have traditional cultural affiliation with the project area and/or the resources affected by the project. **Policy HR-3.2.** Require that development proposals incorporate specific measures to identify, protect, and preserve cultural resources in the planning, environmental review, and development process. **Policy HR-3.3.** Archaeological resources found prior to or during construction shall be evaluated by a qualified archaeologist and appropriate mitigation measures applied, pursuant to Section 21083.2 of CEQA, before the resumption of development activities. Any measures applied shall include the preparation of a report meeting professional standards, which shall be submitted to the appropriate CHRIS [California Historical Resources Information System] information center.	**Consistent.** As discussed in Section 3.5.4.2, the water service area has been identified as moderate to high for cultural resources and tribal cultural resources. Implementation of Mitigation Measure CUL-2 requires that a site-specific archaeological survey be conducted for the individual projects identified in the 2018 RWMP that are in areas that have not been previously developed, that would impact land with visible ground surface, or that may impact built environment resources that meet the age threshold for eligibility. Implementation of Mitigation Measure CUL-3 requires an archaeological and Native American monitoring program for the projects identified in the 2018 RWMP that would result in ground disturbance in areas identified as moderate or high sensitivity for cultural resources and that are within 100 feet of previously recorded archaeological resources. Finally, implementation of Mitigation Measure CUL-4 would provide for the identification and treatment of human remains if found during construction activities.

Table 3.11-2. Project Consistency with Relevant City of Corona 2020–2040 General Plan Policies

City of Corona 2020–2040 General Plan Goal/Objective/Policy	Project Consistency Evaluation
Policy HR-3.4. Any project that involves earth-disturbing activities in an area determined to be archaeologically or culturally sensitive shall require evaluation of the site by a qualified archaeologist. The applicant shall implement the recommendations of the archaeologist, subject to the approval of the City. Planning Department. **Policy HR-3.5.** Any project that involves earth-disturbing activities in an area determined to be archaeologically or culturally sensitive shall require consultation by the applicant with interested federally recognized American Indian Tribe(s) that have a traditional cultural affiliation with the project area and/or the resources affected by the project, for the purposes of determining resources impacts and appropriate mitigation to address such impacts. Applicant shall also arrange for monitoring of earth-disturbing activities by interested federally recognized American Indian Tribe(s) that have a traditional cultural affiliation with the project area and/or the resources affected by the project, if requested. **Policy HR-3.8.** In the event of the discovery of a burial, human bone, or suspected human bone, all excavation or grading in the vicinity of the find shall halt immediately and the area shall be protected and the project applicant immediately shall notify the Riverside County Coroner and comply with provisions of the Health and Safety Code § 7050.5, including PRC § 5097.98, if applicable. If the find is determined to be Native American human remains, the applicant shall consult with the Most Likely Descendent to determine appropriate treatment for such remains.	
Policy HR-3.6. Any project that involves earth-disturbing activities in soil or rock units known or reasonably suspected to be fossil-bearing shall require monitoring by a qualified paleontologist retained by the project applicant for the duration of excavation or trenching. **Policy HR-3.7.** Paleontological resources found prior to or during construction shall be evaluated by a qualified paleontologist, and appropriate mitigation measures applied, pursuant to § 21083.2 of CEQA, before the resumption of development activities. Any measures applied shall include the preparation of a report meeting professional standards, which shall be submitted to the Riverside County Museum of Natural History.	**Consistent.** The water service area contains rock formations with varying levels of paleontological sensitivity. Implementation of the project includes the construction of distribution pipelines, storage tanks, and pump stations that would result in ground disturbance, including excavation, grading, and backfilling, in known and unknown sensitive areas. Implementation of Mitigation Measure GEO-1, which requires paleontological monitoring during construction, would prevent the harm or destruction of potentially valuable paleontological resources and allow these resources to be properly documented and preserved.
Circulation Element	
Policy CE-1.4. Design and employ traffic control measures to ensure City streets and roads function with safety and efficiency.	**Consistent.** The project is anticipated to generate minimal construction traffic, which would be temporary and would not result in long-term degradation in operating conditions on area roadways or at area intersections. During construction, temporary full or partial lane closures may be necessary, especially for distribution pipeline projects. The full or partial lane closures could result in the redistribution of traffic along adjacent and surrounding roadways. During construction, the

Table 3.11-2. Project Consistency with Relevant City of Corona 2020–2040 General Plan Policies

City of Corona 2020–2040 General Plan Goal/Objective/Policy	Project Consistency Evaluation
	City would maintain, to the extent feasible, continuous, unobstructed, safe, and adequate pedestrian and vehicular access to and from public facilities (e.g., public utility stations and community centers). To mitigate this impact, the project would prepare and implement a Construction Traffic Control Plan consistent with Mitigation Measure HAZ-3. Following the installation of the individual projects identified in the 2018 RWMP, affected roadways and driveways would be restored to pre-project conditions. A temporary asphalt material may be installed to allow traffic to use the roadway immediately after construction, followed by a permanent overlay. Once operational, the individual projects would not result in any significant, long-term impacts to the local roadway network.
Policy CE-1.10. Require a traffic analysis to be prepared in accordance with the City's adopted Traffic Impact Study Guidelines and require projects to mitigate impacts on the City's circulation system that exceed the City's adopted service thresholds for near term and future conditions.	**Consistent.** Minimal construction-related traffic and maintenance trips would result from the reclaimed water infrastructure projects; therefore, the project would not result in the need to prepare a traffic analysis or to mitigate impacts to the City's circulation system.
Policy CE-1.12. Consider the effects on transportation systems of public utility improvements, including extensions of underground pipelines and overhead transmission lines and associated utility rights-of-way.	**Consistent.** During construction, temporary full or partial lane closures may be necessary, especially for distribution pipeline projects. The full or partial lane closures could result in the redistribution of traffic along adjacent and surrounding roadways. Depending on the roadways affected, the redistribution of traffic could result in additional delay at one or more roadway segments or intersections. Therefore, project construction-related activities could result in intermittent decrease to the level of service in the local or regional transportation system. The project would prepare and implement a Construction Traffic Control Plan pursuant to Mitigation Measure HAZ-3 to minimize the effect on transportation systems. Following the installation of the individual projects identified in the 2018 RWMP, affected roadways and driveways would be restored to pre-project conditions. Once operational, the individual projects identified in the 2018 RWMP would not result in effects to the transportation system.
Policy CE-1.13. Ensure that, to the extent possible, all pipelines and electrical transmission lines are placed underground.	**Consistent.** Pipeline projects identified in the 2018 RWMP would be buried underground. Trenches would be backfilled with on-site material, and the surface elevation would be restored to match the original ground surface and pavement surface elevations.
Infrastructure and Utilities Element	
Policy IU-5.8. During construction projects, ensure compliance with all terms and conditions outlined in the NPDES [National Pollutant Discharge Elimination System] permit, including the implementation of the latest best management practices and determination of need for any additional water quality management plans to reduce pollutants and urban runoff flows to the maximum extent practicable.	**Consistent.** Construction of the projects identified in the 2018 RWMP would involve the use of heavy-duty machinery for surface preparation, excavation, surface restoration, and construction of aboveground facilities. Pollutants associated with construction activities that could result in water quality impacts include soils, debris, other materials generated during clearing, fuels and other fluids associated with the equipment used for construction, other hazardous materials,

Table 3.11-2. Project Consistency with Relevant City of Corona 2020–2040 General Plan Policies

City of Corona 2020–2040 General Plan Goal/Objective/Policy	Project Consistency Evaluation
	and asphalt materials. The project would employ BMPs that address pollutant source reduction and provide measures and controls necessary to mitigate potential pollutant sources. Construction-related BMPs include but are not limited to the following: • Proper storage, use, and disposal of construction materials • Regular removal of sediment from surface runoff before it leaves the site by silt fences or other similar devices around the site perimeter, with particular attention to protecting impaired water bodies listed on the 303(d) list for sediment and protecting downstream environmentally sensitive habitats, such as wetlands • Protection of storm drain inlets on site or downstream of the construction site to eliminate entry of sediment • Stabilization of cleared or graded slopes • Diversion of runoff from uphill areas around disturbed areas of the site • Prevention of tracking soil off site through use of a gravel strip or wash facilities at exit areas • Protection or stabilization of stockpiled soils • Continual inspection and maintenance of the specified BMPs throughout the duration of construction, with special emphasis before and after rain events
Policy IU-5.2. Reduce pollutant loading through passive treatment systems such as vegetated filter strips, grass swales, and infiltration/ sedimentation areas in suitable open space areas, overland flow channels, and landscaping adjacent to parking lots and streets.	**Consistent.** The new facilities would be incorporated into the existing maintenance schedule, which consists of daily maintenance checks for the pump stations and weekly maintenance checks for the water storage tanks, and would not contribute to water quality contamination. The use of passive treatment systems would be implemented as necessary on a project-by-project basis.
Public Safety Element	
Policy PS-1.2. In areas subject to seismic and geologic hazards, require development proposals to include a geotechnical hazard analysis and specific mitigations to reduce risks to acceptable levels as a condition of approval.	**Consistent.** Projects identified in the 2018 RWMP would be designed to withstand seismic conditions anticipated to occur in the water service area. In addition, Mitigation Measure GEO-1 would require the completion of site-specific geotechnical engineering studies to identify potential constraints and recommend methods to construct, install, and design water storage tanks, booster pump stations, flow controls, and distribution pipelines to minimize risks from seismic and geological risks.
Policy PS-1.4. Require adherence to the latest California Building Codes and associated regulations in the City's Municipal Code; update local codes and development requirements periodically for the latest best practices.	**Consistent.** The project would comply with the California Building Code and the Corona Municipal Code.
Policy PS-2.4. Locate, when feasible, new essential public facilities outside of flood zones; for those that must remain or	**Consistent.** No projects identified in the 2018 RWMP would be in a flood zone.

Table 3.11-2. Project Consistency with Relevant City of Corona 2020–2040 General Plan Policies

City of Corona 2020–2040 General Plan Goal/Objective/Policy	Project Consistency Evaluation
are built in flood hazard zones, harden structures to maintain the structural and operational integrity of such public facilities in case of flooding.	
Policy PS-9.4. Maintain safe and accessible evacuation routes throughout the community; take precautions and ensure backup or mitigations for routes crossing high hazard areas (e.g., flood, seismic, high fire, etc.).	**Consistent.** During construction, temporary full or partial lane closures may be necessary, especially for distribution pipeline projects. The full or partial lane closures could result in the redistribution of traffic along adjacent and surrounding roadways. As construction progresses, access for emergency vehicles could be impaired as result of reduced roadway widths (or capacity) and increased volumes of construction-related traffic or redistributed traffic. As a result, construction could impair or physically interfere with adopted Emergency Response Plans or Emergency Evacuation Plans. To mitigate this impact, the project would prepare and implement a Construction Traffic Control Plan as described in Mitigation Measure HAZ-3. Following the installation of the individual project components, affected roadways and driveways would be restored to pre-project conditions. A temporary asphalt material may be installed to allow traffic to use the roadway immediately after construction, followed by a permanent overlay. Once operational, the individual projects identified in the 2018 RWMP would not result in any significant, long-term impacts to the local roadway network.
Policy PS-10.1. Locate, when feasible, new essential public facilities outside of high fire risk areas; if not feasible, require construction and other methods to harden and minimize damage for existing/planned facilities in such areas.	**Consistent.** The proposed distribution pipelines would be installed underground. For aboveground facilities that are situated in high-risk fire areas, these facilities would maintain adequate City-required brush clearance areas to protect facilities from damage.
Noise Element	
Policy N-1.4. Require municipal vehicles and noise-generating mechanical equipment purchased or used by the City to comply with noise performance standards consistent with the latest available noise reduction technology to the extent practicable and cost-effective.	**Consistent.** As described in Section 3.13.4.1, with the exception of two new pump stations, most of the projects identified in the 2018 RWMP would be passive, new, or upgraded pipelines and water storage facilities and would not result in any new sources of operational noise. The flow of water through underground pipes and water storage does not generate audible noise. The two new booster pump stations would be installed with an enclosure and would not exceed the daytime threshold of 55 A-weighted decibels beyond 55 feet from the pump stations.
Policy N-2.7. Require construction activities that occur in close proximity to existing "noise sensitive" uses, including schools, libraries, health care facilities, and residential uses, to limit the hours and days of operation in accordance with the City Noise Ordinance.	**Consistent.** Construction of the projects identified in the 2018 RWMP would result in a temporary increase in the ambient noise environment and would be noticeably audible to existing nose sensitive uses in the vicinity of the active project. Implementation of Mitigation Measure NOI-1 would require construction noise reduction measures that would ensure compliance with the City's Noise Ordinance.

Table 3.11-2. Project Consistency with Relevant City of Corona 2020–2040 General Plan Policies

City of Corona 2020–2040 General Plan Goal/Objective/Policy	Project Consistency Evaluation
Healthy Community Element	
Policy HC-2.5. Require the preparation of air quality, noise, and vibration technical studies to determine the impact of proposed new development on adjacent and surrounding land uses and to identify the appropriate measures required to mitigate such impacts.	**Consistent.** An Air Quality Impact Analysis (Appendix B) and Noise Impact Analysis (Appendix F) were prepared for the project.
Environmental Resources Element	
Policy ER-1.2. Require all public and private grading and construction activities to minimize adverse impacts on the City's water resources through the use of best management practices, as established and updated from time to time by the City of Corona.	**Consistent.** The project would implement construction-period BMPs, which include the implementation of erosion and sediment control BMPs to prevent contamination of hydrologic resources and minimize impacts on water resources.
Policy ER-1.4. Prohibit the discharge of toxins, debris, refuse, and other contaminants into watercourses, other drainages, water bodies, and groundwater basins. Work with appropriate entities to ensure the cleanup of contamination of existing water resources.	**Consistent.** Operations and maintenance activities would include the continuation of the existing condition assessment program of pump stations and water storage tanks. No ground disturbing activities are expected. In addition, there would be no use of generators or portable pumps in the reclaimed system. Operation and maintenance activities would not contribute to water quality contamination.
Policy ER-4.2. Avoid altering floodways or channelization wherever possible; however, limit alterations to those that meet the following criteria: • Alterations necessary for the protection of public health and safety only after all other options are exhausted • Alterations essential to public service projects where no other feasible construction method or alternative project location exists • Projects where the primary function is the improvement of fish and wildlife habitats	**Consistent.** The installation of pipelines, pump stations, water storage tanks, and flow control improvements would be adjacent to existing infrastructure or in existing public ROWs and would not alter floodways or channelize waterways.
Policy ER-5.1. Prohibit encroachment of development into wetlands; provide buffer zones, setbacks, or other effective techniques in project siting and design to minimize direct and indirect effects to wetland habitats.	**Consistent.** Implementation of the project is not expected to impact jurisdictional aquatic resources and would not encroach into wetlands. However, the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline are proposed on undeveloped land that could support jurisdictional aquatic resources, although it is unlikely. Implementation of Mitigation Measures BIO-12 and BIO-13 would minimize direct and indirect effects to wetland habitats.
Policy ER-6.2. Preserve the wildlife and plant species and habitats listed in Tables 4-12 and 4-13 of the Technical Background Report for the General Plan and EIR [Environmental Impact Report] (City of Corona 2020) and those that may be considered by the City of Corona in the future.	**Consistent.** The WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites would contain non-native grassland habitat that could support sensitive plant species listed in Tables 4-12 and 4-13 of the City of Corona 2020–2040 General Plan. In addition, potential indirect impacts to sensitive plant species from implementation of the project include colonization of invasive plant species and fugitive dust. Implementation of Mitigation

Table 3.11-2. Project Consistency with Relevant City of Corona 2020–2040 General Plan Policies

City of Corona 2020–2040 General Plan Goal/Objective/Policy	Project Consistency Evaluation
	Measures BIO-1 through BIO-7 would reduce impacts to less than significant. Non-native grassland vegetation on the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites has the potential to support sensitive animal species, and implementation would result in potentially significant indirect impacts from noise and nighttime lighting on burrowing owl (*Athene cunicularia*) and nesting birds. Implementation of Mitigation Measures BIO-8, BIO-9, and BIO-10 would reduce impacts to less than significant.
Policy ER-6.3. Ensure that new developments and circulation improvement demonstrate compliance with state and federal regulations concerning the status, location, and condition of significant and sensitive biological species and habitats and riparian and riverine corridors. Biological surveys, as required and defined by the Western Riverside County Multiple Species Habitat Conservation Plan, should identify potential impacts on biological resources and include mitigation measures to protect/replace resources in like kind.	**Consistent.** Mitigation Measure BIO-11 requires the preparation of site-specific Biological Resources Survey/Habitat Assessment for the projects identified in the 2018 RWMP that would be located on undeveloped land, including the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline, during the project design phase. The surveys would identify potential impacts on biological resources and include site-specific mitigation measures.
Policy ER-6.4. Ensure that new developments through the development review process adhere to the Western Riverside County Multiple Species Habitat Conservation Plan, the Stephens' Kangaroo Rat Habitat Conservation Plan, and other habitat plans as appropriate to conserve biological diversity through protection of natural communities.	**Consistent.** The project would be consistent with the conservation goals outlined in the Western Riverside County MSHCP. The project's compliance with the Western Riverside County MSHCP is discussed in detail in Section 3.4.4.7.
Policy ER-6.5. Preserve wildlife habitat of significant natural open space areas, including expanding habitat ranges, movement corridors, and nesting sites by adhering to and implementing the core biological linkages identified in the MSHCP for parts of the Any proposed recreational use of those areas such as trails shall be designed to not interfere with the preservation efforts established in the MSHCP.	**Consistent.** Projects identified in the 2018 RWMP would be confined to existing facilities or easements or in existing ROWs. However, potentially significant impacts to one sensitive vegetation community, non-native grassland, could result during the implementation of the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline. Implementation of Mitigation Measures BIO-2 and BIO-3 would reduce potentially significant impacts to sensitive vegetation communities to less than significant. Federally and state-protected nesting birds have the potential to occur on or adjacent to the projects included in the 2018 RWMP, including projects in developed/disturbed land. Implementation of the projects included in the 2018 RWMP would have the potential to impact nesting birds (including raptors) through direct removal of nesting habitat and disturbance to nesting birds from substantial sources of noise generated at the start of new construction during the nesting season. Implementation of Mitigation Measures BIO-8 and BIO-9 would reduce impacts to less than significant. No significant impacts to natural open spaces, including movement corridors, is anticipated. In addition, no recreational use is proposed as part of the project.

Table 3.11-2. Project Consistency with Relevant City of Corona 2020–2040 General Plan Policies

City of Corona 2020–2040 General Plan Goal/Objective/Policy	Project Consistency Evaluation
Policy ER-7.1. Require that public and private construction activities be conducted in a manner to minimize adverse impacts on natural resources and biological resources in proximity to MSHCP conservation areas and adhere to the MSHCP Guidelines pertaining to Urban/Wildlife Interface for drainage, toxics, lighting, noise, invasive barriers, and grading [MSHCP Section 6.4.1].	**Consistent.** The project would be consistent with the conservation goals outlined in the Western Riverside County MSHCP. The projects' compliance with the Western Riverside County MSHCP is discussed in detail in Section 3.4.4.7.
Policy ER-8.5. Conserve the oak tree resources in the City to the extent feasible.	**Consistent.** No oak trees were identified to be impacted by implementation of the project.
Policy ER-9.2. Conserve existing wetlands and wetland functions and values in the Temescal Canyon Wash, Prado Basin, and the Santa Ana River with a focus on conservation of existing riparian, woodland, coastal sage scrub, alluvial fan scrub, and open water habitats.	**Consistent.** The project does not propose development in the Temescal Canyon Plan Area, Santa Ana River, or other regional washes.
Policy ER-9.3. Conserve existing known populations of least Bell's vireo and southwestern willow flycatcher in the Temescal Canyon Area Plan, including at Prado Basin, Santa Ana River, and Temescal Canyon Wash. Maintain existing breeding habitat for these species at Prado Basin, Santa Ana River, and Temescal Wash where applicable to a particular project and location. **Policy ER-9.4.** Conserve and manage suitable habitat for species known to exist in the Temescal Canyon Area Plan of Western Riverside County's Multiple Species Habitat Conservation Plan. **Policy ER-9.5.** Conserve clay soils supporting sensitive plant species known to occur in the Temescal Canyon area, including Munz's onion, Palmer's grappling hook, small-flowered morning glory, long-spined spineflower, thread-leaved brodiaea, small-flowered microseris, and many-stemmed dudleya. **Policy ER-9.6.** Conserve sandy soils co-occurring with chaparral supporting Palomar monkeyflower, known to occur in the Temescal Canyon area. **Policy ER-9.7.** Conserve locations supporting California muhly, heart-leaved pitcher sage, Hall's monardella, and other sensitive plant species that may occur in a wide variety of habitat types within the Temescal Canyon Area Plan. **Policy ER-9.8.** Provide for and maintain connection(s) from the Cleveland National Forest to Prado Basin and the Santa Ana River within Temescal Canyon, providing opportunities for offsite connections to Chino Hills State Park. **Policy ER-9.9.** Conserve upland habitat adjacent to the Temescal Canyon Wash to augment existing upland habitat conservation in the Lake Matthews/Estelle Mountain Reserve areas and provide for contiguous connection of upland habitat blocks from the existing reserve to Temescal Wash. Habitat conservation should focus on blocks of existing	**Consistent.** The project does not propose development in the Temescal Canyon Plan Area, Santa Ana River, or other regional washes.

Table 3.11-2. Project Consistency with Relevant City of Corona 2020–2040 General Plan Policies

City of Corona 2020–2040 General Plan Goal/Objective/Policy	Project Consistency Evaluation
upland habitat east of Temescal Canyon Wash connecting to Lake Matthews/Estelle Mountain Reserve. **Policy ER-9.10.** Conserve floodplain areas supporting sensitive plant species known to occur in Temescal Canyon, including Parry's spineflower, peninsular spineflower, smooth tarplant, and Coulter's matilija poppy. **Policy ER-9.11.** Conserve rocky soils co-occurring with coastal sage scrub, peninsular jumper, or chaparral supporting Payson's jewelflower, known to occur in the Temescal Canyon area. **Policy ER-9.12.** Provide for and maintain a continuous linkage along the Temescal Canyon Wash from the southern boundary of the Temescal Canyon to the Santa Ana River.	
Policy ER-10.1. Maintain the use of the city's Mineral Resource Overlay Zone in the City's Zoning Ordinance to ensure lands having a state classification of MRZ-2 through the Department of Conservation have the opportunity to be made available for mineral materials.	**Consistent.** Utility improvements, such as those identified in the 2018 RWMP, are considered compatible with land uses. In addition, the majority of the projects identified in the 2018 RWMP would be in existing facilities and public ROWs and would not result in substantial land disturbance that would impact existing or future mining operations.
Policy ER-12.3. Establish and strictly enforce controls on land use activities that contain operations or materials that individually or cumulatively add significantly to the degradation of air quality in Corona.	**Consistent.** Project construction and operational emissions of criteria pollutants would not exceed applicable thresholds established to assist maintaining or achieving regional attainment in the South Coast Air Basin. Additional detail is provided in Section 3.3, Air Quality.

Source: City of Corona 2020.

Notes: BMP = best management practice; City = City of Corona; CRHR = California Register of Historic Resources; MSHCP = Multiple Species Habitat Conservation Plan; NRHP = National Register of Historic Properties; ROW = right-of-way; WRCRWA = Western Riverside County Regional Wastewater Authority

SCAG Regional Transportation Plan/Sustainable Communities Strategy

The 2016–2040 RTP/SCS is a long-range visioning plan that balances future mobility and housing needs with goals for the environment, regional economy, social equity and environmental justice, and public health. Ultimately, the 2016–2040 RTP/SCS is intended to help guide transportation and land use decisions and public investments. One of its goals is to protect the environment and health of residents by improving air quality and encouraging active transportation (e.g., bicycling and walking). The 2016–2040 RTP/SCS includes programs, policies, and measures to address air emissions. Measures that help mitigate air emissions are composed of strategies that reduce congestion, increase access to public transportation, improve air quality, and enhance coordination between land use and transportation decisions.

As discussed in Section 3.3.4.2, the project would not result in a significant impact related to criteria pollutant emissions during construction. Because emissions of criteria pollutants under the project would be below the applicable thresholds, which are established to assist with maintaining or achieving regional attainment in the South Coast Air Basin, construction would not result in a

cumulatively considerable contribution to regional acute and long-term health impacts related to nonattainment of the ambient air quality standards. In addition, most of the projects associated with the 2018 RWMP would be passive, new, or upgraded pipelines and storage facilities, which would not result in new sources of operational air pollution. Therefore, the project would be consistent with the 2016–2040 RTP/SCS.

Level of Significance Before Mitigation

As detailed in Table 3.11-2, implementation of the project would conflict with an applicable land use plan, policy, or regulation. Therefore, impacts would be potentially significant.

Mitigation Measures

The project would have potentially significant impact related to the conflict with an applicable land use plan, policy, or regulation. However, the mitigation measures identified in other Program Environmental Impact Report sections, including Mitigation Measures AES-1 (Section 3.1, Aesthetics); BIO-1, BIO-2, BIO-3, BIO-4, BIO-5, BIO-6, BIO-7, BIO-8, BIO-9, BIO-10, BIO-11, BIO-12, and BIO-13 (Section 3.4, Biological Resources); CUL-1, CUL-2, CUL-3, and CUL-4 (Section 3.5, Cultural Resources); GEO-1 (Section 3.7, Geology, Soils, and Paleontological Resources); HAZ-3 (3.9, Hazards and Hazardous Materials); and NOI-1 (Section 3.13, Noise), would reduce impacts to less than significant.

Level of Significance After Mitigation

With implementation of Mitigation Measures AES-1, BIO-1, BIO-2, BIO-3, BIO-4, BIO-5, BIO-6, BIO-7, BIO-8, BIO-9, BIO-10, BIO-11, BIO-12, BIO-13, CUL-1, CUL-2, CUL-3, CUL-4, GEO-1, HAZ-3, and NOI-1, the project would be consistent with the City of Corona 2020–2040 General Plan and would not conflict with an applicable land use plan, policy, or regulation. Impacts would be less than significant.

3.11.5 Cumulative Impacts and Mitigation

3.11.5.1 Cumulative Threshold 1: Physically Divide Established Community

The geographic context for the analysis of cumulative land use impacts is the water service area. Cumulative projects would include the construction of new or widened roadways, airports, railroad tracks, open space areas, or other features that would individually have the potential to physically divide an established community. In addition to these larger projects, smaller cumulative projects could have the effect of forming an access barrier that would physically divide a community. Such impacts would generally be limited to an individual community and would not be cumulative in nature. Multiple projects in the same community could combine to result in a cumulative effect to the division of that community. However, all cumulative projects would be required to comply with the City of Corona 2020–2040 General Plan and undergo development review before

approval. This would ensure that a significant cumulative impact related to the physical division of an established community would not occur. Further, the project does not propose any new land uses that would divide established communities. Therefore, the project, along with the identified cumulative projects, would not result in a cumulative land use impact. The project's contribution would not be cumulatively considerable.

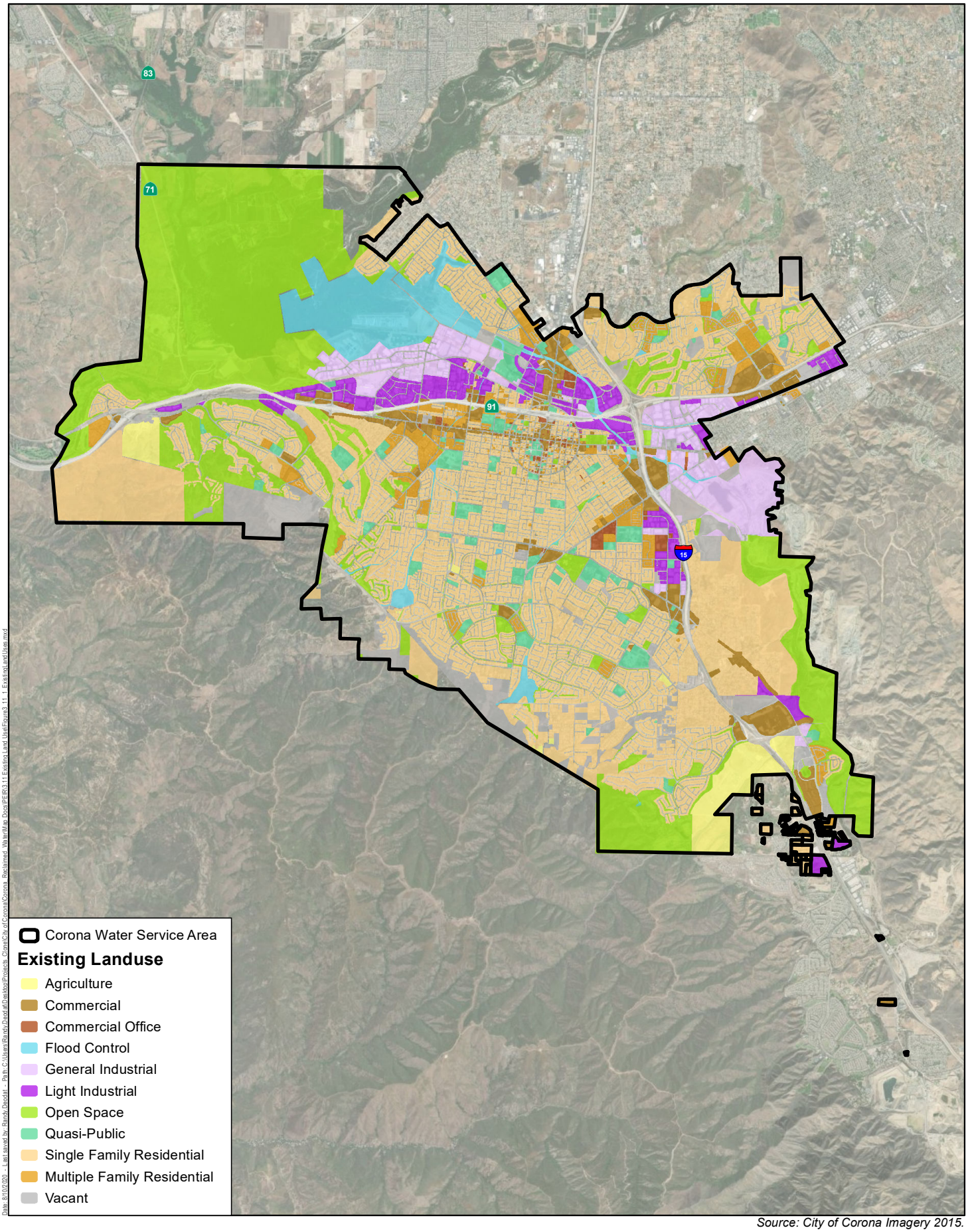
3.11.5.2 Cumulative Threshold 2: Conflict with Land Use Plan, Policy or Regulation

The geographic context for the analysis of cumulative land use impacts is the water service area. A significant cumulative land use impact would occur if future projects would combine to be inconsistent with applicable land use plans or policies adopted to protect the environment. Similar to the project, cumulative projects would be consistent with the existing adopted plans or require mitigation measures to ensure consistency for project approvals to occur. With mitigation, the project would be consistent with the City of Corona 2020–2040 General Plan and 2016–2040 RTP/SCS. Land use factors associated with development of the project would not affect or be affected by approvals of reasonably expected future development elsewhere in the water service area. Therefore, the project, along with the identified cumulative projects, would not result in a cumulative land use impact. The project's contribution would not be cumulatively considerable.

3.11.6 Conclusion

Implementation of the project would not physically divide an established community. Therefore, no direct or cumulative impacts would occur.

Implementation of the project would potentially conflict with the relevant City of Corona 2020–2040 General Plan policies that were adopted to avoid or mitigate an environmental effect as detailed in Table 3.11-1. With the implementation of Mitigation Measures AES-1, BIO-1, BIO-2, BIO-3, BIO-4, BIO-5, BIO-6, BIO-7, BIO-8, BIO-9, BIO-10, BIO-11, BIO-12, BIO-13, CUL-1, CUL-2, CUL-3, CUL-4, GEO-1, HAZ-3, and NOI-1, the project would be consistent with the City of Corona 2020–2040 General Plan. Therefore, direct and cumulative impacts would be less than significant.



Source: City of Corona Imagery 2015.

Harris & Associates

Figure 3.11-1

Existing Land Uses

City of Corona 2018 Reclaimed Water Master Plan

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3.12 Mineral Resources

This section discusses the potential impacts to mineral resources in the City of Corona's (City's) water service area that may result from the implementation of the 2018 Reclaimed Water Master Plan (project or 2018 RWMP). The analysis in this section is based in part on the following information: City of Corona 2020–2040 General Plan (City of Corona 2020a).

3.12.1 Environmental Setting

Mining has been a part of the City's history since 1888, when the Temescal Rock Quarry was opened to furnish rock for streets in Los Angeles and nearby towns. Later decades saw oil and gas drilling in the Prado-Corona Fields and Temescal Canyon. Looking forward, the conservation, extraction, and processing of mineral resources will be essential to meeting the needs of the region, the City's economy, and the industries that depend on them.

3.12.1.1 Mineral Resources

The City is in the Temescal Valley Production Area, an 820-square-mile area designated by the California Geological Survey and bounded by the Santa Ana Mountains to the west and the Perris Plateau to the east. The Temescal Valley Production Area includes the Santa Ana River Valley, Chino Hills, and Jurupa Mountains to the north; the eastern slopes of the Santa Ana Mountains to the east; and the Elsinore Mountains to the west. It also includes the western and southern part of Perris Valley and the drainage of the Santa Margarita River system.

The Temescal Valley Production Area consists of a mix of rugged mountain terrain, rolling hillsides, alluvial valley floors, and river bottoms. Temescal Valley is known for its mineral resource deposits. Portions of the City are designated by the state as a construction aggregate resource area. These mineral resources in the area generally consist of clay and construction aggregates—crushed rock, sand, and gravel. Smaller amounts of silver, lead, zinc, coal, and gypsum have also been identified within the City limits. These mineral resources are briefly summarized below (DOC 1991; CGS 2014):

- **Clay Production**. Currently, one known clay resource site is within the City limits. Discovered in 1975, this site is known as the Dominguez Mine and is south of the Sierra Del Oro Specific Plan area. The bulk of clay goes into the production of roofing and patio tile.
- **Rock Products.** The Temescal Valley Production Area is rich in aggregate resources. Crystalline, sedimentary, and metasedimentary rocks are prevalent and have been designated by the state as significant mineral deposits that have regional importance. Crystalline rocks quarried in this area include quartz latite porphyry, granodiorite, and quartz monzonite. Metasedimentary rocks found include quartzite, argillite, and limestone.

- **Sand and Gravel**. The City's sand and gravel resources include stream deposits and deposits in older geologic formations. Stream deposits include stream channel deposits and floodplain deposits adjacent to the active channel. Sand and gravel are occasionally produced from deposits of intrusive granitic or volcanic rock typically in the hills and mountains east of Temescal Valley.
- **Other Minerals.** Other minerals have been identified in the hills east of Temescal Wash and in the Santa Ana Mountains south of the City. Tin, copper, silver, and gold have been discovered but not in the quantities necessary for economic viability. Quartz latite porphyry, which is used for roofing granules, is found in the area north of Cajalco Road. Additionally, a high-grade silica sand deposit is exposed southeast of the City in the Bedford Canyon Area.

3.12.1.2 Active Mines in the Water Service Area

The City's water service area has been the location for extensive mining in the past. However, many of these mines are no longer in operation. As of 2017, the water service area has 12 active mining operations. Table 3.12-1 lists the active mines, their permits acres, materials mined, reserves, and annual production.

Table 3.12-1. Active Mining Operations in the Water Service Area

Mine Name	Mine ID/RC Case	Permit Acres	Materials Mined	Reserves (million tons)	Max. Annual Production
All American Asphalt	91-33-0005 SMP90-1, SMP2017-0101	263	Sand and gravel	NA	NA
Corona Quarry (CalMat/Vulcan)	91-33-0027 SMP12-001	260	Sand and gravel	400	5 MT
3M Corona	91-33-0016 RCL00136	1,320	Specialty sand	5	0.5–2 MT
Chandler-Coldwater	91-33-0014 RVP00135	75	Sand and gravel	67	0.6 MT
Chandler-Sierra Plant	91-33-0011 SMP00202	198	Sand and gravel	64	2.2 MT
Mobile Sand Company	91-33-0007 SMP00119	75	Sand and gravel	1.3	0.4 MT
Eagle Valley	91-33-0035 SMP00152R1	128	Sand and gravel	65.6	1.6 MT
Mayhew Canyon	91-33-0039 SMP00139R1	N/A	Sand and gravel	46	2.0 MT
Ben's Mine/Mission Clay	91-33-0034 RCL00135	67	Clay	7	0.25 MT
Harlow Quarry/Robertsons	91-33-0061 RCL00118	59	Sand and gravel	13.3	5,000 Tons
Corona Clay Pit/ USA Waste	91-33-0074 SMP00175R1	25	Clay	NA	NA
Glen Ivy No. 1/Werner	91-33-0001 SMP00143	115	Sand and gravel	26.2	0.75 MT

Source: City of Corona 2020b.

Notes: MT = metric tons; NA = not applicable

3.12.1.3 Mineral Resource Classification Zones

The City has been extensively mapped by the California Geological Survey, and lands have been assigned classifications for mineral resources. The Mineral Resources Project classifies lands throughout the state that contain regionally significant mineral resources per the Surface Mining and Reclamation Act (SMARA) as follows:

- **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.

The City is primarily underlain by MRZ-2 lands, which are known to contain valuable mineral resources, specifically construction aggregate and industrial minerals. Although much of this area has already been developed, extensive resources still exist in the Gavilan Hills and the southwestern area of the City. A large portion of the aggregate resources have also been designated by the state as regionally significant.

Figure 3.12-1, Mineral Resources Zones, shows the areas that have been mapped for mineral resources in the water service area.

3.12.2 Regulatory Setting

This section describes the federal, state, and local regulatory framework adopted to protect mineral resources.

3.12.2.1 Federal

There are no applicable federal regulations that apply to mineral resources.

3.12.2.2 State

Surface Mining and Reclamation Act

SMARA was enacted in 1975 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 California Public Resources Code, Section 2710 et seq. Under state law, mining operations are required to obtain permits before starting operations and to 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.

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 cities and counties to incorporate the mapped designations approved by the state in their General Plans.

3.12.2.3 Local

City of Corona 2020–2040 General Plan

The following goals and policies in the City of Corona 2020–2040 General Plan are relevant to mineral resources (City of Corona 2020a).

Environmental Resources Element

Goal ER-10. Protect significant mineral resources that have a state classification of MRZ-2 through the Department of Conservation.

Policy ER-10.2. Allow land classified MRZ-2 and zoned with a MR Overlay to be rezoned for another land use when significant mineral deposits no longer exist, are no longer economically viable to mine, or the conditions of the approved mining permit and/or reclamation plan prohibit any additional mining in a specific area.

Policy ER-10.3. Adopt the making of certain findings required by Section 2764(b) of the Surface Mining and Reclamation Act for land known to have MRZ-2 resources but not protected for mineral materials by City Council resolution.

Policy ER-10.4. Permit through the city's Surface Mine Permit process the extraction of mineral resources or exploration of mining in resource areas identified by the MR Overlay Zone consistent with the general plan land use designation.

Goal ER-11. Accommodate mineral extraction and reclamation activities with an approved surface mine permit in the City provided such activities fully comply with all applicable, federal, state, and local regulations and permits.

Policy ER-11.6. The City shall endeavor to avoid conflicts between urban uses and mineral uses. Analysis of potential conflicts shall be part of the City's planning process. Conflicting or incompatible land uses should not be allowed in mineral resource areas that are designated "MR."

City of Corona Municipal Code

The Corona Municipal Code, Title 19, Surface Mining and Regulations, is intended to regulate surface mining operations and reclamation plans in accordance with SMARA. Title 19 is intended to ensure that (1) subsequent beneficial uses of mined and reclaimed land are promoted and the land is returned to a usable condition; (2) groundwater supply, recreation, watershed, wildlife, range and forage, and aesthetic enjoyment are given appropriate consideration in the planning process; and (3) the production and conservation of mineral resources are encouraged. The title addresses surface mining permits and reclamation plans, minimum site performance standards, annual inspections and financial security, and enforcement. The Corona Municipal Code requires a Mineral Resource Overlay on all lands identified for mineral resource protection in Corona and its sphere of influence. As required by state law, the City adopted required local regulations pursuant Ordinance No. 2386, which was certified by the State Mining and Geology Board in 1999.

3.12.3 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a significant impact related to mineral resources would occur if the project would (CEQA Guidelines, Section 15000 et seq.):

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.
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.

3.12.4 Environmental Analysis

3.12.4.1 Threshold 1: Loss of Availability of Known Mineral Resources

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

Impact Analysis

The water service area is underlain by MRZ-1, MRZ-2, MRZ-3, and MRZ-4 lands. MRZ-2 lands are areas where adequate information indicates that significant mineral deposits are present or there is a high likelihood that their presence exists. In addition, the MRZ-2 lands in the water service area have been designated of either regional (multi-community) or statewide economic significance by the California State Mining and Geology Board.

However, the project proposes to expand the existing reclaimed water services in the water service area. Project components include water storage tanks, booster pump stations, and distribution pipelines. The majority of the project components would be in existing facilities or rights-of-way and would not result in substantial land disturbance that would impact existing mining areas or preclude the future extraction of industrial minerals and construction aggregate. Therefore, implementation of the projects identified in the 2018 RWMP would not result in the loss of availability of a known mineral resource that would be of value to the region or residents of the state.

Level of Significance Before Mitigation

Implementation of the projects in identified in the 2018 RWMP would not result in the loss of availability of a known mineral resource that would be of value to the region or residents of the state. Impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Because no mitigation measures are required, impacts would remain less than significant.

3.12.4.2 Threshold 2: Loss of Availability of Locally Important Mineral Resource Recovery Sites

Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

Impact Analysis

As stated in Section 3.12.4.1, the water service area is primarily underlain by MRZ-2 lands. The City of Corona 2020–2040 General Plan permits the extraction of mineral resources in designated resource areas identified in the Mineral Resource (MR) Overlay Zone.

However, the project proposes to expand the existing reclaimed water services in the water service area. Project components include storage tanks, pump stations, and distribution pipelines. Utility improvements are considered compatible with land uses in the City of Corona 2020–2040 General Plan (City of Corona 2020a). In addition, the majority of the 2018 RWMP project components would be in existing facilities and rights-of-way and would not result in substantial land disturbance that would impact existing or future mining operations. Therefore, implementation of the projects in the 2018 RWMP would not 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.

Level of Significance Before Mitigation

Implementation of the projects identified in the 2018 RWMP would not 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. Impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Because no mitigation measures are required, impacts would remain less than significant.

3.12.5 Cumulative Impacts and Mitigation

3.12.5.1 Cumulative Threshold 1: Loss of Availability of Known Mineral Resources

The geographic context for the analysis of cumulative impacts related to the potential loss of known mineral resources encompasses water service area. As described in Section 3.12.2, Regulatory Setting, the state uses the MRZ system to identify presence and absence conditions for meaningful sand and gravel deposits. Development of cumulative projects on lands designated as MRZ areas could preclude the extraction of industrial minerals and construction aggregate that could result in a significant loss of available mineral resources. The project proposes to expand the existing reclaimed water services in the water service area. The majority of the 2018 RWMP project components would be in existing facilities and rights-of-way and would not result in substantial land disturbance that would impact existing mining areas or preclude the future extraction of industrial minerals and construction aggregate in the water service area. Therefore, the project's contribution would not cumulatively considerable.

3.12.5.2 Cumulative Threshold 2: Loss of Availability of Locally Important Mineral Resource Recovery Sites

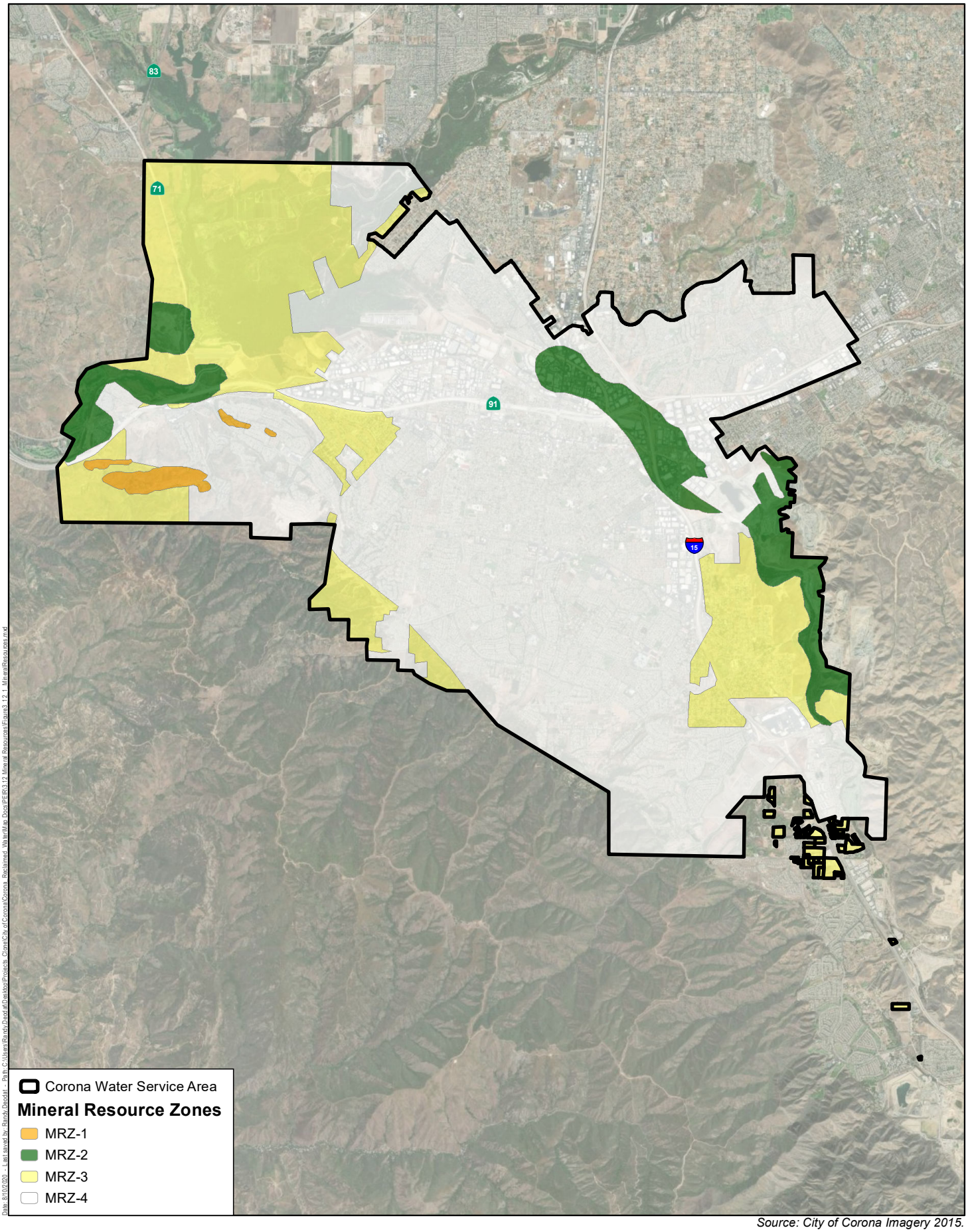
The geographic context for the analysis of cumulative impacts related to the potential loss of availability of locally important mineral resource recovery sites delineated on a local General Plan, Specific Plan, or other land use plan is projects in the City and adjacent communities. Cumulative projects in the City and the adjacent communities could contribute to the loss of availability of locally important mineral resource recovery sites if they contain areas delineated as locally important mineral resource recovery sites on a local General Plan, Specific Plan, or land use plan. These areas would not be zoned for other types of development that would allow them to lose their availability as locally important mineral resource sites. In addition, these types of projects would require additional approvals by the City and other jurisdictions to permit as mineral resource sites. Cumulative projects would not result in a significant cumulative impact. The project proposes to

expand the existing reclaimed water services and infrastructure in the water service area. Utilities are considered compatible with land uses in the City of Corona 2020–2040 General Plan (City of Corona 2020a). Therefore, the project's contribution would not cumulatively considerable.

3.12.6 Conclusion

Implementation of the project would not result in the loss of availability of a known mineral resource that would be of value to the region or residents of the state. Direct and cumulative impacts would be less than significant.

Implementation of the project would not result in the loss of availability of locally important mineral resource recovery sites delineated on a local General Plan, Specific Plan, or other land use plan. Direct and cumulative impacts would be less than significant.



Source: City of Corona Imagery 2015.

Harris & Associates

Figure 3.12-1

Mineral Resources

City of Corona 2018 Reclaimed Water Master Plan

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3.13 Noise

This section discusses the potential noise impacts in the City of Corona's (City's) water service area that may result from the implementation of the 2018 Reclaimed Water Master Plan (project or 2018 RWMP). The analysis in this section is based in part on the following information: Noise Technical Memorandum prepared by Harris & Associates (2020) for the project (Appendix F).

3.13.1 Environmental Setting

This section describes the environmental setting as it relates to noise for the water service area. The project proposes reclaimed water facilities in various locations throughout the water service area.

3.13.1.1 Fundamentals of Environmental Noise

Quantification of Noise

The California Department of Transportation defines noise as sound that is loud, unpleasant, unexpected, or undesired. Sound pressure levels are quantified using a logarithmic ratio of actual sound pressures to a reference pressure squared, called "bels." A bel is typically divided into tenths, or decibels (dB). Sound pressure alone is not a reliable indicator of loudness because frequency (or pitch) also affects how receptors respond to the sound. To account for the pitch of sounds and the corresponding sensitivity of human hearing to them, the raw sound pressure level is adjusted with a frequency-dependent A-weighting scale that is stated in units of decibels (dBA) (Caltrans 2013). Typical A-weighted noise levels are listed in Table 3.13-1.

Table 3.13-1. Typical A-Weighted Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	— 110 —	Rock band
Jet flyover at 1,000 feet		
	— 100 —	
Gas lawn mower at 3 feet		
	— 90 —	
Diesel truck at 50 feet at 50 miles per hour		Food blender at 3 feet
	— 80 —	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower, 100 feet	**— 70 —**	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	**— 60 —**	
		Large business office
Quiet urban daytime	**— 50 —**	Dishwasher next room
Quiet urban nighttime	**— 40 —**	Theater, large conference room (background)

Table 3.13-1. Typical A-Weighted Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Quiet suburban nighttime		
	— 30 —	Library
Quiet rural nighttime		Bedroom at night
	— 20 —	
		Broadcast/recording studio
	— 10 —	
Lowest threshold of human hearing	— 0 —	Lowest threshold of human hearing

Source: Caltrans 2013.
Note: dBA = A-weighted decibel

A receptor's response to a given noise may vary depending on the sound level, duration of exposure, character of the noise sources, the time of day during which the noise is experienced, and the activity affected by the noise. Activities most affected by noise include rest, relaxation, recreation, study, and communications. In consideration of these factors, different measures of noise exposure have been developed to quantify the extent of the effects from a variety of noise levels. The Leq, or Equivalent Energy Level, provides an average acoustical or sound energy content of noise, measured during a prescribed period, such as 1 minute, 15 minutes, 1 hour, or 8 hours. The sound level may not be constant over the measured time period, but the average dB sound level, given as dBA Leq, contains an equal amount of energy as the fluctuating sound level (Caltrans 2013). Community noise equivalent level (CNEL) is an average sound level during a 24-hour day that considers the 24-hour day divided into three periods. CNEL is obtained by adding an additional 5 dBA to sound levels in the evening between 7:00 p.m. and 10:00 p.m. and an additional 10 dBA to noise levels in the nighttime hours between 10:00 p.m. to 7:00 a.m. (City of Corona 2020a).

The dB level of a sound decreases (or attenuates) as the distance from the source of that sound increases. For a single point source, such as a piece of mechanical equipment, the sound level normally decreases by approximately 6 dBA for each doubling of distance from the source. Sound that originates from a linear, or "line" source, such as vehicular traffic, attenuates by approximately 3 dBA per doubling of distance. Other contributing factors that affect sound reception include ground absorption, natural topography that provides a natural barrier, meteorological conditions, or the presence of human-made obstacles such as buildings and sound barriers (Caltrans 2013).

Noise Effects

Reaction to a given sound varies depending on acoustical characteristics of the source and the environment of the receptor. The A-weighted scale de-emphasizes low-frequency sounds because humans are more sensitive to high-frequency sounds that are more likely to cause hearing damage.

People tend to compare an intruding noise to existing background noise levels. If a new noise is considerably louder or noticeable above existing levels, it is generally considered objectionable. The activity that the receptor is engaged in also affects response. For example, the same noise source, such as constant freeway traffic, may be more objectionable to people sleeping than to workers in a factory. A 3 dBA change is the smallest increment that is perceptible by most receivers, and a 5 dBA change in community noise level is clearly noticeable. Generally, 1 to 2 dBA changes are not detectable, except under controlled laboratory conditions. A sound that is 10 dBA greater than the reference sound is typically perceived as twice as loud (Caltrans 2013).

3.13.1.2 Fundamentals of Environmental Vibration

The Federal Transit Administration (FTA) describes groundborne vibration as vibration that can cause buildings to shake and rumbling sounds to be heard. In contrast to airborne noise, groundborne vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. Common sources of groundborne vibration are trains, buses on rough roads, and construction activities such as blasting, pile driving, and operation of heavy earthmoving equipment. The effects of groundborne vibration include feel-able movement of the building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. In extreme cases, the vibration can cause damage to buildings. Building damage is typically only a factor in the case of blasting and pile driving during construction. Groundborne vibration related to potential building damage effects is generally related to the peak particle velocity (PPV) in inches per second (FTA 2018).

3.13.1.3 Existing Noise Environment

Noise in the City is primarily characterized by traffic noise, particularly near Interstate 15 and Interstate 91. Other noise sources in the City include commercial operations, property maintenance, and other typical urban activity noise. Average noise levels range from 45 to 65 dBA Leq depending on proximity to major freeways.

Rail noise is a major noise source in limited areas of the City. Land uses adjacent to rail operations experience noise levels that typically range from 65 to 75 CNEL, with periodic exposure to train signals at railroad crossings.

Corona Municipal Airport is in the northeastern portion of the City and is the primary recreational public airport for the City. The Corona Municipal Airport is used for recreational flying only and experiences up to 50,000 annual operations per year. The City is subject to overflights from Corona Municipal Airport. However, due to the type of aircraft served and flight patterns, the airport does not represent a major noise source in the City. The airport's 65 dBA CNEL noise contour is contained in the airport and surrounding undeveloped area (City of Corona 2020b). The water service area is included in a portion of the Corona Municipal Airport Influence Area boundary.

Noise-sensitive land uses include noise receptors (receivers) where an excessive amount of noise would interfere with normal activities. Sensitive receptors in the City include residences, senior housing, schools, places of worship, and recreational areas. Commercial and industrial uses are not considered particularly sensitive to noise or vibration (City of Corona 2020b).

3.13.2 Regulatory Setting

This section describes the federal, state, and local regulatory framework pertaining to noise.

3.13.2.1 Federal

Federal Aviation Administration Standards

Enforced by the Federal Aviation Administration, Code of Federal Regulations, Title 14, Part 150, prescribes the procedures, standards, and methods governing the development, submission, and review of airport noise exposure maps and airport noise compatibility programs, including the process for evaluating and approving or disapproving those programs. Title 14 also identifies those land uses that are normally compatible with various levels of exposure to noise by individuals. The Federal Aviation Administration considers residential land uses to be compatible with exterior noise levels at or less than 65 dBA Ldn.

Federal Transit Administration Standards

Although the FTA standards are intended for federally funded mass transit projects, the impact assessment procedures and criteria included in the FTA Transit Noise and Vibration Impact Assessment Manual (FTA 2018) are routinely used for projects proposed by local jurisdictions. The manual includes criteria for assessing the impacts of groundborne vibration, presented in Table 3.13-2.

Table 3.13-2. Federal Transit Administration Groundborne Vibration Impact Criteria

Land Use Category	Impact Levels (VdB)		
	Frequent Events[1]	Occasional Events[2]	Infrequent Events[3]
Category 1: Buildings where vibration would interfere with interior operations	65	65	65
Category 2: Residences and buildings where people normally sleep	72	75	80
Category 3: Institutional land uses with primarily daytime uses	75	78	83

Source: FTA 2018.

Notes: VdB = vibration decibel

Vibration levels are measured in or near the vibration-sensitive use.

[1] "Frequent Events" are defined as more than 70 vibration events of the same source per day.

[2] "Occasional Events" are defined as between 30 and 70 vibration events of the same source per day.

[3] "Infrequent Events" are defined as fewer than 30 vibration events of the same source per day.

Noise Control Act

The Noise Control Act of 1972 identified uncontrolled noise as a danger to health and welfare, particularly for people in urban areas. Responsibility for noise control remains primarily a state and local issue; however, the Noise Control Act established a means for effective coordination of federal research and noise control activities (USEPA 2019). The act included a directive that the U.S. Environmental Protection Agency develop and publish information on noise levels to protect public health and welfare with an adequate margin of safety. In 1974, the U.S. Environmental Protection Agency published the Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. The document identifies an interior noise level of 45 dBA Ldn in indoor residential areas to be adequate to protect indoor activity from interference and annoyance. An exterior noise level of 55 dBA Ldn was identified as the maximum noise level to avoid interference and annoyance in residential areas and other areas in which quiet is a basis for use. A maximum 24-hour average outdoor noise level of 70 dBA Leq is recommended to prevent hearing loss (USEPA 1974).

3.13.2.2 State

California Noise Control Act

Sections 46000 through 46080 of the California Health and Safety Code, known as the California Noise Control Act of 1973, find that excessive noise is a serious hazard to the public health and welfare and that exposure to certain levels of noise can result in physiological, psychological, and economic damage. The California Noise Control Act declares that the State of California has a responsibility to protect the health and welfare of its citizens by the control, prevention, and abatement of noise. It is the policy of the state to provide an environment for all Californians free from noise that jeopardizes their health or welfare. Section 46050.1 of the act mandates development guidelines for the preparation and content of General Plan Noise Elements.

3.13.2.3 Local

City of Corona Noise Ordinance

The City's Noise Ordinance is included in Section 17.84.040 of the Corona Municipal Code. This section is referred to as the "Noise Control Ordinance." It includes standards for stationary noise, transportation noise, and construction noise, as summarized below (City of Corona 2020a).

Stationary noise sources, such as mechanical equipment, are subject to noise source standards identified in Section 17.84.040(C)(2) and summarized in Table 3.13-3. The standards in Table 3.13-3 may not be exceeded for a cumulative period of more than 30 minutes in any hour. The noise standards in Table 3.13-3 are increased incrementally as time of exposure decreases. The noise standards in Table 3.13-3 plus 20 dB may not be exceed for any period of time.

Table 3.13-3. Stationary Noise Standards

Type of Land Use	Maximum Allowable Noise Levels			
	Exterior Noise Level		Interior Noise Level	
	7:00 a.m. to 10:00 p.m.	10:00 p.m. to 7:00 a.m.	7:00 a.m. to 10:00 p.m.	10:00 p.m. to 7:00 a.m.
Single-, Double-, and Multi- Family Residential	55 dBA	50 dBA	45 dBA	35 dBA
Other Sensitive Land Uses	55 dBA	50 dBA	45 dBA	35 dBA
Commercial Uses	65 dBA	60 dBA	Not applicable	Not applicable
Industrial, Manufacturing or Agricultural	75 dBA	70 dBA	Not applicable	Not applicable

Source: City of Corona 2020c.
Notes: dBA = A-weighted decibel

Section 17.84.040(C)(3)(a), Roadway Noise, requires a Noise Study to be prepared before the construction of new master planned roads, roadway improvements, and rail lines or before the construction of residential or sensitive land uses adjacent to existing or master planned roads or railways. The Noise Study must identify the existing and future noise contours for the roadway and propose mitigation measures to reduce the noise impacts to a maximum of 65 dBA CNEL in the private outdoor living area of residences and to a maximum interior noise level of 45 dBA CNEL for residential and sensitive land uses.

Section 17.84.040(D)(2), Construction Noise, prohibits construction noise between the hours of 8:00 p.m. and 7:00 a.m., Monday through Saturday, and 6:00 p.m. to 10:00 a.m. on Sundays and federal holidays. Construction noise is defined by the Corona Municipal Code as noise that is disturbing, excessive, or offensive and constitutes a nuisance involving discomfort or annoyance to people of normal sensitivity residing in the area that is generated by the use of any tools, machinery, or equipment used in connection with construction operations.

City of Corona Vibration Ordinance

Section 17.84.050, Vibration, of the Corona Municipal Code, states that it is unlawful for any person to create, maintain, or cause any ground vibration that is perceptible without instruments at any point on any affected property adjoining the property on which the vibration source is located. For the purposes of the Corona Municipal Code, the perception threshold is presumed to be more than 0.05 inch per second root mean square (RMS) vertical velocity. This is equivalent to 94 VdB (City of Corona 2020a).

City of Corona 2020–2040 General Plan

The Noise Element of the Corona 2020–2040 General Plan contains goals and policies related to environmental noise. The Noise Element includes a Noise Land Use Compatibility Matrix that presents the Noise Element guidelines for determining acceptable and unacceptable community noise exposure limits for various land use categories. Noise levels up to 60 dBA CNEL are considered clearly compatible with residences and other sensitive uses. Noise levels up to 65 dBA CNEL are considered clearly compatible with office and recreational uses. Noise levels up to 70 dBA CNEL are considered clearly compatible with active commercial, industrial, and open space. Additionally, the Corona 2020–2040 General Plan includes interior noise standards of 45 dBA CNEL for sensitive land uses up to 65 dBA CNEL for some industrial uses. Additionally, it includes a policy to limit noise exposure during construction by requiring construction activities that occur in proximity to existing "noise-sensitive" uses, including schools, libraries, health care facilities, and residential uses, to limit the hours and days of operation in accordance with the City's Noise Ordinance.

The following goals and policies in the City of Corona 2020–2040 General Plan are relevant to noise (City of Corona 2020b).

Goal N-1. Protect residents, visitors, and noise-sensitive land uses from the adverse human health and environmental impacts created by excessive noise levels from transportation sources by requiring proactive mitigation.

Policy N-1.4. Require municipal vehicles and noise-generating mechanical equipment purchased or used by the City to comply with noise performance standards consistent with the latest available noise reduction technology to the extent practicable and cost-effective.

Policy N-2.1. Consider noise and vibration levels in land use planning decisions to prevent future noise and vibration and land use incompatibilities. Considerations may include, but not necessarily be limited to, standards that specify acceptable noise limits for various land uses, noise reduction features, acoustical design in new construction, and enforcement of the California Standards Building Code provisions for indoor and outdoor noise levels.

Policy N-2.4. Require development in all areas where the existing or future ambient noise level exceeds 65 dBA CNEL to conduct an acoustical analysis and incorporate special design measures in their construction to reduce interior noise levels to the 45 dBA CNEL level as depicted on Table N-1, N-2, and N-3 of the City of Corona General Plan.

Policy N-2.7. Require construction activities that occur in close proximity to existing "noise-sensitive" uses, including schools, libraries, health care facilities, and residential uses, to limit the hours and days of operation in accordance with the City Noise Ordinance.

Goal N-3. Discourage the spillover or encroachment of unacceptable noise levels from mixed use, commercial, and industrial land uses on to noise sensitive land uses.

Policy N-3.2. Incorporate noise reducing designs into new or remodeled commercial and industrial projects. Measures should include, but not be limited, to:

- Sound barriers in front of HVAC [heating, ventilation, and air conditioning] units and other similar outdoor mechanical equipment.
- Increase setbacks and buffering of parking areas and primary on-site access drives from adjacent residential areas and other sensitive uses to the maximum extent feasible with walls, fences, berms, and/or adequate landscaping.
- Require vehicle access to commercial or industrial land uses abutting existing or planned residential areas be located at the maximum practical distance from residential areas.
- Orient loading and unloading ramps and drop off zones away from noise-sensitive land uses.

3.13.3 Thresholds of Significance

According to Appendix G of the California Environmental Quality Act (CEQA) Guidelines, a significant impact related to noise would occur if the project would (CEQA Guidelines, Section 15000 et seq.):

1. Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the proposed project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies
2. Generate excessive groundborne vibration or groundborne noise levels
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, expose people residing or working in the project area to excessive noise levels

Construction noise impacts are evaluated based on the qualitative criteria outlined in Section 17.84.040(D)(2), Construction Noise, of the Corona Municipal Code. The City has not established a quantitative screening level for construction noise. In general, construction noise impacts are based on the volume of the noise, intensity of the noise, the volume and intensity of the background

noise, whether the noise can be heard from a distance of 50 feet or more from the noise source, the nature and zoning of the area within which the noise emanates, the density of inhabitation of the area within which the noise emanates, the time of the day or night the noise occurs, the duration of the noise, and whether the noise is recurrent, intermittent or constant (City of Corona 2020b).

Operational noise impacts from stationary sources are evaluated based on the noise standards identified in Section 17.84.040(C)(2), Stationary Noise Source Standards, and provided in Table 3.13-3. A permanent increase in traffic noise levels would be considered significant if it would increase noise level by greater than 3 dBA on any roadway segment and cause roadway noise levels to exceed the General Plan noise compatibility criteria.

Impacts related to vibration are evaluated based on FTA criteria and Section 17.84.050 of the Corona Municipal Code. The City does not have established vibration damage criteria, therefore the FTA criteria for acceptable levels of groundborne vibration for various types of buildings is used for this analysis. The FTA identifies a standard of 0.12 PPV for buildings extremely sensitive to vibration damage and 0.2 PPV for non-engineered timber and masonry buildings, such as most residences (City of Corona 2020a). Additionally, the threshold of 94 VdB established in Section 17.84.050 of the Corona Municipal Code is applied for the evaluation of potential vibration annoyance.

Impacts related to aircraft noise were assessed based on a review of published noise contours and planning documents for the Corona Municipal Airport (City of Corona 2020b).

3.13.4 Environmental Analysis

3.13.4.1 Threshold 1: Exceedance of Noise Standards

Would the project generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the proposed project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Impact Analysis

Project Construction

Temporary Construction Noise

Construction of the project would involve the use of heavy-duty machinery for surface preparation, excavation, surface restoration, and construction of aboveground facilities. The main pieces of equipment that may be used during construction include track-mounted excavator, backhoe, front-end loader, paver, forklift, crane, industrial saw, and welder. The transport of workers and equipment to the construction areas and import and export of material would also incrementally increase noise levels along roadways leading to and from the construction work areas.

The 2018 RWMP identifies 29 projects to be completed over the next 10 years before the buildout year (2030). Therefore, it assumed that construction of projects would overlap. However, the projects identified in the 2018 RWMP would be in various locations throughout the water service area and generally would not be in proximity to one another. For example, the Western Riverside County Regional Wastewater Authority (WRCRWA) Booster Pump Station and Old Temescal pipeline projects are proposed for construction in the same fiscal year but would be several miles apart. Due to distance, the noise from these projects would not affect the same receptors. Additionally, most projects would be linear; therefore, construction would occur in a given area for only a short duration before moving to the next segment of the project. As such, even if implementation of several projects would occur simultaneously, it is unlikely that simultaneous construction would result in combined noise impacts. Impacts related to construction noise would be independent to each construction project.

Sound levels of individual pieces of typical construction equipment range from 70 dBA to 83 dBA at 50 feet from the source, as shown in Table 3.13-4. When multiple pieces of equipment are operating simultaneously, the combined noise levels are higher. For example, the noise from one industrial saw at a distance of 50 feet (82.6 dBA) added to an excavator (76.7 dBA) at the same distance would equal approximately 83.6 dBA. These noise levels would attenuate by 6 dBA with every doubling of distance from the source.

Table 3.13-4. Noise Levels at 50 Feet from Typical Construction Equipment

Equipment Description	Leq (dBA)
Excavator	76.7
Backhoe	73.6
Front-End Loader	75.1
Paver	74.2
Forklift	67.7
Crane	72.6
Industrial Saw	82.6
Welder	70.0

Source: FHWA 2008.
Notes: dBA = A-weighted decibel; Leq = Equivalent Energy Level

As described previously, average noise levels in the City range from 45 to 65 dBA Leq depending on proximity to major freeways. As such, construction noise would temporarily increase the ambient noise environment and would be noticeably audible to sensitive receptors in the vicinity of the project. As previously noted, a 5 dBA change in community noise level is generally clearly noticeable. According to Corona Municipal Code, Section 17.84.040(D)(2), construction noise is prohibited between the hours of 8:00 p.m. and 7:00 a.m., Monday through Saturday, and 6:00 p.m. to 10:00 a.m. on Sundays and federal holidays. Construction outside allowable hours is not anticipated for project implementation. No pile driving is anticipated. However, because

construction noise would have the potential to be heard from a distance of 50 feet or more from the construction area, and construction would occur in residential and other zones containing sensitive receptors, construction of individual 2018 RWMP projects would have the potential to result in a clearly noticeable increase in noise level during construction that would be considered a significant temporary nuisance. Because noise levels produced by project-related construction activities could potentially be considered a significant nuisance under the City's Noise Ordinance criteria, a potentially significant impact would occur.

Construction traffic associated with the projects proposed in the 2018 RWMP is anticipated to be minimal. Based on the worst-case construction scenario assumed in the Air Quality Impact Analysis prepared by Harris & Associates for the project (included as Appendix B), average construction crews would generate approximately 18 one-way personal automobile trips from workers per day. The Sampson Pipeline Project represents the worst-case construction project because it is projected to require the most material import and export in the least amount of time and is anticipated to result in an average of approximately 20 truck trips per day. Therefore, the worst-case scenario would result in approximately 38 total trips per day (18 worker trips plus 20 truck trips). Compared to the tens of thousands of vehicle trips that occur on major arterial, collector, and local roadways in the City every day, the noise generated by construction traffic associated with the individual projects identified in the 2018 RWMP would not be discernable. Construction traffic noise would not result in a significant impact.

Operation

Permanent Increase in Ambient Noise

With the exception of two new pump stations (discussed below), most of the projects associated with the 2018 RWMP would be passive, new, or upgraded pipelines and storage facilities. These projects would not result in new sources of operational noise because the flow of water through underground pipes and water storage does not generate audible noise. The new and improved facilities would be incorporated into the existing maintenance schedule, and the net increase in new vehicle trips would be minimal (City of Corona 2001). Therefore, buildout of the project would not result in a permanent increase in vehicle noise in the water service area. Emergency repair work may generate excessive noise from construction equipment; however, noise generated from such activities would be temporary and infrequent and not substantially different than existing emergency repair activities.

Operation of the two new pump stations (WRCRWA Booster Pump Station and Chase Booster Pump Station) identified in the 2018 RWMP would have the potential to result in new sources of stationary equipment noise. The typical noise range from pump station operation is between 80 and 90 dBA at the station. However, pump stations would be installed in enclosures that would typically reduce noise levels by 10 to 20 dBA (City of Corona 2001). Assuming the worst-case

noise level of 90 dBA, attenuated to 80 dBA through an enclosure, the new pump stations would individually have the potential to exceed the City's most conservative stationary noise threshold of 50 dBA during nighttime hours up to 100 feet from the pump station. The WRCRWA Booster Pump Station would be approximately 800 feet west of the nearest receptors. The Chase Booster Pump Station would be in the southeastern portion of Chase Park, more than 100 feet from the nearest residences and approximately 100 feet from an existing place of worship. However, places of worship are primarily used during daytime hours. For both proposed pump stations, noise generated at the pump station would not exceed the City's daytime noise threshold of 55 dBA beyond 55 feet from the pump station. Since both pump stations are more than 10 feet from the nearest sensitive receptors, operation of the proposed pump stations would not result in a significant permanent increase in ambient noise. Thus, operation of the project would not generate noise in excess of established thresholds or expose sensitive receptors to excessive noise.

Level of Significance Before Mitigation

Implementation of the project would generate a substantial 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. Temporary noise impacts during construction would be potentially significant. Long-term operational noise impacts would be less than significant.

Mitigation Measures

Mitigation Measure NOI-1 would be implemented to minimize construction noise exposure. With implementation of the Mitigation Measure NOI-1, construction would incorporate best management practices so that noise levels would not be a nuisance.

NOI-1: **Construction Noise Reduction Measures.** Individual projects under the 2018 Reclaimed Water Master Plan shall implement construction noise reduction measures to ensure compliance with the City of Corona's Noise Ordinance. The following measures shall be included on individual project Construction Plans and be submitted to the City of Corona, Public Works Department, for review before approval of final design:

- Construction equipment shall be properly outfitted and maintained with manufacturer recommended noise reduction devices.
- Diesel equipment shall be operated with closed engine doors and equipped with factory recommended mufflers.
- Mobile or fixed "package" equipment (e.g., arc-welders and air compressors) shall be equipped with shrouds and noise control features that are readily available for that type of equipment.
- Electrically powered equipment shall be used instead of pneumatic or internal-combustion powered equipment, where feasible.

- Unnecessary idling of internal combustion engines (e.g., in excess of 5 minutes) shall be prohibited.
- Material stockpiles and mobile equipment staging, parking, and maintenance areas shall be located as far as practicable from noise-sensitive receptors.
- The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be limited to safety warning purposes only.
- No project-related public address or music system shall be audible at any adjacent sensitive receptor.
- The City of Corona shall notify residences within 100 feet of the construction area in writing at least 2 weeks prior to any construction activity such as concrete sawing, asphalt removal, or heavy grading operations. The notification shall describe the activities anticipated, provide dates and hours, and provide contact information with a description of a complaint and response procedure.
- In the event that a complaint is received, noise monitoring shall be conducted to determine whether hourly average noise levels during construction exceed ambient noise levels by more than 5 A-weighted decibels Equivalent Energy Level. A 1-hour noise measurements shall be taken during a normal weekday without construction activity, and a 1-hour measurement during typical construction. In the event that the above measures do not reduce noise levels to 5 A-weighted decibels or less above ambient conditions at the affected receptor, temporary sound barriers or sound blankets may be installed between construction operations and adjacent noise-sensitive receptors. Due to equipment exhaust pipes being approximately 7–8 feet above ground, a sound barrier at least 10 feet in height above grade would be required to mitigate noise to an acceptable level.
- The on-site construction supervisor shall have the responsibility and authority to receive and resolve noise complaints. A clear appeal process for the affected resident shall be established before construction begins to allow for resolution of noise problems that cannot be immediately solved by the site supervisor.
- All construction activities, including deliveries and engine warm-up, shall be prohibited between the hours of 8:00 p.m. and 7:00 a.m., Monday through Saturday, and 6:00 p.m. to 10:00 a.m. on Sundays and federal holidays.

Level of Significance After Mitigation

Implementation of Mitigation Measure NOI-1 would reduce construction noise impacts to a less than significant level.

3.13.4.2 Threshold 2: Excessive Groundborne Vibration or Noise

Would the project result in the exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Impact Analysis

Temporary Construction Groundborne Vibration

Conventional construction techniques, such as earth movement by trucks, have the potential to generate groundborne vibration and noise. Construction techniques that commonly result in excessive vibration, such blasting and pile driving, are not anticipated for projects identified in the 2018 RWMP. Reference vibration levels available from the FTA for typical construction equipment are provided in Table 3.13-5.

Table 3.13-5. Noise Levels at 50 Feet from Typical Construction Equipment

Equipment Description	Approximate RMS Vibration Level at 25 Feet (VdB)	Approximate PPV Vibration Level at 25 Feet (in/sec)	Approximate RMS Vibration Level at 40 Feet (VdB)
Vibratory Roller	0.21	94	0.10
Hoe Ram	0.089	87	0.044
Large bulldozer	0.089	87	0.044
Caisson drilling	0.089	87	0.044
Loaded trucks	0.076	86	0.038
Jackhammer	0.035	79	0.017
Small bulldozer	0.003	58	0.001

Source: FTA 2018.
Notes: in/sec = inches per second; ppv = peak particle velocity; RMS = root mean square; VdB = vibration decibel

As shown in Table 3.13-5, construction-related vibration levels would be below the 0.2 PPV threshold for typical building damage and the 94 VdB threshold for annoyance at a distance of approximately 25 feet. If ultimately required, vibratory rollers can generate groundborne vibration at 0.210 at a distance of 25 feet (FTA 2018); however, the vibration level would dissipate to below the threshold by adding only one additional foot of separation from the source. Therefore, vibration impacts to typical buildings and receptors associated with construction equipment would be less than significant.

Construction would typically be below the threshold of 0.12 PPV for buildings extremely sensitive to vibration damage. However, vibration from operation of a vibratory roller, if required, would have the potential to generate vibration levels of 0.12 PPV up to approximately 40 feet from equipment operation. As discussed in Section 3.5.1.5 in Section 3.5, Cultural Resources, there are 30 historic addresses in the water service area. There are six properties listed on the California Register of Historical Resources and nine eligible resources. Construction would generally be separated from buildings by more than 40 feet due to roadway setbacks. However, because final

design of project alignments and the exact composition of construction fleets are unknown, construction that would involve use of a vibratory roller within 40 feet of a historic property would have the potential to result in a significant vibration impact.

Permanent Increase in Groundborne Vibration

Once installed, the project would include passive uses (pipelines, water storage) and pump stations that do not generate substantial levels of vibration. Water flowing through underground pipes, water storage facilities, mechanical equipment operating at pump stations, and light-duty trucks associated with facility maintenance are not typical sources of groundborne vibration. Therefore, long-term operational groundborne vibration impacts would be less than significant.

Level of Significance Before Mitigation

Implementation of the project would result in the exposure of people to or generation of excessive groundborne vibration or groundborne noise levels. Impacts would be potentially significant during construction activities.

Mitigation Measures

NOI-2: **Vibratory Equipment Limitations.** Construction Plans for individual projects under the 2018 Reclaimed Water Master Plan shall include a requirement that no vibratory equipment be operated within 40 feet of a structure eligible or listed on the National Register of Historic Places, California Register of Historic Resources, or Corona Register. Instead, alternative construction equipment shall be used, such as smooth wheel rollers without a vibratory component. This requirement shall be included on individual project Construction Plans and be submitted to the City of Corona, Public Works Department, for review before approval of final design.

Level of Significance After Mitigation

Implementation of Mitigation Measure NOI-2 would reduce groundborne vibration impacts during construction to a less than significant level.

3.13.4.3 Threshold 3: Aircraft Noise

For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

Impact Analysis

The 2018 RWMP projects would not employ daily workers but would require scheduled maintenance checks. Portions of the water service area are in the Airport Influence Area of the Corona Municipal Airport as identified in the Comprehensive Land Use Plan (Aires 1993). Several

projects identified in the 2018 RWMP would be constructed within the Airport Influence Area of the Corona Municipal Airport including the Monica, Klug, Citation, Glider, Helicopter, Cessna, Airport Circle and Jenk small distribution pipelines and the WRCRWA Flow Control Improvements Project. These projects are outside the 60 dB contour lines and are not in the Airport Safety Zone. In addition, the City of Corona 2020–2040 General Plan (City of Corona 2020b) states that because the airport generally serves small aircrafts and is located within the Prado Flood Control Basin approximately one-half mile from the nearest residential neighborhoods, it not considered a substantial source of noise at any noise-sensitive land uses, and the airport does not affect most of the City. Therefore, the project would not expose people residing or working on the project site to excessive noise during construction activities or operational maintenance activities resulting from aircraft noise.

Level of Significance Before Mitigation

Implementation of the project would not expose people residing or working in the water service area to excessive noise levels resulting from aircraft noise. Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Level of Significance After Mitigation

Because no mitigation measures are required, impacts would remain less than significant.

3.13.5 Cumulative Impacts and Mitigation

3.13.5.1 Cumulative Threshold 1: Exceedance of Noise Standards

The geographic context for the analysis of cumulative noise impacts includes only those projects in proximity to the projects identified in the 2018 RWMP. Cumulative projects in proximity would have the potential to result in permanent increases in the ambient noise level as a result of combined construction and operational noise, as well as introduce new receptors to the area.

The project would involve the construction of reclaimed water facilities that would result in temporary noise increases. Operation associated with the project would result in minimal noise associated with maintenance of project facilities. Where noise impacts associated with temporary construction activities would occur, Mitigation Measure NOI-1 would reduce impacts to a less than significant level. Similar to the project, cumulative projects would be required to mitigate any significant construction or operational noise impacts and comply with the City's Noise Ordinance. Therefore, the project's contribution would not be cumulatively considerable.

3.13.5.2 Cumulative Threshold 2: Excessive Groundborne Vibration or Noise

Vibration is a localized phenomenon and is progressively reduced as the distance from the source increases. Therefore, the geographic area of projects considered for the vibration cumulative analysis are only those projects in proximity to the projects identified in the 2018 RWMP. A significant cumulative impact would occur if the project, combined with the cumulative projects, would exceed vibration significance criteria at existing and planned sensitive receptors.

As discussed previously, construction of the project would typically be below the threshold of 0.12 PPV for buildings extremely sensitive to vibration damage. However, vibration from operation of a vibratory roller, if required, would have the potential to result in a significant impact to historic buildings. Implementation of Mitigation Measure NOI-2 would reduce groundborne vibration impacts during construction to a less than significant level. Similar to the project, cumulative projects would be required to mitigate vibration impacts and comply with the City's Noise Ordinance. Therefore, the project's contribution would not cumulatively considerable.

3.13.5.3 Cumulative Threshold 3: Aircraft Noise

The geographic context for the analysis of cumulative impacts related to aircraft noise would be the Corona Municipal Airport Influence Area. Potential risks associated with development in the vicinity of the Corona Municipal Airport would be a factor in any decision to approve or deny future development proposals. Land uses that may be impacted by the airport are reviewed and regulated through the Airport Land Use Compatibility Plan and the City. As a result, cumulative risks to future development associated with proximity to the Corona Municipal Airport would not result in a significant impact. Impacts related to nuisance noise within noise contour areas are site specific and are not cumulative in nature. Therefore, no significant cumulative impact would occur, and the project's contribution would not be cumulatively considerable.

3.13.6 Conclusion

Construction noise as a result of the project would have the potential to be considered a significant nuisance under the City's Noise Ordinance, resulting in a potentially significant temporary noise impact. Implementation of Mitigation Measure NOI-1 would reduce the impact to a less than significant level. Construction of the project would typically be below the allowable vibration threshold for buildings extremely sensitive to vibration damage. However, operation of a vibratory roller, if required, would have the potential to generate vibration levels in excess of the allowable threshold. Implementation of Mitigation Measure NOI-2 would reduce groundborne vibration impacts during construction to a less than significant level.

Finally, the project would not expose people residing or working on the project site to excessive noise resulting from aircraft noise because the project would be outside the 60 dB contour lines and is not in the Airport Safety Zone of the Corona Municipal Airport. Therefore, impacts would be less than significant.

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3.14 Population and Housing

This section discusses the potential impacts to population and housing in the City of Corona's (City's) water service area that may result from the implementation of the 2018 Reclaimed Water Master Plan (project or 2018 RWMP). The analysis in this section is based in part on the following information: 2018 RWMP (City of Corona 2018) and the City of Corona 2020–2040 General Plan (City of Corona 2020).

3.14.1 Environmental Setting

This section describes the environmental setting as it relates to population and housing in the water service area. The project proposes reclaimed water facilities in various locations throughout the water service area.

3.14.1.1 Population

City of Corona

The Southern California Associations of Governments (SCAG) regularly prepares and updates population projections to support regional planning efforts. The SCAG 2015 Draft Growth Forecast for the City will serve as a reference for population-related calculations and to promote consistency among the various planning efforts currently underway in the City. Per SCAG, population for the City is projected as shown in Table 3.14-1.

Table 3.14-1. 2015 Southern California Associations of Governments Draft Growth Forecast

Year	Population
2012	155,995
2020	166,101
2035	170,547
2040	172,349

Source: City of Corona 2018.

Reclaimed Water Service Area

The water service area is slightly larger than the incorporated area of the City and represents a more accurate portrayal of the City's responsibility for water delivery. One of the goals of the reclaimed water system is to offset potable water demand. Potable water demand is associated with the water service area. Therefore, the reclaimed water system impacts a population larger than the City's population. Table 3.14-2 shows the historical and projected population in the water service area.

Table 3.14-2. 2015 Urban Water Management Plan Population for the Water Service Area

Year	Population in Water Service Area
1990	85,774
1995	101,078
2000	134,902
2005	143,876
2010	160,188
2015	167,764
2020	170,100
2025	172,900
2030	176,100
2035	179,600
2040	182,800

Source: City of Corona 2015.

Housing

The rate of housing growth has varied over the years. The water service area has traditionally been single-family residential communities. As shown in Table 3.14-3, in 2018, approximately 68 percent, or 32,943 units, of the City's housing stock was single-family units.

Table 3.14-3. Housing Units in the City of Corona

Type	Number of Units	Percent
Single-Family	32,943	68
Multi-Family	14,199	29
Mobile Homes	1,389	2
Other	1	<1
Total	**48,532**	**100**

Source: City of Corona 2020.

3.14.2 Regulatory Setting

This section describes the federal, state, regional, and local regulatory framework adopted to address population and housing.

3.14.2.1 Federal

There are no applicable federal regulations that apply to population and housing.

3.14.2.2 State

California Housing Element Law

California planning and zoning law requires each city and county to adopt a General Plan for future growth (California Government Code, Section 65300). This plan must include a Housing Element that identifies housing needs for economic segments and provides opportunities for housing development to meet that need. At the state level, the Housing and Community Development Department 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 the Housing and Community Development Department in a Regional Housing Needs Assessment for each region of California. Where there is a regional council of governments, the Housing and Community Development Department provides the Regional Housing Needs Assessment to the council. The council then assigns a share of the regional housing need to each of its cities and counties. The process of assigning shares gives cities and counties the opportunity to comment on the proposed allocations. The Housing and Community Development Department oversees the process to ensure that the council of governments distributes its share of the state's projected housing need.

3.14.2.3 Regional

Southern California Association of Governments Regional Transportation Plan/Sustainable Community Strategy

SCAG is a regional council of governments representing the Counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura, which encompass over 38,000 square miles. SCAG has developed regional plans to achieve specific regional objectives. On April 7, 2016, SCAG adopted the 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy, a Long-Range Visioning Plan that balances future mobility and housing needs with economic, environmental, and public health goals (SCAG 2016a). This Long-Range Visioning Plan, which is a requirement of the State of California and the federal government, is updated by SCAG every 4 years as demographic, economic, and policy circumstances change. A component of the 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy is a set of growth forecasts that estimates employment, population, and housing growth. These estimates are used by SCAG, transportation agencies, and local agencies to anticipate and plan for growth.

3.14.2.4 Local

City of Corona Housing Element 2013–2021

The City of Corona Housing Element 2013–2021, per the requirements of state law, is a policy document that focuses on the actions that will be undertaken by the City for accommodating current and future housing needs of residents and providing quality neighborhoods for residents to

invest in. The Housing Element was adopted in 2013 and focuses on the years 2013 to 2021. It provides an assessment of both current and future housing needs and identifies constraints and opportunities for meeting those needs. The Housing Element focuses on the actions that will be undertaken by the City to provide adequate housing for income categories of the population and those with special needs (City of Corona 2013).

3.14.3 Thresholds of Significance

According to Appendix G of the California Environmental Quality Act (CEQA) Guidelines, a significant impact related to population and housing would occur if the project would (CEQA Guidelines, Section 15000 et seq.):

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)
2. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere

3.14.4 Environmental Analysis

3.14.4.1 Threshold 1: Induction of Substantial Population Growth

Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Impact Analysis

The City is proposing to expand its reclaimed water system due to increased demand from its current customers in the water service area. The project would expand its reclaimed water services through the construction of new storage tanks, pump stations, and distribution pipelines. It would not directly induce substantial population growth in the water service area through the construction of new homes and businesses. However, the project may result in the indirect population growth due to the extension and expansion of the City's reclaimed water system and employment opportunities.

In addition, as shown in Table 3.14-2, the City of Corona 2015 Urban Water Management Plan planned for a population estimate specific to the water service area. The 2018 RWMP addresses the City's planned expansion for its reclaimed water system to serve this population. New landscaping, parks, and schools required to support the planned population increase would generate new demand for reclaimed water. The 2018 RWMP would expand the existing reclaimed water system to meet the increased demand for reclaimed water in the water service area. It would not allow for an increase in population growth beyond what has been accounted for in the 2015 Urban Water Management Plan. Furthermore, the provision of reclaimed water alone would not

allow for population growth because it cannot be consumed; potable water is the key indicator of population growth.

In addition, construction activities would involve a temporary increase in employees in the water service area; however, employment opportunities associated with the project construction are assumed to be filled by the local workforce and would not result in population growth. Therefore, the expansion of the reclaimed water system would not directly or indirectly induce substantial population growth in an area.

Level of Significance Before Mitigation

Implementation of the projects identified in the 2018 RWMP would not induce substantial unplanned population growth in an area either directly or indirectly. Impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Because no mitigation measures are required, impacts would remain less than significant.

3.14.4.2 Threshold 2: Displacement of Housing and People

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

Impact Analysis

The project would expand the City's reclaimed water system through the construction of water storage tanks, pump stations, and distribution pipelines. Construction activities would primarily occur in existing public rights-of-way. None of the projects identified in the 2018 RWMP would displace existing people or housing, necessitating the construction of housing elsewhere.

Level of Significance Before Mitigation

Implementation of the projects identified in the 2018 RWMP would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere. No impact would occur.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Because no mitigation measures are required, no impact would occur.

3.14.5 Cumulative Impacts and Mitigation

3.14.5.1 Cumulative Threshold 1: Induction of Substantial Population Growth

The geographic context for the analysis of cumulative impacts in regards to population growth is defined as the water service area. A significant cumulative impact would occur if the development of cumulative projects would result in a population increase above the growth accounted for in the City's 2015 Urban Water Management Plan. If future development projects were approved that induced population that surpassed the anticipated growth rate, then a considerable cumulative impact would occur. The project would not result in direct substantial population growth in the water service area because no residential units are proposed. The project would expand the reclaimed water infrastructure in the water service area but would not expand the City's potable water service infrastructure, which is a key indicator for growth. Therefore, the project would not directly or indirectly contribute to substantial population growth. The project's impact would not be cumulatively considerable.

3.14.5.2 Cumulative Threshold 2: Displacement of Housing and People

Regarding displacement of housing and people, development in the region is unlikely to result in the displacement of housing and people. Moreover, the project would not contribute to potential impacts. Impacts would not be cumulatively considerable.

3.14.6 Conclusion

The 2018 RWMP would not induce substantial population growth in the water service area either directly or indirectly. Direct and cumulative impacts would be less than significant.

Implementation of the projects identified in the 2018 RWMP would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere. No direct or cumulative impacts would occur.

3.15 Public Services

This section discusses the potential impacts to public services in the City of Corona's (City's) water service area that may result from the implementation of the 2018 Reclaimed Water Master Plan (project or 2018 RWMP). Effects associated with recreational services, such as parks, are evaluated in Section 3.16, Recreation, of this Program Environmental Impact Report. The analysis in this section is based in part on the following information: 2018 RWMP (City of Corona 2018) and City of Corona 2020–2040 General Plan (City of Corona 2020a).

3.15.1 Environmental Setting

This section describes the environmental setting as it relates to public services for the water service area. The project proposes reclaimed water facilities in various locations throughout the water service area.

3.15.1.1 Fire Protection and Emergency Medical Services

Formed in January 1898, the Corona Fire Department (CFD) provides emergency and non-emergency services to residents, businesses and visitors to the City. The mission of the CFD is to prevent or minimize the loss of life, damage to the environment, and loss of property from the adverse effects of fire, medical emergencies, and hazardous conditions. The CFD maintains seven strategically located and professionally staffed fire stations in addition to a fire department headquarters, all of which are in the water service area (City of Corona 2020b).

The medical aid response time for the CFD is to arrive within the expected time (5 minutes and 50 seconds) 90 percent of the time. As of July 2019, their response time goal was met 73 percent of the time (City of Corona 2020b).

The CFD is funded largely through the City's General Fund, with other funding coming from fees for services, a fee charged to the local ambulance company, the Emergency Medical Services Subscription program, and developer impact fees charged to new development. The CFD currently employs 107 sworn fire personnel (City of Corona 2020b).

Fire protection and paramedic services are also provided to the City through formal mutual aid agreements with the following agencies: City of Norco, City of Riverside, County of Riverside, County of Orange, and County of San Bernardino Fire Departments, as well as with the U.S. Forest Service and the California Department of Forestry and Fire Protection. The CFD also participates in the State of California Master Mutual Aid Agreement (City of Corona 2020b).

3.15.1.2 Police Protection Services

The Corona Police Department (CPD) provides local police services, including traffic control, offender apprehension, crime investigation, and community awareness programs, in the City. The

CPD conducts ongoing assessments to determine future funding, staffing, and equipment needs. Police operations are provided from the main office located at 730 Corporation Yard Way. During the 2018–2019 fiscal year, the CPD staffed 147 sworn officers, resulting in an officer to resident ration of 0.88 sworn officer per 1,000 residents (City of Corona 2020b).

Response times are categorized by emergency response, immediate response, and routine response (non-emergency call). Based on the CPD's 2019 Annual Report, the police response time was less than 4 minutes and 58 seconds 90 percent of the time. The CPD goal for response times for emergency calls is under 5 minutes (City of Corona 2020b).

Law enforcement services in the City are funded through a variety of sources, including the General Fund, development impact fees, asset forfeiture funds, traffic offender funds, and various grants.

3.15.1.3 School Services

The City is served primarily by the Corona-Norco Unified School District (CNUSD), with the exception of the northeastern portion of the City limits, which is served by the Alvord Unified School District. The CNUSD provides education for the students of the Cities of Corona and Norco and several unincorporated areas of the County of Riverside. According to the City of Corona 2020–2040 General Plan (City of Corona 2020a), there are 34 schools in the water service area. In addition, the City has 14 private schools, including Montessori schools, alternative education facilities, and religious schools.

3.15.1.4 Libraries

The City has one public library at 650 S. Main Street. The Corona Public Library (CPL) provides access to information, ideas, and knowledge through books, technology programs, services, and other resources (City of Corona 2020c).

3.15.2 Regulatory Setting

This section describes the federal, state, regional, and local regulatory framework adopted to address public services.

3.15.2.1 Federal

There are no applicable federal regulations that apply to public services.

3.15.2.2 State

California Fire Code

The California Fire Code (California Code of Regulations, Title 24, Part 9) is based on the 2015 International Fire Code and includes amendments from the State of California that are fully integrated into the code. The California Fire Code contains fire safety-related building standards that are

referenced in other parts of Title 24 of the California Code of Regulations. The California Fire Code is updated once every 3 years. The 2019 California Fire Code went into effect on January 1, 2020.

California Health and Safety Code

Sections 13000 et seq. of the California Health and Safety Code include fire regulations for building standards (also in the California Building Code); fire protection and notification systems; fire protection devices, such as extinguishers and smoke alarms; high-rise building and childcare facility standards; and fire suppression training.

California 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."

3.15.2.3 Regional

California Department of Forestry and Fire Protection, County of Riverside Unit Strategic Plan

The California Strategic Plan is implemented through individual "unit plans" that are prepared for different regions of the state. The California Department of Forestry and Fire Protection has adopted a County of Riverside Unit Strategic Plan that covers the County of Riverside's and California Department of Forestry and Fire Protection's priorities for prevention, protection, and suppression of wildfires. The overall goal of the 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 and increasing initial attack success.

Riverside County Local Agency Formation Commission

Municipal Service reviews were added to the Local Agency Formation Commission's 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 the Local Agency Formation Commission, local agencies, and 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.

3.15.2.4 Local

City of Corona 2020–2040 General Plan

The following goals and policies in the City of Corona 2020–2040 General Plan are relevant to public services (City of Corona 2020a).

Public Safety Element

Goal PS-5. Ensure that there is an adequate service level of law enforcement services provided for all residents, visitors, and businesses throughout the City of Corona.

Policy PS-5.4. Periodically evaluate population growth, development characteristics, level of service, and incidence of crime in the City of Corona to ensure that an adequate level of police service is maintained.

Policy PS-5.5. Require new and expanded development projects or those in which change operations to contribute an appropriate amount of impact fees based on their proportional impact and demand for police services.

Policy PS-7.7. Provide appropriate security measures around sensitive essential public facilities, such as water, reclaimed water, radio towers, and other facilities required for use for public health and safety purposes.

Policy PS-9.1. Continue to review and adopt the most recent edition of the California Building Standards Code (Title 24), including local amendments, to ensure the use of the latest technology and building standards in the city.

Policy PS-9.4. Maintain safe and accessible evacuation routes throughout the community; take precautions and ensure backup or mitigations for routes crossing high hazard areas (e.g., flood, seismic, high fire, etc.).

Policy PS-10.1. Locate, when feasible, new essential public facilities outside of high fire risk areas; if not feasible, require construction and other methods to harden and minimize damage for existing/planned facilities in such areas.

Corona Emergency Operations Plan

The City has prepared an Emergency Operations Plan (EOP) to address the City's planned response to natural disasters, technological incidents, and national security emergencies. The EOP does not address normal day-to-day emergencies or the well-established and routine procedures used in coping with such emergencies. The EOP's operational concepts focus on potential large-

scale disasters that can generate unique situations requiring unusual emergency responses. The EOP's emergency management goals are as follows (City of Corona 2020b):

1. Provide effective life safety measures and reduce property losses
2. Provide for the rapid resumption of impacted businesses and community services
3. Provide accurate documentation and records required for cost recovery efforts

Corona Local Hazard Mitigation Plan

The City has prepared a Local Hazard Mitigation Plan to identify the City's hazards, review and assess past disasters, estimate the probability of future events, and set goals to reduce or eliminate long-term risks to people and property from natural and human-made hazards. Of the 23 hazards evaluated, earthquakes were rated the highest risk, and wildfires were rated the second highest risk. The Local Hazard Mitigation Plan has goals and mitigation programs to address each of the 23 hazards.

Corona Standards of Coverage Study and Fire Strategic Plan

The CFD sets its vision, mission, business operations, and guiding principles by means of a Strategic Plan so that the members of the organization can envision its future and develop the necessary procedures and operations to achieve that future. The Strategic Plan assists the department in preparing annual fiscal year budgets, Master Plans, and other required, related activities. Although the planning period is 8 years, the plan is assessed annually to update service levels, performance, and other needed functions that may change during the course of a year.

3.15.3 Thresholds of Significance

According to Appendix G of the California Environmental Quality Act (CEQA) Guidelines, a significant impact related to public services would occur if the project would (CEQA Guidelines, Section 15000 et seq.):

1. Result in substantial adverse physical impacts associated with the provision of new of physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:
    a. Fire protection
    b. Police protection
    c. Schools
    d. Other Public Facilities (Libraries)

3.15.4 Environmental Analysis

3.15.4.1 Threshold 1: Fire Protection Services

Would the project result in substantial adverse physical impacts associated with the provision of new of physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire services?

Impact Analysis

The project does not include the provision of new or expanded fire protection facilities. The projects identified in the 2018 RWMP would not directly induce substantial or unplanned population growth in the water service area and would not require expanded fire protection facilities. Construction activities would involve a temporary increase in employees in the water service area; however, employment opportunities associated with the project construction are assumed to be filled by the local workforce and would not result in increased demand for fire protection services.

Operational activities associated with the project would not require CFD services. No new full-time employees would be required to operate the project's proposed reclaimed water facilities; therefore, implementation of the tanks, pipelines, and pump stations would not require new fire facilities to maintain response times, service ratios, or other measures of performance. Because the projects identified in the 2018 RWMP would not result in the permanent increase in population growth, no increase in the need for fire protection facilities would occur. As a result, construction or expansion of new fire service facilities would not be required.

Level of Significance Before Mitigation

Implementation of the project would not result in the provision of or the need for new or physically altered fire protection facilities. No impact would occur.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Because no mitigation measures are required, no impact would occur.

3.15.4.2 Threshold 2: Police Protection Services

Would the project result in the substantial adverse physical impacts associated with the provision of new of 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 services?

Impact Analysis

The project does not include the provision of new or expanded police protection facilities. The projects identified in the 2018 RWMP would not directly induce substantial or unplanned population growth in the water service area and would not require expanded police protection facilities. Construction activities would involve a temporary increase in employees; however, employment opportunities associated with project construction are assumed to be filled by the local work force and would not result in increased demand for police protection services.

Operational activities associated with the project would not require police services. No new full-time employees would be required to operate the project's proposed reclaimed water facilities; therefore, implementation of the tanks, pipelines and pump stations would not require new police facilities to maintain response times, service ratios, or other measures of performance. Because the project would not result in a permanent increase in population, no increase in the need for new police protection facilities would occur. As a result, construction or expansion of new police protection facilities would not be required.

Level of Significance Before Mitigation

Implementation of the project would not result in the provision of or the need for new or physically altered police protection facilities. No impact would occur.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Because no mitigation measures are required, no impact would occur.

3.15.4.3 Threshold 3: Public School Facilities

Would the project result in the substantial adverse physical impacts associated with the provision of new of 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 the school district?

Impact Analysis

The project does not include the provision of new or expanded school facilities. The project would not directly induce population growth in the water service area. No new full-time employees would be required to operate the reclaimed water projects; therefore, the project would not indirectly induce population growth through the provision of new jobs that could result in a need to provide school facilities for school-aged children. No new schools would need to be built to maintain acceptable performance objectives. Because the project would not require the construction of new or expanded schools, no environmental impacts from school construction would occur.

Level of Significance Before Mitigation

Implementation of the project would not result in the provision of or the need for, new school facilities. No impact would occur.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Because no mitigation measures are required, no impact would occur.

3.15.4.4 Threshold 4: Libraries

Would the project result in the provision of, or the need for, new or physically altered library facilities, the construction of which could cause environmental impacts, in order to maintain acceptable performance objectives for public libraries?

Impact Analysis

The project does not include the provision of new or expanded library facilities. The project would not directly induce population growth in the water service area. No new full-time employees would be required to operate the reclaimed water projects; the project would not indirectly induce population growth through the provision of new jobs that could result in increased demand for new or expanded library facilities. Because the project would not require the construction of new or expanded libraries, no environmental impacts would occur.

Level of Significance Before Mitigation

Implementation of the project would not result in the provision of or the need for new or physically altered library facilities. No impact would occur.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Because no mitigation measures are required, no impact would occur.

3.15.5 Cumulative Impacts and Mitigation

3.15.5.1 Cumulative Threshold 1: Fire Protection Services

The geographic context for this analysis of cumulative impacts concerning fire protection services is the CFD service area. A significant cumulative impact would occur if growth associated with cumulative projects would outpace the CFD's ability to expand and serve new development, resulting in adverse effects from increased response times, physical deterioration of existing facilities, or lack of funding for the development of future facilities.

As additional development occurs in the City, increases in the demand for fire protection would likely require improvements to fire protection services. However, these and other cumulative projects would undergo discretionary review by local agencies and would be required to conform with applicable adopted land use plans, which are used as a bases to plan for adequate fire protection services. In addition, fire protection facilities would be provided for new development through property taxes, developer agreements, and other General Fund revenue sources. Therefore, cumulative projects would not result in a significant cumulative impact.

The project does not include the provision of new fire protection facilities. The project would not result in permanent increases in residences or population; therefore, no additional fire protection facilities would be needed to maintain the performance objectives of the CFD. Therefore, the proposed project's contribution would not be cumulatively considerable.

3.15.5.2 Cumulative Threshold 2: Police Protection Services

The geographic context for the analysis of cumulative demand for police protection services and facilities is the CPD service area. A significant cumulative impact related to adverse effects on existing police protection services would occur if the development of future cumulative projects were to result in adverse effects on the CPD from either increased response times, physical deterioration of existing facilities, or lack of funding for the development of future facilities. As additional development occurs in the City, increases in the demand for police protection services would most likely require improvements to police protection facilities. However, these and other

cumulative projects would undergo discretionary review by local agencies and would be required to conform with applicable adopted land use plans, which are used as the bases to plan for adequate police protection services. In addition, police protection facilities would be provided for new development through property taxes, developer agreements, and other General Fund revenue sources. Therefore, cumulative projects would not result in a significant cumulative impact.

The proposed project does not include the provision of new police protection facilities. The project would not result in permanent increases in residences or population; therefore, no additional police facilities would be needed to maintain the performance objectives of the CPD. The proposed project's contribution would not be cumulatively considerable.

3.15.5.3 Cumulative Threshold 3: Public School Facilities

The geographic context for the analysis of cumulative impacts concerning schools is the CNUSD service area, which provide school services for school-age children in the City and neighboring areas. A significant cumulative impact related to adverse effects on school services would occur if future cumulative projects would generate an increase in population that would exceed CNUSD educational standards and result in degraded school facilities and services. Increased housing generated increased demands for schools, which could result in the need for new or expanded schools. Future development projects that increased housing would also be subject to CEQA, which would require they mitigate significant impacts to public services such as schools; and school projects would be subject to CEQA, which would require they mitigate significant impacts to the environment. In addition, future developments would be required to pay school impact mitigation fees in accordance with SB 50 for facility expansion and upgrades needed to serve new students. Therefore, a significant cumulative impact would not result in a significant cumulative impact.

The project would not result in permanent increase in the population and associated housing and would not result in a need for new or expanded school facilities. Therefore, the project would not interfere with the performance objectives of the CNUSD. The project's contribution would not be cumulatively considerable.

3.15.5.4 Cumulative Threshold 4: Libraries

The geographic context for the analysis of cumulative impacts in regards to library services is defined as the CPL service area. A potentially significant impact related to adverse effects on library services would occur if future cumulative projects were to result in adverse effects on the CPL from physical deterioration or lack of funding for the development of future facilities to meet the objectives of the CPL. Future development projects would be required to mitigate significant impacts to public services, including the CPL. Therefore, cumulative projects would not result in a significant cumulative impact.

The project would not contribute to a need for new or expanded library facilities because it would not result in increased population growth. Therefore, the project's contribution would not be cumulatively considerable.

3.15.6 Conclusion

As discussed previously, the projects identified in the 2018 RWMP would not include new public facilities (i.e., fire, police, schools, or libraries), and the project would not directly or indirectly induce substantial or unplanned population growth in the water service area that would require expanded public services. Therefore, no impact would occur.

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3.16 Recreation

This section discusses the potential impacts to recreation in the City of Corona's (City's) water service area that may result from the implementation of the 2018 Reclaimed Water Master Plan (project or 2018 RWMP). The analysis in this section is based in part on the following information: City of Corona 2020–2040 General Plan (City of Corona 2020).

3.16.1 Environmental Setting

The City offers a variety of parks and recreational services within the City's boundary. A range of public active and passive recreation opportunities are available, including the following.

3.16.1.1 Parks

The City has 37 public parks covering approximately 352 acres, exclusive of natural open space areas (Fresno Canyon, Sage Open Space, and other similar areas). This total includes the El Cerrito Sports Park because it is a joint-use facility with the County of Riverside that serves City residents. The public park system includes mini-, neighborhood, community, major, and special use parks that are differentiated by scale, population served, and amenities. In addition to developed parkland, the Fresno Canyon and Sage Open Space areas offer 67 acres of open space for walking, hiking, and bicycling.

Mini-Parks

Mini-parks are the smallest parks and are generally less than 2 acres in size. They provide passive open space and buffering from adjacent urban land uses. Park uses include sitting areas, play structures, walking trails, landscaping, rest areas, vista points, and picnic areas. The service area of mini-parks is less than a 0.25-mile radius.

Neighborhood Parks

Neighborhood parks are generally between 5 and 20 acres and are intended to serve the recreational needs of a population of 5,000. Uses can include playing courts, playing fields, sitting areas, picnic areas, restrooms, walking trails, landscaping, and parking. The service area is up to a 0.5-mile radius. The City's 24 neighborhood parks encompass 141 acres of parkland.

Community Parks

Community parks are 20 to 40 acres and are intended to serve the recreational needs of several neighborhoods. They can include passive and active recreation facilities or structured facilities (e.g., pools, gymnasiums, or community centers). Community parks are intended to have a service area of a 1- to 1.5-mile radius. The City's five community parks encompass approximately 90 acres.

Major Parks

Major (regional) parks are approximately 40 acres or more, but may be less, and are intended to serve the broadest range of active and passive recreational needs, as well as indoor and outdoor recreational needs, Citywide or regionally. Uses can include auditoriums, gymnasiums, recreation centers, organized sports fields, and playing courts. Currently, the City has two major parks: Butterfield Park, which is 43 acres, and Santana Regional Park, which is 47 acres.

Special Use Parks

Special use parks include parks and other City facilities that accommodate specialized recreational needs, such as dog parks or sports fields, or reflect important community values, such as a nature center or a heritage museum. Because of the specialized services, there is no established service area associated with a special use park. Examples of special use parks include the El Cerrito Sports Park, a regional sports park facility, and City Park, which contains a pool.

3.16.1.2 Recreation Facilities

The Circle City Center, located at 365 North Main Street, is one of the main community centers in the City. The facility includes a gymnasium/event hall, a fitness room, a game room, classrooms and meeting rooms, a banquet room, and a catering kitchen.

The Corona Senior Center offers an opportunity for adults 50 years of age and older to develop an extended family through a range of health and educational programs, human services, recreational and social activities, and special events throughout the year.

3.16.1.3 Joint-Use Facilities

Local public schools in the City offer active recreational facilities for public use after school hours. The City and the Corona-Norco Unified School District maintain formal public use agreements for several school facilities. Joint-use agreements allow for shared public use of school grounds and facilities after school hours and on weekends, which benefits the community by expanding the availability of recreational spaces for residents. In other cases, the City's parks and recreational facilities are also available for shared use by community groups. These facilities provide group-meeting spaces for a variety of passive and active uses.

3.16.1.4 Built and Natural Trails

Trails are a valued asset for many City residents who enjoy hiking, bicycling, and walking in the natural areas in and surrounding the community. The City of Corona 2020–2040 General Plan has established the following general classes of trails (City of Corona 2020):

Urban Trails

Urban trails are multi-purpose, hard surface, pedestrian, and bicycling routes that physically connect residential areas, parks, schools, commercial nodes, and employment centers. No inventory of urban trails has been developed for the City.

Historic Trails

Historic trails are intended as scenic walkways through older residential neighborhoods and downtown to promote appreciation of the City's heritage. In 2013, the City began exploring opportunities for a multi-use trail following the historic Butterfield Overland Stage route along the Temescal Wash, which would be one segment of a national historic trail that dates to stagecoach service in the 1850s.

Rural Trails

Rural and natural trails are defined as multi-purpose routes for hikers, bicyclists, and horseback riders that run along washes, railroad rights-of-way, or unimproved open space areas. Examples of these trails in the City include the proposed Santa Ana River Trail, which begins in the County of San Bernardino and continues along the Santa Ana River to Orange County. Natural trails include Coal Canyon, Skyline Drive, Tin Mine Canyon, Indian Truck Trail, El Cariso-Trabuco Peak, and the North Main Divide Road.

Bicycle Trails

Bicycle trails are routes adjacent to or on the outer edge of roadways. They are often integrated with urban and rural trails. They can also serve as important cycling commuter routes to areas of employment, shopping, schools, and parks.

3.16.2 Regulatory Setting

This section describes the federal, state, and local regulatory framework adopted to protect recreation.

3.16.2.1 Federal

There are no applicable federal regulations that apply to recreation.

3.16.2.2 State

Public Park Preservation Act

The primary instrument for protecting and preserving parkland is the state Public Park Preservation Act. Under the California Public Resource Code, cities and counties may not acquire any real property that is in use as a public park for any non-park use unless compensation or land, or both, is provided to replace the parkland acquired. This provides no net loss of parkland and facilities.

3.16.2.3 Local

City of Corona 2020–2040 General Plan

The following goals and policies in the City of Corona 2020–2040 General Plan are relevant to recreation (City of Corona 2020).

Land Use Element

Goal LU-1. A community that contains a diversity of land uses that support the needs of and provide a high quality of life for its residents, sustain and enhance the City's economy and fiscal balance, are supported by adequate community infrastructure and services, and are compatible with the environmental setting and resources.

Policy LU-1.1. Accommodate uses that support the diverse needs of Corona's residents, including opportunities for living, commerce, employment, recreation, education, culture, entertainment, civic engagement, and social and spiritual activity that are in balance with natural open spaces.

Goal LU-15. A mix of governmental service, institutional, educational, recreational, and utility facilities that support the needs of Corona's residents and businesses and improve the quality of life in the community.

Policy LU-15.1. Accommodate existing schools, parks, government, fire and police facilities, utility, and institutional uses suited to serving the local needs of Corona residents and business in accordance with the land use plan's designations and applicable design and development policies.

Policy LU-15.2. Allow for the development of new schools, parks, government, fire and police facilities, utility, and institutional uses in any location of the City, regardless of the land use plan's designation, provided the use is environmentally suitable and compatible with adjoining land uses, and adequate infrastructure can be provided.

Policy LU-15.4. Ensure that the City's public buildings, sites, and infrastructure are designed to be compatible in scale, mass, character, and architecture with the district and neighborhood in which they are located and pertinent design and development characteristics specified by this plan.

Parks, Recreation, Cultural Arts, and Education Element

Goal PR-6. A comprehensive and quality system of off-road hiking, biking, and equestrian trails that are, to the extent feasible, accessible to people of all ages, and connect residents to natural resources surrounding Corona.

Policy PR-6.3. Encourage creation of a multipurpose trail system for hiking, biking, and equestrian use in areas commonly used for these purposes, such as along washes, creeks, drainages, hillsides, parks, and other public use areas. Trails created within MSHCP [Multiple Species Habitat

Conservation Plan] conservation areas that are not identified as a covered activity in the Western Riverside County MSHCP are to avoid and minimize impacts on biological resources by following the Guidelines for the Siting and Design of Trails and Facilities [MSHCP Section 7.4.2].

Policy PR-6.8. Promote the safe use of trails and require infrastructure and other public rights-of-way to be designed and developed to accommodate trails in a manner that is safe and compatible with the intended primary use of the rights-of-way or easement, where feasible.

3.16.3 Thresholds of Significance

According to Appendix G of the California Environmental Quality Act Guidelines, a significant impact related to recreation would occur if the project would (CEQA Guidelines, Section 15000 et seq.):

1. 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.
2. Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

3.16.4 Environmental Analysis

3.16.4.1 Threshold 1: Deterioration of Parks and Recreational Facilities

Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Impact Analysis

Implementation of the projects identified in the 2018 RWMP is unlikely to result in conflicts with existing parks or recreation uses. The project does not propose the construction of new or expanded recreational facilities, which could result in adverse physical effects to the environment. Further, implementation of the project would not directly induce population growth, which could otherwise increase the use of existing neighborhood and regional parks. Although the projects identified in the 2018 RWMP would provide reclaimed water and indirectly serve planned population growth in the City, new development would be conditioned by the City of Corona 2040 General Plan, which supports new recreational facilities for new residents.

The project would not increase the use or demand for park or recreational facilities because the project does not include the development of uses that would place demands, such as residential dwellings or office employment, on these facilities.

Potential disruptions to existing recreational trails and bike paths in the water service area are addressed in Section 3.17, Transportation, in the context of alternative transportation. Where the

projects identified in the 2018 RWMP are adjacent to such uses, access would be maintained during construction as described in Mitigation Measure HAZ-2.

Level of Significance Before Mitigation

Implementation of the project would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated. No impact would occur.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Because no mitigation measures are required, no impact would occur.

3.16.4.2 Threshold 2: Construction or Expansion of Recreational Facilities

Would the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Impact Analysis

The project does not propose the construction of new or expanded recreational facilities, which could result in adverse physical effects to the environment. Furthermore, because implementation of the project would not contribute to increased population or dwelling units that would drive demand for recreational facilities in the City, the project would not result in the need for the construction or expansion of recreational facilities.

Level of Significance Before Mitigation

Implementation of the projects identified in the 2018 RWMP would not include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment. No impact would occur.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Because no mitigation measures are required, no impact would occur.

3.16.5 Cumulative Impacts and Mitigation

3.16.5.1 Cumulative Threshold 1: Deterioration of Parks and Recreational Facilities

The geographic context for increased use of existing neighborhood and regional parks or other recreational facilities is the City and adjacent communities. In general, cumulative projects in the region would result in a net increase in population, resulting in increased use of recreational facilities in the City and adjacent communities. However, as future residential development is proposed, the City would require developers to provide the appropriate amount of parkland or pay in-lieu fees, which would contribute to investments or improvements in existing parks and recreational facilities. Payment of these fees or implementation of facilities on a project-by-project basis would offset cumulative parkland impacts by providing funding for renovated parks equipment and facilities. In addition, the project would not result in additional population or housing that would increase demand that would result in deterioration of parks or recreational facilities. As such, the project's contribution would not be cumulatively considerable.

3.16.5.2 Cumulative Threshold 2: Construction or Expansion of Recreational Facilities

The geographic context for construction or expansion of new recreational facilities is the City and adjacent communities. Implementation of cumulative projects in the area would increase the demand for new or expanded recreational facilities. However, as future residential development is proposed, the City would require developers to provide the appropriate amount of parkland or pay in-lieu fees, which would contribute to future parks and recreational facilities that would accommodate planned growth. Payment of these fees or implementation of facilities on a project-by-project basis would offset cumulative parkland impacts by providing funding for new parks facilities. In addition, the project does not propose or require new parks or recreational facilities. As such, the project's contribution would not be cumulatively considerable.

3.16.6 Conclusion

Implementation of the project would not increase the use or demand for park or recreational facilities because the project does not include the development of uses that would place demands on these facilities, such as residential dwellings or office employment. There would be no direct or cumulative impacts.

Implementation of the project would not include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment. There would be no direct or cumulative impacts.

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3.17 Transportation

This section discusses the potential impacts to transportation in the City of Corona's (City's) water service area that may result from the implementation of the 2018 Reclaimed Water Master Plan (project or 2018 RWMP). The analysis in this section is based in part on the following information: City of Corona 2020–2040 General Plan (City of Corona 2020).

3.17.1 Environmental Setting

This section describes the environmental setting as it relates to transportation in the water service area. The project proposes reclaimed water facilities in various locations throughout the water service area.

3.17.1.1 Existing Transportation Network

Existing Roadways

Below is a description of regional and local access roads in the water service area.

Regional Roads

Interstate 15 Freeway (I-15). I-15 is an interstate highway that is oriented in the north–south direction. In the vicinity of the project, I-15 is a 10-lane facility.

State Route 91 (SR-91). SR-91 is a state highway that is oriented in the east–west direction. Near the study area, SR-91 is a 14-lane facility west of the I-15 interchange and narrows to a 9-lane facility east of the I-15 interchange. The SR-91 express lanes are built in the median of SR-91 and extend from the SR- 55 interchange to the I-15 interchange.

State Route 71 (SR-71). SR-71 is a 15-mile state highway between I-15/SR-57 and SR-91 and is oriented in the north–south direction. Near the study area, SR-71 is a four-lane facility.

Local Roadways

Sixth Street. Sixth Street is classified as a four-lane mixed-use boulevard, with a two-way center turn lane and Class II Bicycle Lanes. The roadway is an east–west facility that runs from SR-91 to South Main Street. 6th Street is one of the City's main corridors running through downtown.

Main Street. North Main is classified as a six-lane major arterial between Hidden Valley Parkway and West Sixth Street. South Main Street is classified as a special residential arterial and four-lane major arterial from East Grand Boulevard to Foothill Parkway. The roadway is a north–south facility that connects residences to major points of interest, such as the Corona – North Main Metrolink Station.

Magnolia Avenue. Magnolia Avenue is classified as a six-lane major arterial between South Main Street and East Sixth Street. The roadway is a northeast–southwest facility that provides access from the City of Corona to SR-91 and the City of Riverside. The roadway has a speed limit of 40 mile per hour and is surrounded by high-density residential, commercial, and mixed-use land uses.

Ontario Avenue. Ontario Avenue is classified as a two-lane collector from Paseo Grande to Mangular Avenue and is classified as a four-lane major arterial from Mangular Avenue to South Main Street. From South Main Street to I-15, Ontario Avenue is classified as a six-lane major arterial. The roadway is a major east–west corridor that provides access to the neighboring City of El Cerrito and connects to I-15.

Cajalco Road. Cajalco Road is classified as a four-lane secondary roadway from Masters Drive to Bedford Canyon Road and as a six-lane major arterial from Bedford Canyon Road to the eastern City limits. This roadway is an east–west connector and provides the City access to the Crossings at Corona, a major shopping center.

River Road. River Road is classified as a four-lane major arterial from Corydon Street to North Main Street. This roadway is northwest–southeast facility and connects the neighboring City of Eastvale to the north.

McKinley Street. McKinley Street is classified as four-lane major arterial from Park View Drive to Magnolia Avenue and is a north–south facility.

Grand Boulevard. Grand Boulevard, also known as "The Circle," is classified as a four-lane major arterial. The roadway was built in circular fashion and bisects South Main Street, East 6th Street, North Main Street, and West 6th Street.

Green River Road. Green River Road is classified as a six-lane major arterial from SR-91 to the Palisades Drive and as a four-lane major arterial from Palisades Drive to Paseo Grande. The northwest–southeast facility provides access to SR-91 that connects to the Counties of Orange and Riverside. In addition, Green River Road contains a Class II Bicycle Lane that connects to the Santa Ana River Path.

Foothill Parkway. Foothill Parkway is classified as four-lane secondary road from Paseo Grande to I-15. The roadway is an east–west facility that provides an alternative route that connects SR-91 to I-15. The westerly extension of Foothill Parkway, which extended the four-lane road from Lincoln Avenue to Paseo Grande approximately 2.5 miles, was completed in 2016. The roadway provides additional mobility options for City residents, especially those who frequently travel on the southern and western portions of the City.

El Cerrito Road. El Cerrito Road is classified as a four-lane secondary road. This roadway is an east–west facility that connects to I-15. El Cerrito Road transitions to Foothill Parkway west of I-15.

Lincoln Avenue. Lincoln Avenue is classified as a four-lane secondary road form Parkridge Avenue to Ontario Avenue and a four-lane major arterial from Ontario Avenue to Mountain Gate Drive. Lincoln Avenue is north–south facility that connects the City to SR-91.

Hidden Valley Parkway. Hidden Valley Parkway is classified as a four-lane secondary roadway from SR-91 to Parkview Drive. The facility helps connect I-15 and SR-91.

Existing Conditions

The existing traffic data are pulled from the City of Corona General Plan Update Traffic Impact Analysis (City of Corona 2020).

Intersections

Existing Year (2017) Conditions AM peak-period (6:00 a.m. to 8:00 a.m.) and PM peak-period (4:00 p.m. to 6:00 p.m.) intersection counts were collected at 34 study intersections. Existing traffic volumes, lane configurations, and signal timings were used to evaluate operations at the study intersections for existing AM and PM peak-hour conditions. Most of the study intersections currently operate at acceptable levels of service (LOS). The following study intersections currently operates at a deficient LOS during the peak hours:

- California Avenue and Foothill Parkway – PM peak hour (LOS F)
- Cajalco Road and Temescal Canyon Road – PM peak hour (LOS E)
- Temescal Canyon Road and I-15 northbound ramps – AM peak hour (LOS E)
- Sixth Street and Promenade Avenue – PM peak hour (LOS F)
- McKinley Street and Promenade Avenue – PM peak hour (LOS F)
- McKinley and Sixth Street/Magnolia Avenue – PM peak hour (LOS E)

At build out of the City of Corona 2020–2040 General Plan, the following intersections are forecast to operate at a deficient LOS during the peak hours:

- Magnolia Avenue and I-15 southbound ramps – AM peak hour (LOS E), PM peak hour (LOS E)
- El Cerrito Road and I-15 southbound ramps – PM peak hour (LOS F)
- El Cerrito Road and I-15 northbound ramps – AM peak hour (LOS F)

Roadway Segments

Average daily trip counts were used to evaluate roadway segment operations at the study locations for Existing Year (2017) Conditions. Most of the roadway segments currently operate at an acceptable LOS, except for the following locations:

- McKinley Street between Griffin Way and Magnolia Avenue (LOS F)
- Cajalco Road between Masters Drive and I-15 (LOS E)

At buildout of the City of Corona 2020–2040 General Plan, the following roadways are forecasted to operate at a deficient LOS:

- McKinley Street between Griffin Way and Magnolia Avenue (LOS E)
- Ontario Avenue between California Avenue and State Street (LOS F)

Existing Transit Facilities

Public transportation is a vital part of the circulation system in the City. Transit expands mobility options to residents who may not be able to afford or physically operate other means of travel, while some choose not to drive. The City's transit network includes intercity buses, local buses, demand-responsive service, and commuter rail, all of which help people move.

Corona Cruiser and Dial-A-Ride

The Corona Cruiser is a fixed route service operated by the City. The system travels along two routes in the City, which include the Red and Blue Lines. Bus routes connect with Riverside Transit Agency (RTA) buses, North Main Metrolink commuter train station, and Park & Ride lots. The local bus service provides access to major points of interest in the community such as Corona City Hall, Corona Public Library, shopping centers, and medical centers. More specifically, major trip generators include commercial and retail areas along McKinley Street and Sixth Street, the Crossings shopping area on Cajalco Road, medical facilities along Magnolia Avenues, El Cerrito Middle School, and Centennial High School.

The Dial-A-Ride program, which has been operated by the City since 1977, is an on-demand, shared-ride transit system. The service provides mobility to older adults and people with disabilities. Riders call ahead to schedule their trip and can receive curb-to-curb service in the City and neighboring County areas. Currently, the Dial-A-Ride program offers service Monday through Saturday. Characteristics, summarizes exiting users for local-serving transit services. The City continues to invest and improve local transit service.

Riverside Transit Agency

Most of the available public transportation is provided by the RTA. RTA provides four bus routes to the West Corona Metrolink Station, the City of Fullerton, the City of Murrieta, and the City of Lake Elsinore. Overall, RTA serves the City of Corona and 2,500 square miles in Western Riverside County and connects the Cities of Riverside, Norco, and Orange. RTA provides access to the Corona Park & Ride Lot, the West Corona Station on the Metrolink Commuter Rail system, and the commuter link express bus route (206) that travels the Cities of Corona, Lake Elsinore, Murrieta, and Temecula during the morning and evening peak hours.

Metrolink

Metrolink is a commuter rail program operated by the Southern California Regional Rail Authority, providing service from outlying suburban communities to employment centers, such as Burbank, Irvine, and downtown Los Angeles. The 91 Line and the Inland Empire/Orange County Line serve the Metrolink stations in West Corona and North Main Corona. The West Corona station is on Auto Center Drive near SR-91, and the North Main Corona station is on Blaine Street just east of North Main Street. The 91 Line provides access between the Cities of Riverside and Los Angeles, while the Inland Empire/Orange County Line provides access between the Cities of Irvine and Riverside.

Orange County Transportation Authority

The City is closely tied to the Counties of Orange and the Riverside job markets, which creates a demand for transit service. Orange County Transportation Authority has the Riverside/Corona to South Coast Metro Express Route 794 that uses the SR-91 and SR-55 freeways to connect the two counties. The bus route is an AM and PM peak-hour bus service that connect passengers to South Coast Plaza, Harbor Gateway Business Center, and several universities. Orange County Transportation Authority facilitates easy transfers by accepting RTA passes on the 794 bus route.

Paratransit

Paratransit is an alternative mode of flexible passenger transportation that does not follow fixed routes or schedules. Vans, mini-buses, and taxis are typically used to provide paratransit service. Paratransit services vary considerably on the degree of flexibility they provide their customers. At their simplest, they may consist of a taxi or small bus that will run along a more or less defined route and then stop to pick up or discharge passengers on request. At the other end of the spectrum (fully demand-responsive transport), the most flexible paratransit systems offer on-demand call-up door-to-door service from any origin to any destination in a service area.

Existing Bicycle Facilities

In 2001, the City developed and adopted a Bicycle Master Plan, which was recertified on March 15, 2006. The 2006 Bicycle Master Plan calls for bicycle lanes on various streets to increase emphasis on active transportation. Improving walking and bicycling facilities can improve their desirability for short distance trips, school trips, and recreational activities while also enhancing the City's urban environment. By shifting mode share to include higher rates of active travel, the City can reduce greenhouse gas emissions, promoting a healthy lifestyle, consistent with Assembly Bill 32.

The 2006 Bicycle Master Plan proposes bicycle facilities consisting of Class I to Class III throughout the City. Since the adoption of the plan, the City has developed an extensive network of bicycle lanes. The sections below describe the different types of bicycle facility classifications currently in use in the City:

- Class I Bikeways (Off-Street Bike Paths) are completely separate facilities designated for the exclusive use of bicyclists and pedestrians with minimal vehicle crossings. Currently, the City has five Class I bikeways at the following locations:
  - Parallel to SR-91, entering the Santa Ana River Trail
  - A path connecting West Foothill Parkway and Mangular Avenue
  - Skyline Drive Path
  - Along Foothill Parkway connecting Spring Meadow Drive and Heartland Way
  - Along Foothill from Border Avenue to Chase Drive
- Class II Bikeways (Bike Lanes) are striped lanes designated for the use of bicycles on a street or highway. Vehicle parking and vehicle and pedestrian cross-flow are permitted at designated locations. Class II Bikeways have also been employed as traffic calming measures throughout the City to assist in narrowing lane widths and limiting vehicle speeds.
- Class III Bikeways (Bike Routes) are only identified by signs or pavement markings. A bicycle route is meant for use by bicyclists and motor vehicle travel (i.e., shared use).

Existing Pedestrian Facilities

The suburban tract housing layout, ample parking, major through streets, and separation of land uses that compose a notable portion of the City encouraged an automobile-oriented community. Although walking may not be a viable form of transportation for errand trips, large neighborhood sidewalks provide a walking environment that accommodates walking trips for leisure and exercise.

3.17.2 Regulatory Setting

This section describes the federal, state, regional, and local regulatory framework adopted to address transportation.

3.17.2.1 Federal

There are no applicable federal regulations that apply to transportation.

3.17.2.2 State

Senate Bill 743

On September 27, 2013, Senate Bill (SB) 743 was signed into law, starting a process that fundamentally change transportation impact analysis as part of California Environmental Quality

Act (CEQA) compliance. The legislature found that, with the adoption of the SB 375, the state had signaled its commitment to encourage land use and transportation planning decisions and investments that reduce vehicle miles traveled (VMT) and, thereby, contribute to the reduction of greenhouse gas emissions as required by the California Global Warming Solutions Act of 2006 (Assembly Bill 32).

SB 743 eliminates auto delay, LOS, and other similar measures of vehicular capacity or traffic congestion as the sole basis for determining significant impacts under CEQA. As part of the new CEQA Guidelines, the new criteria "shall promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses" (California 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 CEQA Guidelines, VMT-related metrics that evaluate the significance of transportation-related impacts under CEQA for development projects, land use plans, and transportation infrastructure projects were required beginning 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 sole basis for determining transportation impacts under CEQA.

3.17.2.3 Regional

Regional Transportation Plan

The Southern California Association of Governments (SCAG) is a council of governments representing the Counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. SCAG is the federally recognized metropolitan planning organization for this region, which encompasses over 38,000 square miles.

SCAG is a regional planning agency and a forum for addressing regional issues concerning transportation, the economy, community development, and the environment. SCAG is also the regional clearinghouse for projects requiring environmental documentation under federal and state law. In this role, SCAG reviews proposed development and infrastructure projects to analyze their impacts on regional planning programs. Every 4 years, SCAG updates the Regional Transportation Plan for the six-county region that includes the Counties of Los Angeles, San Bernardino, Riverside, Orange, Ventura, and Imperial. On April 7, 2016, SCAG adopted the 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy, which encompasses three principles—mobility, economy, and sustainability—that work as the key to the region's future. The 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy outlines a development pattern for the region, which, when integrated with the transportation network and

other transportation measures and policies, would reduce greenhouse gas emissions from transportation (excluding goods movement). Current and recent transportation plan goals generally focus on balanced transportation and land use planning that:

- Maximize mobility and accessibility for all people and goods in the region
- Ensure travel safety and reliability for all people and goods in the region
- Preserve and ensure a sustainable regional transportation system
- Maximize the productivity of our transportation system
- Protect the environment and health of residents by improving air quality and encouraging active transportation (e.g., bicycling and walking)
- Encourage land use and growth patterns that facilitate transit and active transportation

Through implementation of the strategies in the Regional Transportation Plan/Sustainable Communities Strategy, SCAG anticipates lowering greenhouse gas emissions below 2005 levels by 8 percent by 2020, 18 percent by 2035, and 22 percent by 2040. Land use strategies to achieve the region's targets include planning for new growth around high-quality transit areas and "livable corridors" and creating neighborhood mobility areas to integrate land use and transportation and to plan for more active lifestyles (SCAG 2016).

Riverside County Transportation Commission – Congestion Management Program

In its role as the County of Riverside's (County's) Congestion Management Agency, the Riverside County Transportation Commission prepares and periodically updates the County's Congestion Management Program (CMP) to meet federal Congestion Management Process Guidelines. The CMP in effect in the County was approved by the Riverside County Transportation Commission in 2011. The CMP is currently under review and is planned to be incorporated in the Riverside County Transportation Commission's Long-Range Transportation Plan. Freeways and selected arterial roadways in the County are designated elements of the CMP system of highways and roadways. Riverside The County Transportation Commission has adopted a minimum LOS threshold of LOS E for CMP facilities on the regional system of roadways and highways.

Western Regional Council of Governments Transportation Mitigation Uniform Fee

The County has a Transportation Mitigation Uniform Fee, which is administered by the Western Regional Council of Governments. Under the Transportation Mitigation Uniform Fee, Western Regional Council of Governments collects fees from new development with the purpose of funding transportation improvements, such as roadway widening, new roadways, intersection improvements, and traffic signalization, to mitigate future growth.

3.17.2.4 Local

City of Corona 2020–2040 General Plan

The following goals and policies in the City of Corona 2020–2040 General Plan are relevant to transportation (City of Corona 2020).

Circulation Element

Goal CE-1. A roadway network of complete streets that provide accessibility for all users of all ages and abilities while maintaining context sensitivity to the land uses identified in the Land Use Element.

Policy CE-1.4. Design and employ traffic control measures to ensure City streets and roads function with safety and efficiency.

Policy CE-1.5. Maintain Level of Service D or better on arterial streets in the City. Develop and maintain a list of locations where LOS E or LOS F are considered acceptable and would be exempt from this level of service policy. Considerations for LOS exemption include lack of available right-of-way, environmental constraints, or other modes of travel (such as bicycle or pedestrians). Key locations identified for LOS exemption are:

- Green River Road at SR-91
- Lincoln Avenue at SR-91
- Main Street at SR-91
- Sixth Street, between East Grand Boulevard and West Grand Boulevard
- McKinley Avenue at SR-91
- Hidden Valley Parkway at I-15
- Magnolia Avenue at I-15
- Ontario Avenue at I-15
- El Cerrito Road at I-15
- Cajalco Road at I-15
- Weirick Road at I-15
- Other locations as approved by the City

Policy CE-1.10. Require a traffic analysis to be prepared in accordance with the City's adopted Traffic Impact Study Guidelines and require projects to mitigate impacts on the City's circulation system that exceed the City's adopted service thresholds for near term and future conditions.

Policy CE-1.11. Provide all residential, commercial, and industrial areas with efficient and safe access for emergency vehicles, including undeveloped areas or those on the hillsides in high or very high fire hazard severity zones.

Policy CE-1.12. Consider the effects on transportation systems of public utility improvements, including extensions of underground pipelines and overhead transmission lines and associated utility rights-of-way.

Policy CE-1.13. Ensure that, to the extent possible, all pipelines and electrical transmission lines are placed underground.

Goal CE-4. A public transportation system that provides mobility for residents and encourages use of public transportation as an alternative to automobile travel.

Policy CE-4.8. Encourage access to and the expansion of regional rail transportation facilities and services at the Metrolink stations to increase ridership.

Goal CE-5. Develop and maintain convenient bikeway and pedestrian systems to satisfy both recreational desires and transportation needs using a complete streets approach to accommodate users of all modes, abilities, and needs.

Policy CE-5.1. Provide for safety of bicyclists, equestrians, and pedestrians by adhering to national standards and uniform practices; adhere to accessibility requirements for people with disabilities.

Policy CE-5.2. Maintain existing pedestrian facilities and encourage new development to provide walkways between and through developments.

Policy CE-5.3. Provide for safe accessibility to and use of pedestrian facilities by people with disabilities to implement accessibility requirements under the American with Disabilities Act.

Policy CE-5.7. Use easements and/or rights-or-way along flood control channels, public utilities, railroads, and streets wherever possible for bikeways and equestrian and hiking trails.

City of Corona Development Impact Fees

The City's Capital Improvement Plans specify the types of improvements required to achieve circulation and their related goals, and the Capital Improvement Plans provide a schedule of activities needed to fund, construct, and rehabilitate such improvements. The City has adopted LOS D as the minimum acceptable standard for roadway facilities (intersections and roadway segments). At some key locations, such as at heavily traveled freeway interchanges, LOS E may be adopted as the acceptable standard on a case-by-case basis. Locations that may warrant the LOS E standard include Lincoln Avenue at SR-91, Green River Road at SR-91, Main Street at SR-91, McKinley Avenue at SR-91, Hidden Valley Parkway at I-15, Cajalco Road at I-15, and Weirick Road at I-15. In addition to payment of Transportation Mitigation Uniform Fees to the Western Regional Council of Governments is required.

The City requires payment of Development Impact Fees per residential unit or non-residential square footage for street and signal improvements in the City to fund transportation improvements to achieve the City's circulation goals.

3.17.3 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a significant impact related to transportation would occur if the project would (CEQA Guidelines, Section 15000 et seq.):

1. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities
2. Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)
3. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)
4. Result in inadequate emergency access

3.17.4 Environmental Analysis

3.17.4.1 Threshold 1: Conflict with Program, Plan, Ordinance, or Policy

Would the project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Impact Analysis

Construction

During project construction activities, traffic would be generated from two sources: truck trips to and from the work area and commute trips for the work crew. To address the worst-case construction scenario, construction trips are based on the Sampson Pipeline Project, which would require the most material required to be imported and exported per day. As described in Section 3.3.4.2, the Sampson Pipeline Project is estimated to result in 20 truck trips per day, which includes construction crews generating approximately 15 personal automobile trips per day. Construction-generated traffic would be temporary and would not result in long-term degradation in operating conditions on area roadways or at area intersections. Project-generated truck trips are minimal and would be spread over the course of the workday.

During construction, temporary full or partial lane closures may be necessary, especially for distribution pipeline projects. The full or partial lane closures could result in the redistribution of traffic along adjacent and surrounding roadways. Depending on the roadways affected, the redistribution of traffic could result in additional delays at one or more roadway segments or intersections. Therefore, construction-related activities associated with the project could result in a temporary and intermittent decrease in the LOS capacity of public streets that may require partial or full street closures. Public transit, pedestrian, and bicycle routes would be disrupted during

construction. In addition, individual projects would also have the potential to cause temporary disruption of access to residences and businesses along the construction route. During construction, the City would maintain, to the extent feasible, continuous, unobstructed, safe, and adequate pedestrian and vehicular access to and from public facilities (e.g., public utility stations and community centers). If normal access to these facilities is blocked by construction, an alternative access route would need to be provided. Although isolated, these impacts could be locally significant.

Operations

Following the implementation of the projects identified in the 2018 RWMP, affected roadways and driveways would be restored to pre-project conditions. Temporary asphalt material would be installed to allow traffic to use the roadway immediately after construction, followed by a permanent overlay. Once operational, the project would not result in any significant, long-term impacts to the local roadway network. In addition, project facilities would be incorporated into the existing maintenance schedule, which consists of daily maintenance checks for the pump stations and weekly maintenance checks for the water storage tanks. Therefore, the net increase in new vehicle trips would be minimal.

Level of Significance Before Mitigation

Implementation of the project would conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities, during construction activities and would result in a significant impact.

Mitigation Measures

The project would have a temporary significant impact associated with construction-related street closures that would be reduced to less than significant through the implementation of Mitigation Measure HAZ-3.

Significance After Mitigation

Implementation Mitigation Measure HAZ-3 would reduce the temporary impacts to local roadways during construction by requiring the construction contractor to prepare and implement a project-specific Construction Traffic Control Plan. Impacts would be less than significant.

3.17.4.2 Threshold 2: Vehicle Miles Traveled

Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

Impact Analysis

On May 1, 2019, the City adopted significance thresholds and methods to comply with SB 743 and is using this metric to determine transportation impacts associated with buildout of the City of Corona 2020–2040 General Plan. A project-level impact is considered significant if the buildout of the project increases the total daily VMT per service population (VMT/SP) above the baseline level (existing conditions) for the City.

According to the City of Corona 2020–2040 General Plan, the existing VMT/SP for the City and sphere of influence is 30 VMT/SP (City of Corona 2020).

Construction

During project construction activities, traffic would be generated from two sources: truck trips to and from the work area and commute trips for the work crew. To provide the worst-case construction scenario, construction trips are based on the Sampson Pipeline Project, which would require the most material required to be imported and exported per day. As described in Section 3.3.4.2, the Sampson Pipeline Project is estimated to result in 20 truck trips per day, which includes construction crews generating approximately 15 personal automobile trips per day. Based on the worst-case construction scenario assumed in the Air Quality Impact Analysis (Appendix B), worst-case VMT would be 118,062 miles. Based on the City of Corona 2015 Urban Water Management Plan population estimate, project construction activities would result in a VMT/SP of 0.71, which is below the existing conditions of 30 VMT/SP and would not induce substantial VMT (City of Corona 2015).

Operation

Once operational, the project would not generate a significant number of vehicle trips because the facilities do not require personnel to operate. The new facilities would be incorporated into the existing maintenance schedule, which consists of daily maintenance checks for the pump stations and weekly maintenance checks for the water storage tanks. Therefore, the operation of the project would not induce substantial VMT.

Level of Significance Before Mitigation

Implementation of the project would not conflict or be inconsistent with CEQA Guidelines, Section 15064.3(b). Impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Because no mitigation measures are required, impacts would remain less than significant.

3.17.4.3 Threshold 3: Increase in Hazards

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

Impact Analysis

Projects identified in the 2018 RWMP would not alter the physical configuration of the existing roadway network serving the area and would not introduce unsafe design features, such as sharp curves or dangerous intersections. The project would not introduce incompatible uses, such as farm equipment. Temporary lane closures during construction of the project are addressed in Section 3.17.4.1.

Level of Significance Before Mitigation

Implementation of 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). No impact would occur.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Because no mitigation measures are required, no impacts would occur.

3.17.4.4 Threshold 4: Inadequate Emergency Access

Would the project result in inadequate emergency access?

Impact Analysis

Construction

Construction of the projects identified in the 2018 RWMP would mainly occur in public roadway rights-of-way. During construction, temporary full or partial lane closures may be necessary, especially for distribution pipeline projects. The full or partial lane closures could result in the redistribution of traffic along adjacent and surrounding roadways. As construction progresses, access for emergency vehicles could be impaired as result of reduced roadway widths (or capacity) and increased volumes of construction-related traffic or redistributed traffic. As a result, construction could result in adequate emergency access.

Operations

Once constructed, the identified pipelines, water storage tanks, booster pump stations, and flow control improvements would be in or adjacent to existing facilities or rights-of-way. Trenches for pipeline installation would be backfilled with on-site material, and the surface elevation would be restored to match the original ground surface and pavement surface elevations. Therefore, operation of the project would not result in inadequate emergency access.

Level of Significance Before Mitigation

Implementation of the project would have the potential to result in inadequate emergency access during construction associated with partial or full street closures. Impacts would be potentially significant.

Mitigation Measures

Implementation of Mitigation Measure HAZ-3 would prepare and apply a Construction Traffic Control Plan that would allow for access for emergency vehicles to be maintained at all times. In addition, police, fire, and emergency services shall be notified of the timing, location, and duration of construction activities that could hinder or delay emergency access through the construction period.

Level of Significance After Mitigation

Implementation of Mitigation Measure HAZ-3 would reduce impacts to a less than significant level.

3.17.5 Cumulative Impacts and Mitigation

3.17.5.1 Cumulative Threshold 1: Conflict with Program, Plan, Ordinance, or Policy

The geographic scope of cumulative impacts for increases in traffic hazards is the water service area. Cumulative development projects are expected to substantially alter future traffic flows and patterns in the water service area. Development of cumulative projects would add to the long-term traffic volumes such that the capacities of some local roadways and intersections are projected to decline from existing levels. Potential traffic-related impacts associated with these other projects would be considered cumulatively significant. In addition, construction of the project, in combination with construction of cumulative projects, could result in the temporary additional delay at one or more roadway segments or intersections.

The project would involve the construction of reclaimed water facilities that would result in a temporary and intermittent decrease in the LOS capacity of public streets that may require partial or full street closures. Project operation would result in minimal traffic volumes associated with maintenance of project facilities. Where traffic impacts associated with construction activities would occur, Mitigation Measure HAZ-3 would also reduce these temporary impacts to a level less than significant. Therefore, the project's contribution to cumulative impact would not be cumulatively considerable, and cumulative impacts would be less than significant.

3.17.5.2 Cumulative Threshold 2: Vehicle Miles Traveled

The City has adopted a threshold of a no-net increase in VMT compared to the City of Corona 2020–2040 General Plan as the cumulative impact criteria. Development of cumulative projects could result substantial additional VMT that exceeds regional averages, which could result in a significant impact. Since the project would not add significant vehicle trips, the project's contribution to cumulative impact would not cumulatively considerable.

3.17.5.3 Cumulative Threshold 3: Increase in Hazards

The geographic scope of cumulative impacts for increases in traffic hazards is the water service area. A significant cumulative impact would occur if cumulative projects would create traffic hazards through design or incompatible uses. Cumulative projects would be required to be designed and constructed according to the applicable jurisdictions' roadway design standards, which would ensure that no significant impact would occur. Thus, cumulative projects would not result in a significant cumulative impact associated with increases in traffic hazards. Projects identified in the 2018 RWMP would not alter the physical configuration of the existing roadway network serving the area and would not introduce unsafe design features. Therefore, implementation of the project would not contribute to a cumulative considerable impact related to traffic hazards.

3.17.5.4 Cumulative Threshold 4: Inadequate Emergency Access

The geographic context for the analysis of cumulative impacts relative to inadequate emergency access would be the water service area. Cumulative projects have the potential to result in inadequate emergency access if they block access roads or if necessary off-site road improvements result in the closure of roads. Construction and operation associated with future development in the surrounding City could result in activities that could interfere in with emergency access, such temporary construction barricades or other design obstructions that could impede emergency access. Cumulative projects would be required to comply with the City's traffic control requirements. This includes designing a project during construction and operation to accommodate emergency vehicles that may need to access to the site for emergency response purposes. Compliance with applicable regulations would ensure that cumulative projects do not result in a significant impact associated with inadequate emergency access. Thus, cumulative projects would not result in a significant cumulative impact associated with inadequate emergency access. Mitigation Measure HAZ-3 would be implemented to reduce potentially significant impacts associated with temporary lane or road closures during construction. Therefore, the project's contribution would not be cumulatively considerable, and cumulative impacts would be less than significant.

3.17.6 Conclusion

Construction of the projects identified in the 2018 RWMP would have a temporary significant impact associated with construction-related partial or full street closures. Implementation of Mitigation Measure HAZ-3 would reduce the temporary impacts to local roadways during construction by requiring the construction contractor to prepare and implement a project-specific Construction Traffic Control Plan to less than significant. Once operational, the individual projects would not result in any significant, long-term impacts to the local roadway network. In addition, new facilities proposed as part of the 2018 RWMP would be incorporated into the existing maintenance schedule, and the net increase in new vehicle trips would be minimal. Direct and cumulative impacts would be less than significant with the incorporation of mitigation measures.

Implementation of the 2018 RWMP would not result in a net increase in VMT compared to existing conditions. Direct and cumulative impacts would be less than significant.

The project would not alter the physical configuration of the existing roadway network serving the area and would not introduce unsafe design features. Directs and cumulative impacts would be less than significant.

Construction projects associated with the project would have a temporary significant impact associated with inadequate emergency access due to construction-related partial or full street closures. Implementation of Mitigation Measure HAZ-3 would reduce the temporary impact to emergency access by requiring the construction contractor to prepare and implement a project-specific Construction Traffic Control Plan to less than significant. Direct and cumulative impacts would be less than significant with the incorporation of mitigation measures.

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3.18 Tribal Cultural Resources

This section discusses the potential impacts to tribal cultural resources (TCRs) in the City of Corona's (City's) water service area that may result from the implementation of the 2018 Reclaimed Water Master Plan (project or 2018 RWMP). The analysis in this section is based in part on the following information: Cultural and Tribal Cultural Resources Technical Report prepared by Red Tail Environmental (2020) for the project (Appendix D).

3.18.1 Environmental Setting

This section describes the environmental setting as it relates to TCRs for the water service area. The project proposes reclaimed water facilities in various locations throughout the water service area.

3.18.1.1 Ethnohistory

During the Ethnohistoric period, the region that is currently known as the County of Riverside (County) was a shared-use area and home to three closely related Takic-speaking groups: the Cahuilla, the Gabrielino, and the Luiseño/Juaneño. Settlement patterns for the three groups were very similar, with settlements typically in valley bottoms, along streams, or along coastal strands near mountain ranges. Villages were often in sheltered areas near good water supplies, in a defensive location, or on the side of warm thermal zone slopes.

Cahuilla

The Cahuilla traditional use area included the San Bernardino Mountains, Orocopia Mountains, and Chocolate Mountains to the east, the Salton Sea and Borrego Springs to the south, the eastern slopes of Palomar Mountain and Lake Mathews to the west, and the Santa Ana River to the north (Appendix D). The Cahuilla traditionally inhabited areas from the desert and valley floors to the mountain areas, which included drastically different environmental areas and resources. The water service area is along the western boundary of what would have been the Cahuilla traditional use area. Living inland, the Cahuilla had minimal contact with the Spaniards and were not as influenced to the extent that the coastal groups were, although the Asistencia at San Bernardino in 1819 did have several Cahuilla on their register.

Gabrielino

The largest, most powerful group in Southern California was the Gabrielino. Their traditional use area was centered in what is now the Los Angeles Basin and encompassed the Los Angeles, San Gabriel, and Santa Ana watersheds. Their range extended as far east as present day San Bernardino, west to the Santa Monica Mountains, south to Aliso Creek, and as far north as the San Fernando Valley. This group also occupied several Channel Islands, including Santa Barbara Island, Santa Catalina Island, San Nicholas Island, and San Clemente Island. The Gabrielino had access to

important resources, including a steatite source from Santa Catalina Island, and controlled the trade of materials and resources as far north as the San Joaquin Valley, east to the Colorado River, and as far south as Baja California. The Gabrielino came under the influence of two Spanish missions, Mission San Gabriel and Mission San Fernando, and most of the natives from the coastal areas and inland valleys were removed to these missions. According to the archaeological record, the Gabrielino were not the first inhabitants of the Los Angeles Basin but arrived in the area around 500 BC as part of the "Shoshonean (Takic) wedge" (Appendix D).

The water service area is in the southeastern boundary of the Gabrielino territory (Appendix D). The name "Gabrielino," which can also be spelled "Gabrieleno" or "Gabrieleño," describes the people who were governed by the Spanish from the Mission San Gabriel. In the post-contact period, Mission San Gabriel included natives of the greater Los Angeles area and members of surrounding groups such as Kitanemuk, Serrano, and Cahuilla.

Luiseño/Juaneño

The traditional use area of the Luiseño encompassed approximately 1,500 square miles and extended in a north-northeasterly direction from Agua Hedondia Lagoon to Aliso Creek and to the east, including what are currently known as Oceanside, Vista, San Marcos, Escondido, Palomar Mountain, and the Gujieto, a portion of Valle de San José, and north to Soboba and Temescal (Appendix D). The Luiseño was designated based on their association with the Mission San Luis Rey, while the Juaneño are associated with the Mission San Juan Capistrano, however Bean and Shipek (1978, as cited in Appendix D) state that the Luiseño and Juaneño are ethnologically and linguistically similar and that the distinction is based on the influence of the mission system. The water service area is adjacent to the northern boundary of the Luiseño/Juaneño traditional territory.

3.18.1.2 Tribal Cultural Resources

TCRs are defined as "sites, features, places, cultural landscapes, sacred places, and objects" that are of cultural value to a California Native American tribe and that are either on or determined eligible for inclusion on the California Register of Historical Resources or a local register of historic resources. In addition, a resource determined by a lead agency, at its discretion and supported by substantial evidence, to be significant under the criteria set forth in subdivision (c) of the California Public Resource Code, Section 5024.1, is a TCR under the California Environmental Quality Act (CEQA) (California Public Resources Code, Section 21074).

A sacred lands file search conducted by the Native American Heritage Commission (NAHC) was requested on March 30, 2020. The NAHC responded on April 2, 2020, that the results were positive and provided a list of 37 tribal organizations and individuals to contact for additional information. Red Tail Environmental sent information request letters to the 37 tribal organizations and individuals on April 6, 2020.

To date, three responses have been received. On April 14, 2020, Jill McCormick, Historic Preservation Officer for the Fort Yuma Quechan Tribe, responded that the tribe has no comments on the project. Cheryl Madrigal, Tribal Historic Preservation Officer and Cultural Resources Manager for the Rincon Band of Luiseño Indians, responded that the project is within the territory of the Luiseño people and within the band's specific area of historic interest. They have identified Luiseño place names but no known TCRs or traditional cultural properties in the water service area. They recommend that an archaeological/cultural resources study be conducted and a final copy of the study be provided to the band for their review and comment and inclusion of appropriate provisions for inadvertent discoveries. On June 9, 2020, Patricia Garcia Plotkin, Director of Historic Preservation for the Agua Caliente Band of Cahuilla Indians, responded that the project is not within the tribe's traditional use area and that they defer to other tribes in the area. This information was provided to the City.

Government-to-government consultation pursuant to AB 52 was initiated on September 14, 2020, a letter was sent to each tribal contact by the City with a summary and maps of the project, and a request for consultation. The letter provided contact information for the City of Corona, Public Works Department, and a request that the Tribe contact the City within 30 days if they would like to begin formal consultation.

3.18.2 Regulatory Setting

This section describes the federal, state, and local regulatory framework adopted to protect TCRs.

3.18.2.1 Federal

Archaeological Resources Protection Act

The Archaeological Resources Protection Act of 1979 regulates the protection of archaeological resources and sites which are on federal lands and Native American lands.

Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act is a federal law passed in 1990 that provides a process for 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 and culturally affiliated Native American tribes.

3.18.2.2 State

Assembly Bill 52

Assembly Bill 52 took effect July 1, 2015, and requires inclusion of a new section in CEQA documents titled "Tribal Cultural Resources," which includes heritage sites. Under Assembly Bill 52, a TCR is defined in a similar way to tribal cultural places under Senate Bill (SB) 18—sites, features, places,

cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either included or eligible for inclusion in the California Register of Historical Resources or included in a local register of historic resources. Alternatively, the lead agency, supported by substantial evidence, may choose at its discretion to treat the resource as a TCR.

Assembly Bill 52 requires consultation with tribes at an early stage to determine whether the project would have an adverse impact on the TCR and mitigation to protect them. Per Assembly Bill 52, within 14 days of deciding to undertake a project or determining that a project application is complete, the lead agency must provide formal written notification to all tribes who have requested it. The tribe then has 30 days of receiving the notification to respond if it wishes to engage in consultation. The lead agency must initiate consultation within 30 days of receiving the request from the tribe. Consultation concludes when both parties have agreed on measures to mitigate or avoid a significant effect to a tribal cultural resource, or a party, after a reasonable effort tin good faith, decides that mutual agreement cannot be reached. Regardless of the outcome of consultation, the CEQA document must disclose significant impacts on TCRs and discuss feasible alternatives or mitigation that avoid or lessen the impact.

California Health and Safety Code

The discovery of human remains is regulated by California Health and Safety Code, Section 7050.5, which states that:

> In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation . . . until the coroner . . . has determined . . . that the remains are not subject to . . . provisions of law concerning investigation of the circumstances, manner and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible . . . .
>
> The coroner shall make his or her determination within two working days from the time the person responsible for the excavation, or his or her authorized representative, notifies the coroner of the discovery or recognition of the human remains. If the coroner determines that the remains are not subject to his or her authority and…has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission.

California Public Resources Code

Archaeological resources are protected pursuant to a wide variety of state policies and regulations enumerated under the California Public Resources Code. In addition, cultural resources are recognized as a nonrenewable resource and, therefore, receive protection under the California Public Resources Code and CEQA. California Public Resources Code, Sections 5097.9–5097.991, provides protection to Native American historic and cultural resources and sacred sites and

identifies the powers and duties of the NAHC. It also requires notification of discoveries of Native American human remains and descendants and provides for treatment and disposition of human remains and associated grave goods.

California Senate Bill 18

Existing law provides limited protection for Native American prehistoric, archaeological, cultural, spiritual, and ceremonial places. These places may include sanctified cemeteries, religious, ceremonial sites, shrines, burial grounds, prehistoric ruins, archaeological or historic sites, Native American rock art inscriptions, or features of Native American historic, cultural, and sacred sites. SB 18 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 Americans tribes in the land planning process for the purpose of preserving TTCP. The Final Tribal Guidelines recommends that the NAHC provide written information as soon as possible but no later than 30 days 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 or may not include tribes listed by the NAHC who have requested consultation. If the NAHC, the tribe, and interested parties agree on the mitigation measures necessary for the proposed project, the mitigation measures would be included in the project's Environmental Impact Report. For the project, if both the City and the tribe agree that adequate mitigation or preservation measures cannot be taken, neither party is obligated to take action.

Per SB 18, a city or county is required to consult with the NAHC and any appropriate Native American tribe 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 or 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 California 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.) In addition, 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 protecting their cultural places.

3.18.2.3 Local

There are no applicable local regulations that apply to TCRs.

3.18.3 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a significant impact related to TCRs would occur if the project would (CEQA Guidelines, Section 15000 et seq.):

1. Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:
    a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k).
    b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

3.18.4 Environmental Analysis

3.18.4.1 Threshold 1: Tribal Cultural Resources

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

> ***a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k).***
>
> ***b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.***

Impact Analysis

The significance of a cultural resource is impaired when a project demolishes or materially alters those physical characteristics that convey significance. Impacts to TCRs, archaeological resources, or human remains most often occur as the result of trenching and grading. These resources may also be subject to indirect impacts as the result of project-related activities that increase erosion, compression, or accessibility. Under CEQA, an effect on nonphysical values (such as tribal values or other spiritual or religious values) is not considered an environmental effect; however, when a project would result in a physical effect, these values may be considered in determining whether the physical effect is significant.

A scared sacred lands file search conducted by the NAHC was requested on March 30, 2020. The NAHC responded on April 2, 2020, that the results were positive and provided a list of 37 tribal organizations and individuals to contact for additional information. Red Tail Environmental sent information request letters to the 37 tribal organizations and individuals on April 6, 2020. To date, three responses have been received. Jill McCormick, Historic Preservation Officer for the Fort Yuma Quechan Tribe, responded on April 14, 2020, that the tribe has no comments on the project. Cheryl Madrigal, Tribal Historic Preservation Officer and Cultural Resources Manager for the Rincon Band of Luiseño Indians, responded that the project is within the territory of the Luiseño people and within the band's specific area of historic interest. They have identified Luiseño place names but no known TCRs or traditional cultural properties in the water service area. They recommend that an archaeological/cultural resources study be conducted and a final copy of the study be provided to the band for their review and comment and inclusion of appropriate provisions for inadvertent discoveries. On June 9, 2020, Patricia Garcia Plotkin, Director of Historic Preservation for the Agua Caliente Band of Cahuilla Indians, responded that the project is not located within the tribe's traditional use area and they defer to other tribes in the area.

A review of the Sacred Lands File held by the Native American Heritage Commission was requested on March 30, 2020. On April 2, 2020, the NAHC responded that the review of the Sacred Lands File was positive. The NAHC provided contact information for 37 Native American tribes that are traditionally and culturally affiliated with the geographic area of the project. On April 6, 2020, letters were forwarded to the tribes requesting additional information on the project area of any concerns they may have related to the project. Three responses have been received. Jill McCormick, Historic Preservation Officer for the Fort Yuma Quechan Tribe, responded on April 14, 2020, that the tribe has no comments on the project. Cheryl Madrigal, Tribal Historic Preservation Officer and Cultural Resources Manager for the Rincon Band of Luiseño Indians, responded that the project is within the territory of the Luiseño people and within the Band's specific area of historic interest. They have identified Luiseño place names within the project area but no known tribal cultural resources or traditional cultural properties, and they recommend an archaeological/cultural resources study be conducted and a final copy of the study be provided to

the Band for their review and comment, as well the inclusion of appropriate provisions for inadvertent discoveries. On June 9, 2020, Patricia Garcia Plotkin, Director of Historic Preservation, Agua Caliente Band of Cahuilla Indians, responded that the project is not located within the tribe's traditional use area, they defer to other tribes in the area, and this concludes their consultation efforts. This information was provided to the City.

Government-to-government consultation pursuant to AB 52 was initiated on September 14, 2020, and a letter was sent to each tribal contact by the City with a summary and maps of the project and a request for consultation. The letter provided contact information for the City of Corona, Public Works Department, and a request that the tribe contact the City within 30 days if they would like to begin formal consultation.

Based on the historic and archival research conducted for the project, historic resources as defined in California Public Resources Code, Section 5020.1(k), may be present in the water service area as described in Section 3.5.1.5 in Section 3.5, Cultural Resources. Construction of the projects identified in the 2018 RWMP would largely occur in existing roadway rights-of-way and developed areas. The demolition or direct physical alteration of potential historic structures, historic districts, or other built environment resources would be unlikely based on the type of facilities included in the project. However, construction activities could adversely impact buried known or previously unrecorded cultural resources that may be eligible to the California Register of Historical Resources or Corona Register.

As discussed in Section 3.5.4.2 in Section 3.5, much of the water service area has been identified as having a moderate to high sensitivity for cultural resources. Trenching, grading, and other construction activities would involve ground-disturbing construction activities that would occur within 100 feet of potentially significant known or unknown archaeological resources and could potentially cause disturbance to TCRs. Table 3.5-4, Cultural Sensitivity and Known Resource Locations for the 2018 RWMP Projects, in Section 3.5 identifies the projects that are within 100 feet of a known archaeological resource. Therefore, ground disturbance associated with the projects identified in the 2018 RWMP would potentially unearth previously unknown or unrecorded TCRs.

Once constructed, the projects identified in the 2018 RWMP would not have the potential to cause additional impacts to TCRs. Typical operation and maintenance activities would not result in additional physical impacts.

Level of Significance Before Mitigation

Implementation of the project has the potential to damage or destroy unknown subsurface TCRs, which could result in a substantial adverse change in the significance of a TCR as defined in

California Public Resources Code, Section 21074. Therefore, impacts related to TCRs would be potentially significant.

Mitigation Measures

Mitigation Measures CUL-2, CUL-3, and CUL-4 in Sections 3.5.4.2 and 3.5.4.3 in Section 3.5 would be implemented to reduce impacts to TCRs. Mitigation Measure CUL-2 would require site-specific archaeological surveys to be conducted for individual projects identified in the 2018 RWMP, which would be located in areas that have not been previously developed and that would impact land with visible ground surface, or projects that may impact built environment resources that meet the age threshold for eligibility. If any resource are identified, they should be evaluated for significance. Mitigation Measure CUL-3 requires an archaeological and Native American monitoring program for projects identified in the 2018 RWMP, which would result in new ground disturbance in areas identified as moderate or high sensitivity for cultural resources and for projects identified in the 2018 RWMP that are within 100 feet of previously recorded archaeological resources. The identification of TCRs during construction activities would occur through implementation of Mitigation Measure CUL-4. Mitigation Measure CUL-4 requires that, in the event that possible human remains are encountered during any work associated with the project, ground disturbance within 25 feet of the remains shall halt, and California Environmental Quality Act Guidelines, Section 15064.5(e); California Public Resource Code, Section 5097.98; and California Health and Safety Code, Section 7050.5, shall be followed. See Sections 3.5.4.2 and 3.5.4.3 in Section 3.5 for a complete description of these mitigation measures.

Level of Significance After Mitigation

Implementation of Mitigation Measures CUL-2, CUL-3, and CUL-4 would reduce impacts to TCRs to a less than significant level.

3.18.5 Cumulative Impacts and Mitigation

3.18.5.1 Cumulative Threshold 1: Tribal Cultural Resources

Cumulative projects in the County region have the potential to result in a cumulative impact associated with the loss of TCRs through development activities that could cause a substantial adverse change in the significance of a TCR. These sites may contain artifacts and resources associated with tribal cultural values and religious beliefs. Any cumulative projects that involve ground-disturbing activities have the potential to result in significant impacts on TCRs. Therefore, the cumulative destruction of TCRs from planned construction and development projects in the County region would be cumulatively significant.

There is the potential for construction of the projects identified in the 2018 RWMP to result in significant impacts to unknown subsurface TCRs. This potentially significant impact would be mitigated to a less than significant level with the implementation of Mitigation Measures CUL-2, CUL-

3, and CUL-4, which require the evaluation of any feasible means of reducing disturbance to TCRs, monitoring during construction, and repatriation of materials associated with TCRs. Therefore, by applying mitigation, the project's contribution would not be cumulatively considerable.

3.18.6 Conclusion

Implementation of the project has the potential to damage or destroy unknown subsurface TCRs, which could result in a substantial adverse change in the significance of a TCR as defined in California Public Resources Code, Section 21074(e). Therefore, impacts related to TCRs would be significant. Mitigation Measures CUL-2, CUL-3, and CUL-4 would be implemented to reduce direct and cumulative impacts to a less than significant level.

3.19 Utilities and Service Systems

This section discusses the potential impacts to utilities and service systems in the City of Corona's (City's) water service area that may result from the implementation of the 2018 Reclaimed Water Master Plan (project or 2018 RWMP). The analysis in this section is based in part on the following information: 2018 RWMP (City of Corona 2018) and City of Corona 2020–2040 General Plan (City of Corona 2020a).

3.19.1 Environmental Setting

This section describes the environmental setting as it relates to utilities and service systems in the water service area. The project proposes reclaimed water facilities in various locations throughout the water service area.

3.19.1.1 Wastewater

The City is the primary provider of sewer and sanitation services to the City. The City's Department of Water and Power (DWP), Wastewater Division, serves a population of approximately 168,000 people over 38.5 square miles. The City's sewer system is composed of 13 sewer lift stations and associated force mains, 3 water reclamation facilities, and a network of gravity sewer pipes of approximately 368 miles, with sizes ranging from 6 inches to 42 inches in diameter. Approximately 83 percent of City pipes are 8 inches in diameter. The El Cerrito area is currently on septic systems. The City has a capacity to treat up to 2.62 million gallons per day of wastewater (WRCRWA 2019).

The City operates three water reclamation facilities; the effluent produced meets criteria for discharge to percolation ponds, Temescal Creek, and California Title 22 reuse. The City's wastewater treatment plants are as follows:

- **Water Reclamation Facility 1 (WRF1):** WRF1 consists of preliminary treatment, two secondary treatment facilities (Plant 1A and 1B), and a tertiary treatment facility. The tertiary process produces Title 22 recycled water that can be used for irrigation or is discharged to Butterfield Drain, a tributary of Temescal Creek.
- **Water Reclamation Facility 2 (WRF2):** WRF2 was formerly called "Sunkist Treatment Plant" and was used to treat industrial process wastewater. The City purchased the plant and renovated it to provide primary and secondary treatment. In 1988, WRF2 became operational. WRF2 is a conventional activated sludge facility with the ability to bypass flows to WRF1. It discharges secondary effluent to the Lincoln and Cota Street percolation ponds.
- **Water Reclamation Facility 3 (WRF3):** WRF3 was constructed in 2001 and serves the southeastern portion of the City. WRF3 is a water reclamation plant that provides Title 22 reclaimed water reuse.

3.19.1.2 Water Supply

The City's DWP has the authority and responsibility to provide potable water service in the water service area. The City receives water from two main sources: (1) groundwater from three basins managed by the City's DWP and (2) imported water from the Western Municipal Water District. The groundwater basins, including the Coldwater Basin, Temescal Basin, and Bedford Basin, provide approximately 40 percent of the City's water supply from 22 wells with a total capacity of 39,200 acre-feet per year (af/yr) (35 million gallons per day). The remaining 60 percent of the City's water supply is imported from the Western Municipal Water District through the Lower Feeder Pipeline (raw Colorado River water) and Mills Pipeline Connection (treated state project water). The total capacity of the imported water supply is 39,840 af/yr (35.6 million gallons per day).

The City's water system contains six primary pressure zones ranging from a minimum elevation of 430 feet to a maximum elevation of 1,640 feet above mean sea level (Figure 1-1, Existing Reclaimed Water System, in Chapter 1, Introduction). The total storage capacity of the City's 16 reservoirs is approximately 43.3 million gallons (Fuscoe 2018). The City DWP's service zones are interconnected between reservoirs and supply sources by major transmission pipelines ranging from 12 inches to 36 inches in diameter.

3.19.1.3 Reclaimed Water

Refer to Chapter 1 for a detailed discussion of the City's existing reclaimed water system.

3.19.1.4 Stormwater

The storm drain system in the City is composed of the following six main storm drain facilities:

- **Temescal Canyon Wash** is the major watercourse and flows northwesterly through the northern half of the City. Temescal Canyon Wash joins the Santa Ana River at the site of Prado Dam, a U.S. Army Corps of Engineers flood control reservoir. This reservoir is at the northwestern City limits.
- **Oak Street Channel** traverses generally from the Oak Street Debris Basin northerly across State Route 91 and terminates at the Temescal Canyon Wash. The channel is generally an open, rectangular, concrete-lined section with various culvert crossings at the major streets.
- **Main Street Channel** traverses through the southeasterly corner of the City and consists of a concrete-lined, rectangular channel at the upstream end. It joins the Temescal Canyon Wash at Sixth Street.
- **Arlington Channel** consists of a vertical wall, concrete-lined section that flows west through the Home Gardens area and joins Temescal Canyon Wash near the Atchison, Topeka, and Santa Fe Railroad, north of State Route 91.

- **South Norco Storm Drain** runs from southwest of Norco through Parkridge Avenue at the City limit and terminates at Temescal Canyon Wash.
- **North Norco Storm Drain** enters the City limits at River Road and terminates at Temescal Canyon Wash.

Other facilities include the Main, Oak, and Mabey Basins; the Line 36 storm drain; the Line 7-A storm drain; and the Compton Avenue storm drain. Storm drainpipes range from 12- to 102-inch-diameter pipes in the City.

3.19.1.5 Solid Waste

The City contracts with Waste Management, Inc., for trash and recycling services. In 2018, 256,311 tons of solid waste and 152 tons of alternative daily cover from the City were landfilled (CalRecycle 2019a). The water service area is served by the El Sobrante Landfill in the City and the Olinda Alpha Landfill in the City of Brea. According to the County of Riverside, Department of Waste Resources, El Sobrante Landfill is privately owned and is permitted through 2051 (RCDWR 2020). It has a remaining capacity of 143,977,170 cubic yards and a maximum permitted throughput of 16,054 tons (CalRecyle 2019b). Olinda Alpha Landfill is operated by the Orange County Waste and Recycling Department and is permitted through 2021. It has a remaining capacity of 34,200,000 cubic yards and a maximum permitted throughput of 8,000 tons (CalRecyle 2019c).

The City's waste management efforts include waste prevention (or "source reduction"), recycling and composting, and combustion or disposal of waste into landfills. The City's waste management efforts center around the following programs: mandatory recycling for residential, commercial, and multi-family uses; household hazardous waste and electronic waste program; organics, mulch, compost, and tree recycling; bulky item pickup; waste oil and filter program; and construction and demolition recycling. As of 2017, 41 solid waste diversion programs were in the City, including those for composting, household hazardous waste collection, public education programs, recycling, source reduction at businesses and schools, and special waste materials, such as tires and concrete, asphalt, and rubble (CalRecycle 2019d).

3.19.2 Regulatory Setting

This section describes the federal, state, and local regulatory framework adopted to address utilities and service systems.

3.19.2.1 Federal

Safe Water Drinking Act

The federal Safe Drinking Water Act regulates the nation's drinking water and gives the U.S. Environmental Protection Agency the authority to set national drinking water standards and regulations. 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 U.S. Environmental Protection Agency when a maximum contaminant level is exceeded. Contaminants include organic and inorganic chemicals, substances that are known to cause cancer, radionuclides, and microbial contaminants (e.g., coliform and E. coli). The California Department of Public Health is responsible for implementation of the Safe Drinking Water Act in California.

3.19.2.2 State

Assembly Bill 341

In 2011, the state legislature enacted Assembly Bill (AB) 341 (California Public Resources Code, Section 42649.2), increasing the diversion target to 75 percent statewide. AB 341 also requires the provision of recycling service to commercial facilities that generate 4 cubic yards or more of solid waste per week and multi-family residences with five or more units.

Assembly Bill 939

AB 939, the California Integrated Waste Management Act of 1989, establishes the current organization, structure, and mission of California's Department of Resources Recycling and Recovery (CalRecycle) as an integrated waste management hierarchy that consists of the following (in order of importance): source reduction, recycling, composting, and land disposal of solid waste. AB 939 requires cities and counties in the state to reach a 50 percent waste reduction goal by the year 2000 and beyond. It also requires counties to develop an Integrated Waste Management Plan that describes local waste diversion and disposal conditions, and lays out realistic programs to achieve the waste diversion goals.

Assembly Bill 1826

In October 2014, Governor Brown signed AB 1826, Chesbro (Chapter 727, Statutes of 2014), requiring businesses to recycle their organic waste on and after April 1, 2016, depending on the amount of waste they generate per week. Organic waste means food waste, green waste, landscape and pruning waste, non-hazardous wood waste, and food-soiled paper waste that is mixed in with food waste. For businesses that generate 84 cubic yards or more of organic solid waste per week, this requirement began April 1, 2016, while those that generate 4 cubic yards of organic waste per week must have had an organic waste recycling program in place beginning January 1, 2017. The requirement becomes more stringent in following years. Multi-family properties are regulated but are only required to divert green waste and non-hazardous wood waste. This law also requires local jurisdictions across the state to implement an organic waste recycling program to divert organic waste generated by businesses, including certain multi-family residential units, starting January 1, 2016. Mandatory recycling of commercial organics would be phased in over time, and an exemption process is available for rural counties.

Assembly Bill 1881

AB 1881, the Water Conservation in Landscaping Act of 2006, requires the California Department of Water Resources to prepare an updated Model Water- Efficient Landscaping Ordinance (Model Ordinance) in accordance with specified requirements to conserve water through efficient irrigation and landscaping. By January 1, 2010, local agencies were to adopt either the updated Model Ordinance or a local Landscape Ordinance that is at least as effective in conserving water as the Model Ordinance.

Senate Bills 221 and 610

On January 1, 2002, SB 221 and SB 610 amended state law to improve the link between information on water supply availability and certain land use decisions made by cities and counties. SB 221 requires water suppliers to prepare written verification that sufficient water supplies are planned to be available before approval of large-scale subdivisions. SB 610 requires water suppliers to prepare a water supply assessment for land use agencies to include in the California Environmental Quality Act (CEQA) process for new developments. As stated in SB 610, the assessment must evaluate water supplies that are or will be available during normal, single dry, and multiple dry years during a 20-year projection to meet existing and planned future demands, including the demand associated with the project. The assessment includes, among other information, an identification of existing water supply entitlements, water rights, or other water service contracts relevant to the identified water supply for the project and water received in prior years pursuant to those entitlements, rights, and contracts, and a description of the quantities of water received in prior years by the public water system. Large-scale projects include residential development projects that include more than 500 residential units or shopping centers or business establishments resulting in a net increase of more than 1,000 employees or more than 500,000 square feet of floor space. The project does not require an SB 221 or SB 610 assessment.

Senate Bill 1374

SB 1374 seeks to assist jurisdictions with diverting their construction and demolition of waste material, with a primary focus on CalRecycle developing and adopting a Model Waste Material Diversion Ordinance for voluntary use by California jurisdictions. CalRecycle has developed a Model Construction and Demolition (C&D) Diversion Ordinance, as required by Senate Bill 1374 (Kuehl, Chapter 501, Statutes of 2002), to assist jurisdictions with diverting their C&D waste material. Jurisdictions are not required to adopt their own C&D Ordinance or CalRecycle's Model Ordinance as their own by default. However, SB 1374 also added a new set of circumstances (related to C&D waste diversion) to those previously included in California Public Resources Code, Section 41850, that CalRecycle shall consider when determining whether to impose a fine on a jurisdiction that has failed to implement its Source Reduction and Recycling Element.

Urban Water Management Planning Act (California Water Code, Division 6, Part 2.6, Section 10610 et. seq.)

The Urban Water Management Planning Act was developed due to concerns for potential water supply shortages throughout California. It requires information on water supply reliability and water use efficiency measures. As part of the act, urban water suppliers are required to develop and implement Urban Water Management Plans (UWMPs) to describe their efforts to promote the efficient use and management of water resources. The City prepared a UWMP in 2015.

3.19.2.3 Local

City of Corona 2005 Water Master Plan

The City's 2005 Water Master Plan was prepared to describe the water distribution system in the City, identify system deficiencies, and recommend improvements. Improvements to address water system deficiencies were added to the City's Capital Improvement Program list for funding and construction. The Capital Improvement Program prioritizes projects based on system needs and phasing, and acts as a long-term planning tool to facilitate construction of recommended projects to keep pace with City growth and demands (City of Corona 2005a).

City of Corona 2005 Sewer Master Plan

The City's 2005 Sewer Master Plan delineates the major components of long-term Capital Improvement Programs for improvement of existing wastewater collection and pumping facilities to serve planned growth in the City. Future flow projections were developed based on land use to determine the recommended upgrades to the existing collection system to adequately serve the City's system under completely built-out conditions under the City of Corona 2004 General Plan (City of Corona 2005b).

City of Corona 2015 Urban Water Management Plan

The City prepared and periodically updates its comprehensive 2015 UWMP to ensure careful planning to address water needs for the water service area. The 2015 UWMP is designed to sustainably manage the City's water supply to exceed demand through 2040, assuming a population of 182,800 residents. In 2040, the City anticipates to import approximately 28,365 af/yr of water, have approximately 25,400 af/yr available in the Coldwater and Temescal Basins, and have 10,000 af/yr of reclaimed water available for non-potable use. The total supply projected for 2040 is 56,396 af/yr (City of Corona 2016).

Chapter 8, Water Shortage Contingency Planning, of the 2015 UWMP indicates the City's authority to impose water use constraints on end users to ensure sustainability under stressful emergency and long-term water shortage conditions (City of Corona 2016).

The 2015 UWMP states that stages of action can be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply. The 2015 UWMP lists five water conservation stages and indicates the conditions under which each stage is implemented (City of Corona 2016).

City of Corona 2020–2040 General Plan

The following goals and policies in the City of Corona 2020–2040 General Plan are relevant to utilities and service systems (City of Corona 2020a).

Infrastructure and Utilities Element

Goal IU-1. Secure water supply, water treatment, distribution, pumping, and storage systems that meet the current and projected future daily and peak water demands of Corona in an equitable, efficient, and sustainable manner.

Policy IU-1.8. Through engineering design, construction practices, and enforcement of water regulatory standards, ensure that existing and new land uses and development do not degrade the City's surface waters and groundwater supplies.

Goal IU-2. Minimize water consumption and urban runoff generation through site design, the use of water conservation systems, and other techniques.

Policy IU-2.4. Expand the recycled water program to provide water for landscaped medians and other appropriate open spaces along SR-91 [State Route 9] and I-15 [Interstate 15], in coordination with Caltrans, when feasible.

Policy IU-2.7. Require the use of recycled water for landscaped irrigation, grading, and other noncontact uses in new developments, parks, golf courses, sports fields, and comparable uses, where feasible.

Policy IU-2.8. Continue to provide and support public educational efforts to residents, business, and students regarding the importance of water conservation and recycled water use.

Goal IU-3. A secure sewer collection and treatment system that meets current and projected future daily and peak load demands in Corona and protects public health and the environment in an efficient, equitable, and sustainable manner.

Policy IU-3.10. Continue to implement, as appropriate, the requirements of the NPDES [National Pollutant Discharge Elimination System] and SCAQMD [South Coast Air Quality Management District] regulations, including requiring the use of Best Management Practices by businesses in the City.

Goal IU-6. Maintain solid waste collection, recycling, and disposal services, programs, and regulations in accordance with California mandates.

Policy IU-6.3. Coordinate with Riverside County to ensure the City's continued use of the El Sobrante Landfill and adherence to county, state, and federal environmental regulations and local priorities.

Policy IU-6.4. Encourage and support local, regional, and statewide efforts to reduce the solid waste stream; implement a waste reduction and recycling program within all City offices and facilities.

Policy IU-6.5. Continue to operate and expand source reduction, reuse, recycling, and composting efforts to continue to reduce waste generation citywide and achieve state-mandated waste diversion goals.

Corona Municipal Code

Chapter 13.36, Water Conservation, of the City's Municipal Code outlines the water shortage contingency measures identified in the 2015 UWMP. Chapter 8.20, Collection of Refuse and Recyclable Materials, provides requirements for collecting solid waste and recyclable materials (City of Corona 2020b).

3.19.3 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a significant impact related to utilities and service systems would occur if the project would (CEQA Guidelines, Section 15000 et seq.):

1. Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects
2. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years
3. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments
4. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals
5. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste

3.19.4 Environmental Analysis

3.19.4.1 Threshold 1: Relocation or Construction of New Facilities

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

Impact Analysis

The project would expand the availability of reclaimed water in the water service area. It would result in the construction of new or expanded reclaimed water facilities. The project would not result in the construction of new or expanded potable water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunication facilities. The project involves the construction of distribution pipelines, water tanks, booster pump stations, and flow control facilities, which could result in significant environmental impacts. Those impacts are discussed in Chapter 3, Environmental Analysis. Potentially significant impacts and mitigation measures that would reduce these impacts are identified in Sections 3.1, Aesthetics; 3.4, Biological Resources; 3.5, Cultural Resources; 3.7, Geology, Soils, and Paleontological Resources; 3.9, Hazards and Hazardous Materials; 3.13, Noise; 3.17, Transportation; 3.18, Tribal Cultural Resources; and 3.20, Wildfire.

Existing utility lines and cables would be identified during the design phase for the individual projects identified in the 2018 RWMP as part of an underground service alert. Design of 2018 RWMP projects would include a detailed Engineering and Construction Plan, which would thoroughly describe construction techniques and protective measures and would avoid the relocation of the existing facilities during construction activities.

Level of Significance Before Mitigation

Implementation of the project would require the construction of new reclaimed water infrastructure, which could cause significant environmental effects. Impacts would be potentially significant.

Mitigation Measures

The project would have a potentially significant impact associated with the construction of new utilities infrastructure. However, mitigation measures identified in Sections 3.1, Aesthetics; 3.4, Biological Resources; 3.5, Cultural Resources; 3.7, Geology, Soils, and Paleontological Resources; 3.9, Hazards and Hazardous Materials; 3.13, Noise; 3.17, Transportation; 3.18, Tribal Cultural Resources; and 3.20, Wildfire, would mitigate the impacts associated with the project to a less than significant level.

Level of Significance After Mitigation

The project would be mitigated to a less than significant level.

3.19.4.2 Threshold 2: Sufficient Water Supplies

Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

Impact Analysis

The project would expand the availability of reclaimed water in the water service area and would not increase water demand that would require additional water supply.

Construction-related activities, such as dust suppression and washing down of streets or paved areas, may require the temporary use of water. However, the amount would be minimal, and the need would be temporary; therefore, existing entitlements and resources would be adequate to support potential needs. In addition, the 2018 RWMP would maximize reclaimed water supply availability and reduce the use of potable water and increasing its availability.

Level of Significance Before Mitigation

The project would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years. Impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Because no mitigation measures are required, impacts would remain less than significant.

3.19.4.3 Threshold 3: Adequate Wastewater Capacity

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

Impact Analysis

The project would expand the availability of reclaimed water in the water service area. It would not involve construction or operation of new facilities that generate wastewater. Therefore, the project would not increase demand for wastewater capacity and would not impact the provider's existing commitments.

Level of Significance Before Mitigation

Implementation of the project would not result in a determination by the City's DWP that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments. No impact would occur.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Because no mitigation measures are required, no impact would occur.

3.19.4.4 Threshold 4: Solid Waste Generation

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

Impact Analysis

The project would expand the availability of reclaimed water in the water service area. Construction of the projects identified in the 2018 RWMP would generate solid waste, including a variety of materials that could be recycled (paper products, metals, plastics), as well as some waste associated with leftover fill. State regulations related to solid waste, including the CalRecycle Model C&D Diversion Ordinance, require construction and demolition debris generated on a job site to be reused, recycled, or otherwise diverted. Contractors hauling waste to local landfills would be required to demonstrate an effort to reuse, recycle, and divert construction debris to the greatest extent practical before loads being accepted at the facility. Specifically, City construction contracts would include recycling provisions requiring that no recycled materials be disposed of at a landfill and that disposable recyclable materials are disposed of in a manner that facilitates recycling.

Operation of the projects identified in the 2018 RWMP, such as pipelines, pump stations, and storage tanks, would not generate solid waste.

Level of Significance Before Mitigation

Implementation of the project would not generate solid waste in excess of state or local standards or in excess of the capacity of local infrastructure or otherwise impair the attainment of solid waste reduction goals. Impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Because no mitigation measures are required, impacts would remain less than significant.

3.19.4.5 Threshold 5: Compliance With Solid Waste Reduction Statutes and Regulations

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

Impact Analysis

The projects identified in the 2018 RWMP would generate small amounts of solid waste, including construction debris, recyclable materials, and leftover fill, during construction-related activities. Waste produced by the project would be removed immediately following construction and disposed of properly in accordance with federal, state, and local statutes and regulations.

Level of Significance Before Mitigation

Implementation of the project would comply with federal, state, and local management and reduction statutes and regulations related to solid waste. Impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Because no mitigation measures are required, impacts would remain less than significant.

3.19.5 Cumulative Impacts and Mitigation

3.19.5.1 Cumulative Threshold 1: Relocation or Construction of New Facilities

The geographic context for the analysis of cumulative impacts regarding water, wastewater, stormwater drainage, electric power, natural gas, and telecommunications facilities is the water service area. A significant cumulative impact would result if combined cumulative projects would require the need for new or expanded utilities facilities that result in significant environmental effects. To support regional growth, new water, wastewater, stormwater drainage, electric power, natural gas, and telecommunications facilities would be constructed in the water service area. The majority of these new facilities would connect to existing systems. These new facilities could result in new significant physical impacts on the environment, mostly associated with construction activities and placement in sensitive resource areas. It is reasonable to expect that these projects, like the project, would comply with CEQA, and any project-specific impacts identified from construction of these facilities would be mitigated to the extent feasible. The majority of the projects identified in the 2018 RWMP would be constructed in already developed areas or

roadways. However, if reclaimed water infrastructure were to result in secondary environmental impacts, mitigation measures identified in Chapter 3 would mitigate potential impacts. Therefore, the project, in combination with other cumulative projects, would not result in a significant cumulative impact associated with relocation or construction of new facilities.

3.19.5.2 Cumulative Threshold 2: Sufficient Water Supplies

The geographic context for the analysis of cumulative impacts regarding water supply is the water service area. A significant cumulative impact would occur if the combination of projects in the water service area resulted in insufficient water supplies, which would result in the need for new or expanded entitlements. Cumulative projects in the water service area would result in growth and a related increase in demand for water. The City's 2015 UWMP is designed to sustainably manage the City's water supply to exceed demand through year 2040. The 2015 UWMP provides the City with authority to impose water use constraints on end users to ensure sustainability under stressful emergency and long-term water shortage conditions. Sufficient water supplies would be available to serve cumulative projects consistent with applicable planning documents, such as the City of Corona 2020–2040 General Plan. In addition, the project would expand the availability of reclaimed water to the water service area, thereby converting some of the existing demand for potable water to reclaimed water. Therefore, the project, in combination with other cumulative projects, would not result in a significant cumulative impact associated with sufficient water supplies.

3.19.5.3 Cumulative Threshold 3: Adequate Wastewater Capacity

The geographic context for the analysis of cumulative impacts related to wastewater treatment capacity is the wastewater service area provided by the City's DWP. A significant cumulative impact would occur if combined cumulative projects would result in inadequate wastewater treatment capacity. Cumulative projects in the wastewater service area would result in growth and a related increase in demand for wastewater treatment. The City prepared a Sewer Master Plan (City of Corona 2005b) to calculate future flow projections to determine the upgrades necessary to adequately serve the City's wastewater collection and conveyance needs under buildout of the City of Corona 2004 General Plan. Future cumulative growth consistent with the adopted City of Corona 2004 General Plan is anticipated to be served with adequate wastewater treatment capacity in the wastewater service area. The project would expand the availability of reclaimed water and would not involve construction of facilities that would generate of wastewater or require wastewater treatment. Therefore, the project, in combination with other cumulative projects, would not result in a significant impact to wastewater treatment capacity.

3.19.5.4 Cumulative Threshold 4: Solid Waste Generation

The geographic context for the analysis of cumulative impacts related to solid waste is the water service area, which is served by the El Sobrante and Olinda Alpha Landfills. Implementation of the project, as well as other regional off-site development, would increase the amount of solid

waste produced in the region. However, extensive regulations and waste management programs are in place at the state and local levels that focus on increasing diversion and conversion of waste into the future. Most cumulative projects would undergo CEQA review similar to the project. This process would include verifying that there is adequate capacity in the landfill system to accept trash and recycling for the cumulative projects. Therefore, in combination, cumulative projects would not result in a significant cumulative impact related to solid waste generation. Construction of the projects identified in the 2018 RWMP would generate solid waste. Based on remaining capacity and disposal rates, the El Sobrante and Olinda Alpha Landfills would have available capacity to accept construction debris from the project sites. Therefore, the project's contribution would not be cumulatively considerable.

3.19.5.5 Cumulative Threshold 5: Compliance With Solid Waste Reduction Statutes and Regulations

The geographic context for the analysis of cumulative impacts related to solid waste compliance is defined as the water service area. Cumulative projects would be required to comply with federal, state, and local regulations pertaining to solid waste disposal. Therefore, the project, in combination with other cumulative projects, would not result in a significant impact associated with solid waste compliance. The project's contribution would not be cumulatively considerable.

3.19.6 Conclusion

The project would expand the availability of reclaimed water in the water service area, which would include the construction of new reclaimed water infrastructure. The construction of new utilities infrastructure could result in a significant environmental impacts as discussed in Sections 3.1, Aesthetics; 3.4, Biological Resources; 3.5, Cultural Resources; 3.7, Geology, Soils, and Paleontological Resources; 3.9, Hazards and Hazardous Materials; 3.13, Noise; 3.17, Transportation; 3.18, Tribal Cultural Resources; and 3.20, Wildfire. Mitigation identified in these sections would reduce impacts to a less than significant level. Direct and cumulative impacts would be less than significant with the incorporation of mitigation measures.

The project would expand the availability of reclaimed water to the water service area and would not increase water demand that would require additional water supply. The project would not involve construction of facilities that would include the generation of wastewater. No direct or cumulative impacts would occur.

The project would generate small amounts of solid waste, including construction debris, recyclable materials, and leftover fill, during construction-related activities. It would not generate solid waste in excess of state or local standards or in excess of the capacity of local infrastructure or otherwise impair the attainment of solid waste reduction goal. Waste produced by the project would be removed immediately following the activity and disposed of properly in accordance with federal, state, and local statutes and regulations. Direct and cumulative impacts would be less than significant.

3.20 Wildfire

This section discusses the potential impacts to wildfire in the City of Corona's (City's) water service area that may result from the implementation of the 2018 Reclaimed Water Master Plan (project or 2018 RWMP). The analysis in this section is based in part on the following information: City of Corona 2020–2040 General Plan (City of Corona 2020).

3.20.1 Environmental Setting

This section describes the environmental setting as it relates to wildfire for the water service area. The project proposes reclaimed water facilities in various locations throughout the water service area.

Local and Regional Wildfire Environment

The City has a complex fire environment. The City is one of the largest in the County of Riverside (County) and at the intersection of three counties. There are numerous businesses in the City that use, manufacture, or store hazardous materials. The City has a housing stock of approximately 50,000 housing units, most of which are two- to four-story structures. Additional structures and uses, such as senior facilities and other group living quarters, require heightened levels of emergency medical services and fire suppression.

Furthermore, the City is surrounded by extensive open space areas that are susceptible to wildfire and encroachment into the community. The Cleveland National Forest borders the western portion of the City and is the source of many wildfires. Vegetation to the north in the Chino and Corona Hills and to the east in Gavilan Hills is susceptible to wildfire. The majority of the undeveloped area surrounding the City has been burned by multiple wildfires and is designated a Very High Fire Hazards Severity Zone (VHFHSZ) by the California Department of Forestry and Fire Protection (CAL FIRE).

The Corona Fire Department (CFD) responded to approximately 12,500 calls annually, although the volume has increased by 15 percent over the last 5 years. During this 5-year period, the greatest percentage of calls, 74 percent, involved emergency medical service and rescue. This category is primarily responsible for the 15 percent increase in the number of service calls over the same period.

The City has a long history of wildfires threatening the community, which include fires at the wildland-urban interface, where the urban environment extends into open areas, resulting in a complex mix of fuels, properties, and threats. Wildland-urban interface fires can damage critical infrastructure, such as electrical transmission towers, railroads, water reservoirs and tanks, and communications facilities. Since 1900, numerous wildfires have encroached into the City, although few have caused significant damage to structures and infrastructure.

Weed Abatement

Because the water service area is surrounded by hillsides, maintaining existing firebreaks and clearing vegetation helps to prevent wildland fires from entering the community. Under a Cooperative Agreement with the California Department of Corrections and Rehabilitation, CAL FIRE operates the Prado Conservation Camp and provides weed abatement in the City and the surrounding wildland areas.

Fire/Fuel Break Maintenance

CAL FIRE Riverside Unit and the U.S. Forest Service cooperate on maintaining the fuel breaks and truck trails along the Main Divide Truck Trail and down main ridgelines into the Temescal and Corona Valleys. These truck trails are vital ingress and egress routes for fire suppression resources and continual maintenance is coordinated thru cooperative agreements with state, federal, and county agencies and dependent upon funding. The intent is to contain wildland fires emanating from the Cleveland National Forest from reaching urban areas, such as Temecula, the City, and others that front the forest.

Wildfire Hazard Severity Zones and Response

CAL FIRE is mandated by the California Public Resources Code, Sections 4201–4204, and California Government Code, Sections 51175–51189, to identify fire hazard severity zones for every community in California. CAL FIRE has mapped three hazard severity ranges—moderate, high, and very high—based on fuels, terrain, weather, and other factors for most regions of California. The City adopted its current VHFHSZ Map pursuant to Ordinance No. 3034, adopted on June 3, 2010, which is consistent with CAL FIRE's determination. Additionally, in the sphere of influence, CAL FIRE requires compliance with Senate Bill 1241 and subsequent regulations to ensure appropriate standards are met, such as building and road standards.

California Government Code, Section 51179, allows a local agency, at its discretion, to restrict or expand the fire hazard severity zones identified by CAL FIRE. A city may exclude an area identified as a VHFHSZ from the requirements of Section 51182 following a finding supported by substantial evidence in the record that the Section 51182 requirements are not necessary for effective fire protection in the area, or designate areas as VHFHSZs in its jurisdiction that were not identified by CAL FIRE following a finding supported by substantial evidence that Section 51182 requirements are needed for effective fire protection.

To address wildfire hazards and coordinate response, multiple government agencies (local, county, state, and federal) are responsible for fire suppression.

Local Responsibility Areas. These are areas where local jurisdictions (e.g., cities, districts, counties, and CAL FIRE if under contract) are responsible for the prevention and suppression of wildfires. The City covers the entire incorporated area, and the County/CAL FIRE serves portions

of the unincorporated areas. The City provides secondary backup for areas covered by the Riverside County Fire Department.

State Responsibility Area. These are the areas where the State of California has primary financial responsibility for fire prevention and suppression activities. State responsibility area lands do not include lands within City boundaries or in federal ownership. CAL FIRE is the responsible state agency assigned to response and suppression of wildfires in City's sphere of influence and surrounding areas.

Federal Responsibility Area. These are areas where the federal government has primary financial responsibility for fire prevention and suppression activities. Around the City, the federal government (U.S. Forest Service) is responsible for suppressing fires in the Cleveland National Forest. Typically, U.S. Forest Service resources are deployed solely to federal responsibility areas but may assist elsewhere.

Figure 3.20-1, Very High Fire Hazard Severity Zones, illustrates the location of VHFHSZs.

Post-Fire Debris Flow

Wildfires on hillsides can create hazards in the form of mud or debris flows. A debris flow is a form of slope failure and slippage, where a moving mass of loose mud, sand, soil, rock, vegetation, and water travels down a slope under the influence of gravity. Debris or mud flows occur most frequently on hillsides that have little to no vegetation and are most common following wildfires and as a result of storm events. Debris flows have a history of occurrence in Southern California, some with devastating consequences.

As part of its landslide hazard program, the U.S. Geological Survey prepares post-fire debris flow maps of major wildfires that document the likelihood of debris flows during a storm event. Maps indicate estimates of the likelihood of debris flow, their potential volume, and the combined relative debris flow hazard. These predictions are made at the scale of the drainage basin and for individual stream segment. Estimates are based on a design storm with a peak 15-minute rainfall intensity of 24 millimeters per hour.

In 2017, the Cities of Corona and Anaheim experienced two large fires, the Canyon I (Corona) and Canyon II fires (Anaheim Hills). The U.S. Geological Survey prepared debris flow hazard maps for both events, showing a moderate basin hazard. The potential volume of the flow in the City can range from 1,000 to 100,000+ cubic meters. During the winter storms that followed the fire season, the Cities of Corona and Anaheim experienced mud and debris flows in neighborhoods near the fire areas and along State Route 91.

Fire Protection Services

The CFD is an "all risk" department, responding to fires, medical emergencies, and hazardous conditions, and serves the City and communities of Coronita, El Cerrito, and Home Gardens through a service agreement with the County. The CFD also participates in mutual, automatic, and contractual aid. In the broader Temescal Valley, service calls are responded to by Riverside County Fire Department. Refer to Section 3.15, Public Services, for information on fire protection resources.

Evacuation Routes

The water service area's location makes it susceptible to wildfires, earthquakes, and floods. Most major roadways and transit systems within or exiting the community are crossed by one or more disaster prone areas, including Alquist-Priolo earthquake fault zones, VHFHSZs, 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 Interstate 15 and State Route 91, both of which can be affected by wildfires.

For areas at the wildland/urban interface, the City has Structure Protection Plans to address the evacuation routes. The Riverside County Strategic Contingency Plan that coincides with the City's Structure Protection Plans incorporates these routes. The CFD, in partnership with CAL FIRE, has published its Ready, Set, Go! Wildfire Action Plan to give citizens the tools needed to prepare for such an event. The City makes available the timely notification of wildland fires and debris flows. The City offers a local notification system that sends telephone notifications to residents and businesses in the community. The City also maintains a Community Emergency Response Team program where community members learn the various hazards they are most susceptible to in their local jurisdiction, preparedness methods, mitigation efforts, and the types of evacuations, with an emphasis that direction and route can easily change and is incident driven.

3.20.2 Regulatory Setting

This section describes the federal, state, regional, and local regulatory framework adopted to address wildfire.

3.20.2.1 Federal

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 the following:

- 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

3.20.2.2 State

California Building Code

The California Building Code requires the installation and maintenance of smoke alarms in residential dwelling units as follows (Title 24, Part 2, Section 907.2.11.2, of the California Code of Regulations): "Smoke alarms shall be installed and maintained on the ceiling or wall outside of each separate sleeping area in the immediate vicinity of bedrooms. In each room used for sleeping purposes, and in each story within a dwelling unit. The smoke alarms shall be interconnected."

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. The Board of Forestry and Fire Protection is a regulatory body in CAL FIRE. It is responsible for developing the general forest policy of the state, for determining the guidance policies of the Department, and for representing the state's interest in federal forestland in California. The Board of Forestry and Fire Protection also promulgates regulations and reviews General Plan Safety Elements that are adopted by local government for compliance with statutes. Together, the Board of Forestry and Fire Protection and CAL FIRE protect and enhance the forest resources of the wildland areas of California that are not under federal jurisdiction.

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.

California Government Code

The State of California maintains responsibility for the prevention and suppression of wildfires on land outside incorporated boundaries of a city. In 1991, the State Legislature adopted the Bates Bill (California Government Code, Sections 51175–51189) following the fires in the Oakland Hills. The bill requires CAL FIRE to identify and classify areas in local responsibility areas that

have a "very high fire severity" hazard for wildfires. Local responsibility areas are areas where local governments have the primary responsibility for preventing and suppressing fires. A local agency is required to adopt CAL FIRE's findings within 120 days of receiving recommendations from CAL FIRE, pursuant to California Government Code, Section 51178(b), or propose modifications in accordance with state law. The VHFHSZs are currently being updated due in part to the recent 2017 fire season.

California Office of State Fire Marshal

The California Office of the State Fire Marshal supports the mission of CAL FIRE by focusing on fire prevention. Its fire safety responsibilities include regulating buildings in which people live, congregate, or are confined; by controlling substances and products which may, in and of themselves, or by their misuse, cause injuries, death, and destruction by fire; by providing statewide direction for fire prevention within wildland areas; by regulation hazardous liquid pipelines; by developing and reviewing regulations and building standards; and by providing training and education in fire protection methods and responsibilities. These achievements are accomplished through major programs including engineering, education, enforcement, and support from the State Board of Fire Services.

California Public Resources Code

The Board of Forestry and Fire Protection is authorized in the California Public Resources Code (Sections 4290 and 4291) to adopt minimum fire safety standards for new construction in VHFHSZs in state responsibility areas. The Board of Forestry and Fire Protection published its fire safety regulations in the California Code of Regulations, Title 14. These standards may differ from those in Appendix D of the California Fire Code. Fire-safe regulations currently address the following:

- **Article 1:** Administration of ordinance and defensible space measures (Chapter 49)
- **Article 2:** Emergency access and egress standards (roadways) (Appendix D)
- **Article 3:** Standards for signs identifying streets, roads, and buildings (Chapter 5)
- **Article 4:** Emergency water standards for fire use (Appendix B, BB)
- **Article 5:** Fuel modification standards (Chapter 49)

Local ordinances adopted by local governments cannot be less restrictive than the provisions in state law. These regulations would be applied in state responsibility areas outside of the City's boundaries, such as the sphere of influence and surrounding unincorporated lands.

3.20.2.3 Regional

California Department of Forestry and Fire Protection, County of Riverside Unit Strategic Plan

CAL FIRE prepares a California Fire Strategic Plan to govern operations statewide. The California Strategic Plan is implemented through individual "unit plans" that are prepared for different regions of the state. CAL FIRE's fire suppression operations are organized into 21 units that geographically follow county lines. CAL FIRE adopted a County of Riverside Unit Strategic Plan that covers the County. The plan sets forth the agency's priorities for the prevention, protection, and suppression of wildfires. The overall goal of the 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 attack success. The last plan was updated in 2018.

County of Riverside Multi-Jurisdictional Local Hazard Mitigation Plan

The County's Multi-Jurisdictional Local Hazard Mitigation Plan (LHMP) identifies the County'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 human-made hazards. The LHMP contains mitigation strategies, from the Safety Element of the Riverside County General Plan (2015).

Riverside County Local Agency Formation Commission

Municipal Service reviews were added to the Local Agency Formation Commission's 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 the Local Agency Formation Commission, local agencies, and 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.

3.20.2.4 Local

City of Corona 2020–2040 General Plan

The following goals and policies in the City of Corona 2020–2040 General Plan are relevant to wildfire (City of Corona 2020).

Public Safety Element

Goal PS-9. Through fire prevention and educational efforts, promote participation, voluntary compliance and community awareness of fire safety issues in order to reduce the incidence and severity of fire and related emergencies and loss.

Policy PS-9.1. Continue to review and adopt the most recent edition of the California Building Standards Code (Title 24), including local amendments, to ensure the use of the latest technology and building standards in the city.

Policy PS-9.4. Maintain safe and accessible evacuation routes throughout the community; take precautions and ensure backup or mitigations for routes crossing high hazard areas (e.g., flood, seismic, high fire, etc.).

Policy PS-9.5. Work cooperatively with city departments, community groups, and individual homeowners to ensure that vegetation management is being maintained in the designated fuel modification areas.

Goal PS-10. Reduce fire risk to life and property through effective land use planning and compliance with federal, state, local laws, ordinances, and standards.

Policy PS-10.1. Locate, when feasible, new essential public facilities outside of high fire risk areas; if not feasible, require construction and other methods to harden and minimize damage for existing/planned facilities in such areas.

Policy PS-10.2. Require all improved and new homes, structures, and facilities in the very high fire hazard severity zones to adhere to additional fire-safe design standards consistent with state law and local practice.

Policy PS-10.6. Require fuel modification plans and vegetation clearance standards for development in VHFHSZs to protect structures from wildfire, protect wildlands from structure fires, and provide safe access routes for the community and firefighters within the project boundary, which may be extended pursuant to required findings when in accordance with state law, local ordinance, rule or regulation and no feasible mitigation measures are possible.

City of Corona Municipal Code

The Corona Municipal Code covers a broad range of regulations that address building construction codes, roadway access and egress, building signage, and sprinkler requirements, among other aspects, including Chapter 15.16, Fire Hazard Severity Zones, and outlines the authority of the Fire Chief in determining VHFHSZs and creating a VHFHSZ Map in the City. The CFD and City building department staff work together to regulate requirements for development in the high fire hazard severity zones.

Community Wildfire Planning Program

A Community Wildfire Planning Program is a program that is intended to reduce wildfire risk to communities, municipal water supplies, structures, and other at-risk land uses through a collaborative process planning and implementing programs. Due to the recent increase in wildfire hazards, the

City is undertaking a Wildland Risk Assessment to address wildland-urban interface areas in the City's canyons and foothills that are at risk from wildfire. The City has been awarded a grant from the California Fire Safe Council to complete a Community Wildfire Planning Program in 2020.

Corona Emergency Operations Plan

The City has prepared an Emergency Operations Plan (EOP) to address the City's planned response to natural disasters, technological incidents, and national security emergencies. The EOP does not address normal day-to-day emergencies or the well-established and routine procedures used in coping with such emergencies. The EOP's operational concepts focus on potential large-scale disasters that can generate unique situations requiring unusual emergency responses. The EOP's emergency management goals are as follows (City of Corona 2020):

1. Provide effective life safety measures and reduce property losses
2. Provide for the rapid resumption of impacted businesses and community services
3. Provide accurate documentation and records required for cost recovery efforts

Corona Fire Prevention Guidelines and Standards

The CFD prepares, adopts, and maintains fire prevention standards that apply to existing and proposed buildings, landscapes, and property. Many of these standards are the same requirements of the California Fire Code, with certain local standards being more restrictive than the state codes by adoption of local amendments to the Corona Municipal Code. Fire prevention standards include but are not limited to the following:

- Construction standards
- Guideline for Fire Flow And Hydrant Spacing
- Automatic Fire Sprinkler Plan review and inspection
- Hazardous material use and storage
- Fuel modification requirements

Corona Local Hazard Mitigation Plan

The City adopted its 2017 LHMP pursuant to Resolution No. 2018-094 on September 5, 2018. The 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 risks to people and property from natural and human-made hazards. Of the 23 hazards evaluated, wildfire hazard is rated as the second highest risk. Goals and mitigation programs are provided in the hazard mitigation plan to address each of the hazards. The City of Corona 2020–2040 General Plan, Safety Element has adopted the LHMP in compliance with Assembly Bill No. 2140 (City of Corona 2020).

Corona Standards of Coverage Study and Fire Strategic Plan

The CFD sets the vision, mission, business operations, and guiding principles for the department by means of a Strategic Plan. The purpose of the Strategic Plan is for members of the organization to envision its future and develop the necessary procedures and operations to achieve that future.

The Strategic Plan is a Foundational Plan that assists the department in preparing annual fiscal year budgets, master plans, and other related activities required to be performed by the department. Although the planning period is 8 years, the plan is updated annually to assess service levels, performance, and other needed functions that may change during the course of a year.

3.20.3 Thresholds of Significance

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, a significant impact related to wildfire would occur if the project would (CEQA Guidelines, Section 15000 et seq.):

1. Substantially impair an adopted emergency response plan or emergency evacuation plan
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
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
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

3.20.4 Environmental Analysis

3.20.4.1 Threshold 1: Emergency Response or Evacuation Plan

Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

Impact Analysis

Construction

The City has prepared an EOP to ensure the most effective allocation of resources for the maximum benefit and protection of the civilian population in time of emergency. In addition, the City's LHMP is designed to identify local hazards and provide mitigation measures to address these hazards. Implementation of the project would not result in substantial changes to the circulation patterns or emergency access routes in the water service area. However, as discussed in Section 3.9, Hazards and Hazardous Materials, construction of the project would mainly occur in public rights-of-way. During construction, temporary full or partial lane closures may be necessary,

especially for distribution pipeline projects. The full or partial lane closures could result in the redistribution of traffic along adjacent and surrounding roadways. As construction progresses, access for emergency vehicles could be impaired as result of reduced roadway widths (or capacity) and increased volumes of construction-related traffic or redistributed traffic. As a result, construction could impair or physically interfere with adopted Emergency Response Plans or Emergency Evacuation Plans.

Operation

Once constructed, the identified pipelines, water storage tanks, booster pump stations, and flow control improvements would be in or adjacent to existing facilities or rights-of-way. Trenches for pipeline installation would be backfilled with on-site material, and the surface elevation would be restored to match the original ground surface and pavement surface elevations. Therefore, operation of the projects identified in the 2018 RWMP would not would not impact emergency response operations over the long-term. Once operational, these improvements would not interfere with emergency access, and no indirect impacts would result.

Level of Significance Before Mitigation

Construction of the project could impair implementation of or physically interfere with an adopted Emergency Response Plan or Emergency Evacuation Plan. Impacts would be potentially significant.

Mitigation Measures

Implementation of Mitigation Measure HAZ-3 in in Section 3.9 would require the preparation and implementation of a Construction Traffic Control Plan that would allow for access for emergency vehicles to be maintained at all times. In addition, the plan would require that police, fire, and emergency services be notified of the timing, location, and duration of construction activities that could hinder or delay emergency access through the construction period.

Level of Significance After Mitigation

Implementation of Mitigation Measure HAZ-3 would be mitigate impacts to a less than significant level.

3.20.4.2 Threshold 2: Uncontrolled Spread of Wildfire

Would the project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

Impact Analysis

Construction

Portions of the water service area is in a VHFHSZ (Figure 3.20-1). The project proposes to expand the existing reclaimed water services in the water service area. Project components would include

storage tanks, pump stations and distribution pipelines. A majority of these improvements would be located in urbanized areas in existing public rights-of-way. The presence of paved surfaces and existing structures substantially reduces the risk of construction equipment accidentally igniting surrounding vegetation.

However, the Promenade Pipeline, Research Pipeline, Chase Tank, Chase Booster Pump Station, Western Riverside County Regional Wastewater Authority Booster Pump Station, and Western Riverside County Regional Wastewater Authority Flow Control Improvement Projects would be constructed on undeveloped sites that may include flammable materials, such as brush, grass, or trees, which would have the potential to expose occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.

Operation

The proposed distribution pipelines would be installed underground and would not pose a fire risk. Aboveground facilities that are situated in the City's VHFHSZs would maintain appropriate brush clearance to protect facilities from damage. There would be no permanent City employees working at these facilities; therefore, the project would not expose project occupants to pollutant concentrations from a wildfire.

Level of Significance Before Mitigation

Project construction activities would have the potential to exacerbate wildfire risks, thereby exposing construction workers to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. Impacts would be potentially significant.

Mitigation Measures

Implementation of Mitigation Measures HAZ-4 and HAZ-5 identified in Section 3.9 would reduce impacts to less than significant.

Level of Significance After Mitigation

Implementation of Mitigation Measures HAZ-4 and HAZ-5 would reduce impacts to a less than significant level.

3.20.4.3 Threshold 3: Requirement of Installation or Maintenance of Associated Infrastructure

Would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

Impact Analysis

The water service area is in a VHFHSZ. The project proposes to expand the existing reclaimed water system in the water service area. Projects identified in the 2018 RWMP include the installation and maintenance of water storage tanks, pump stations, and distribution pipelines. However, a majority of reclaimed water system infrastructure would be in urbanized areas in existing public rights-of-way. The presence of paved surfaces and existing structures substantially reduces the risk of construction equipment accidentally igniting surrounding vegetation.

However, some project components would be constructed on undeveloped land and potentially flammable materials, such as brush, grass, or trees, could pose a risk of wildland fires during construction.

New reclaimed water infrastructure facilities identified in the 2018 RWMP would be incorporated into the existing maintenance schedule, which consists of daily maintenance checks for the pump stations and weekly maintenance checks for the water storage tanks and would implement fire-safe maintenance practices. In addition, the aboveground facilities would maintain appropriate brush clearance. Maintenance activities would not exacerbate fire risk and would not result in temporary or ongoing impacts to the environment.

Level of Significance Before Mitigation

Installation of reclaimed water infrastructure may exacerbate fire risk. Impacts would be significant. Maintenance activities associated with the reclaimed water infrastructure would not exacerbate fire risk and would not result in temporary or ongoing impacts to the environment. Impacts would be less than significant for maintenance.

Mitigation Measures

Implementation of Mitigation Measures HAZ-4 and HAZ-5 would require individual construction projects implement construction measures to avoid construction-related wildfire impacts from installation of reclaimed water infrastructure. These measures would require construction areas to be clear of combustible materials and to ensure that sufficient fire suppression equipment is available during construction activities.

Level of Significance After Mitigation

Implementation of Mitigation Measures HAZ-4 and HAZ-5 would reduce impacts to a less than significant level.

3.20.4.4 Threshold 4: Exposure of People or Structures to Flooding or Landslides

Would implementation of the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

Impact Analysis

Construction

Land-disturbing construction activities associated with the project, such as vegetation clearing and grading of project sites, could result in localized alteration of drainage patterns and temporarily increase in erosion and sedimentation in the construction area. Temporary flooding could also result from such activities from temporary alterations of the drainage system (reducing its capacity of carrying runoff) or from the temporary creation of a sump condition due to grading. Alterations may temporarily result in increased erosion and siltation if flows were substantially increased or routed to facilities or channels without capacity to carry the additional flow. Construction-related activities associated with the projects identified in the 2018 RWMP would be required to comply with the City's Grading Ordinance. Projects that would disturb more than 1 acre would be subject to National Pollutant Discharge Elimination System Construction General Permit requirements, including the preparation of a Stormwater Pollution Prevention Plan.

In the event that the steep slopes near reclaimed water facilities are burned, unstable soils could occur due to the lack of vegetation to anchor the hillside. The City's Department of Water and Power would implement best management practices (BMPs) to stabilize slopes and prevent sediment movement exposure to off-site adjacent occupants. These BMPs would include the placement of fiber rolls, straw waffles, or sandbags on the affected slopes, as well as erosion-control mats, to stabilize and protect the burned areas.

Operation

Distribution pipelines would be installed underground, and the sites would be restored to preconstruction conditions, which would not interfere with drainage patterns. Water storage tanks and pump stations would change the drainage pattern at each site; however, it would be considered minor and would comply with the National Pollutant Discharge Elimination System permit and the City's Local Implementation Plan so that they are designed to reduce stormwater runoff from projects sites by promoting infiltrating, minimizing impervious surfaces, and requiring a no-net increase in flow. In addition, the projects identified in the 2018 RWMP would not extend into areas that are prone to potential landslide activity. Therefore, the project would not expose people or structures to significant risk associated with post-fire landslides, mudflows, and flooding.

Level of Significance Before Mitigation

Implementation of the project would not expose people or structures to a significant risk, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. Impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Because no mitigation measures are required, impacts would remain less than significant.

3.20.5 Cumulative Impacts and Mitigation

3.20.5.1 Cumulative Threshold 1: Emergency Response or Evacuation Plan

The geographic context for the analysis of cumulative impacts to Emergency Response Plans or Emergency Evacuation Plans is the water service area. Construction and operation associated with future development could result in activities that could interfere with adopted Emergency Response or Emergency Evacuation Plans, such as temporary construction barricades or other obstructions that could impede emergency access. Cumulative projects would be required to comply with the requirements of the CFD and the City's traffic control requirements. Compliance with applicable regulations and project-specific mitigation measures would ensure that cumulative projects would not result in a significant cumulative impact associated with the impairment of an Emergency Response Plan or Emergency Evacuation Plan.

Implementation of the project would require temporary road and lane closures during construction, which could impair or physically interfere with adopted Emergency Response Plans or Emergency Evacuation Plans. However, a Construction Traffic Control Plan would be put in place to minimize impaired emergency response or evacuation during construction activities consistent with Mitigation Measure HAZ-3. In addition, police, fire, and emergency services would be notified of the timing, location, and duration of construction activities that could hinder or delay emergency access through the construction period. Therefore, the project's contribution would not be cumulatively considerable.

3.20.5.2 Cumulative Threshold 2: Uncontrolled Spread of Wildfire

The geographic context for cumulative impacts related to uncontrolled spread of wildfire is the water service area. Portions of the water service area are in a VHFHSZ (Figure 3.20-1). Cumulative projects could potentially have an impact if several projects were to experience wildfire simultaneously causing pollutant concentrations to flow through the air at an unprecedented rate. Pursuant to applicable codes and regulations, including the California Fire Code, CAL FIRE fire-

safe design requirements, and City Fire and Public Works Standards, cumulative projects would be constructed and designed to minimize the potential for uncontrolled spread of wildfire that could expose project occupants to pollutant concentrations. Project-specific mitigation measures would also be required to reduce cumulative project impacts. Therefore, a significant cumulative impact would not occur.

As discussed in Section 3.20.4.2, implementation of Mitigation Measures HAZ-4 and HAZ-5 would require project construction areas to be clear of combustible materials and to ensure that sufficient fire suppression equipment is available during construction activities which would reduce construction-related wildfire impacts. In addition, the project would maintain brush clearance around aboveground facilities to protect from damage from wildfire. The project's contribution would not be cumulatively considerable.

3.20.5.3 Cumulative Threshold 3: Requirement of Installation or Maintenance of Associated Infrastructure

The geographic context for the analysis of cumulative impacts related to the installation or maintenance of associated infrastructure that may exacerbate fire risk is the water service area. An impact could occur if multiple cumulative projects were to install infrastructure that would combine to exacerbate fire risk. Any new infrastructure would be required to comply with the necessary regulations, including the California Fire Code, CAL FIRE fire-safe design requirements, and the City's Fire and Public Works Standards, to minimize any fire risks. Therefore, a significant cumulative impact associated with exacerbated fire risk would not occur.

As discussed in Section 3.20.4.2, implementation of Mitigation Measures HAZ-4 and HAZ-5 would require construction areas to be clear of combustible materials and to ensure that sufficient fire suppression equipment is available during construction activities, which would reduce construction-related wildfire impacts. In addition, the project would maintain brush clearance around aboveground facilities to protect them from damage from wildfire. Therefore, the project's contribution would not be cumulatively considerable.

3.20.5.4 Cumulative Threshold 4: Exposure of People or Structures to Flooding or Landslides

The geographic context for the analysis of cumulative impacts that would 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, is the water service area. Construction of cumulative projects would involve grading and other earthmoving activities that could result in temporary and short-term localized soil erosion or landslides. However, these site-specific impacts are not expected to combine with the effects of other regional activities because compliance with City's Grading Ordinance, Storm Water Management Requirements, and associated BMPs, including construction site BMPs, would control erosion and construction-

related contaminants at each construction site. In the event that the steep slopes near reclaimed water facilities are burned, unstable soils could occur due to the lack of vegetation to anchor the hillside. The City's Department of Water and Power would implement BMPs to stabilize slopes and prevent sediment movement exposure to off-site adjacent occupants. Therefore, a significant cumulative impact would not occur, and project impacts would not be cumulatively considerable.

3.20.6 Conclusion

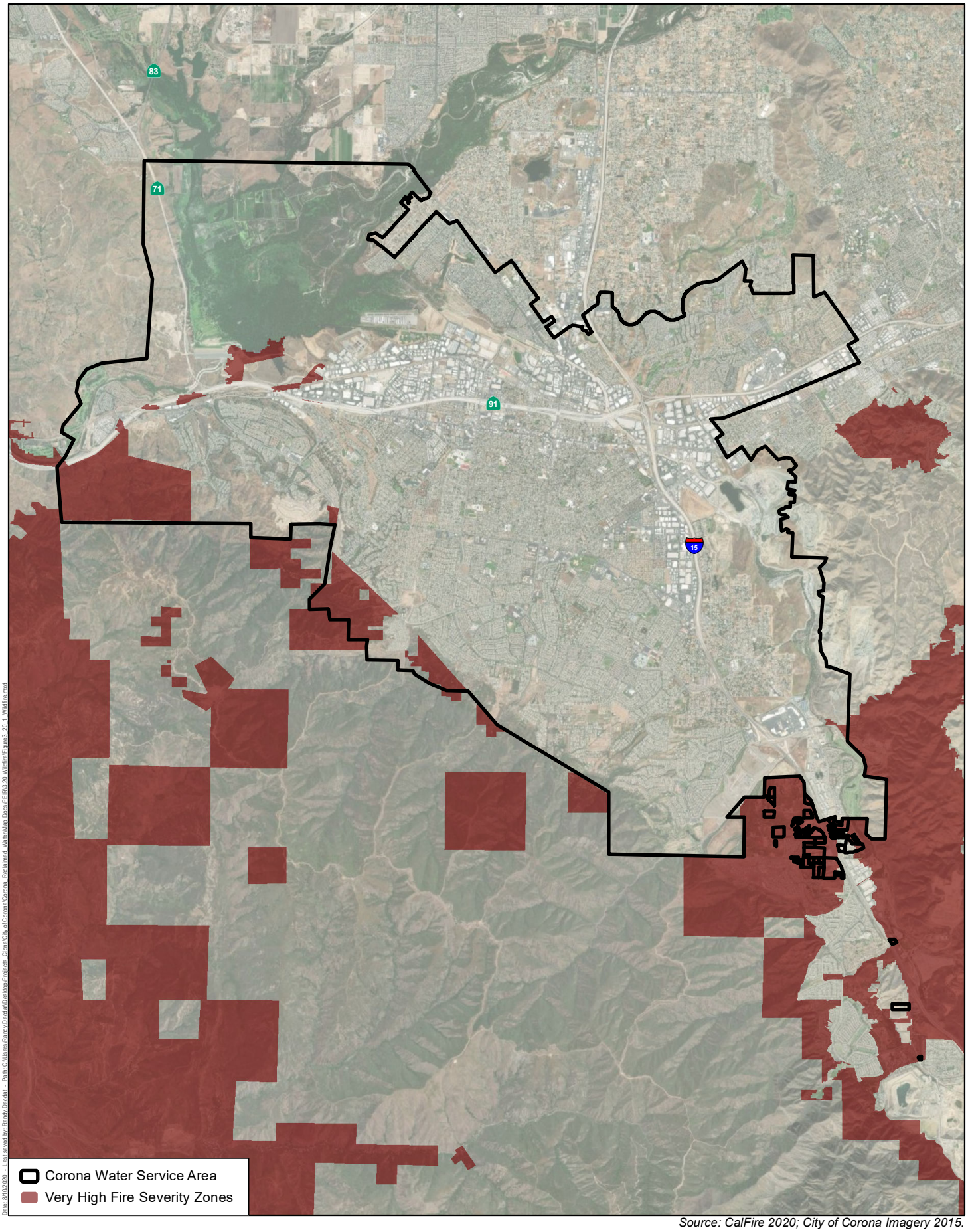
Project construction could impair or physically interfere with adopted Emergency Response Plans or Emergency Evacuation Plans. Implementation of Mitigation Measure HAZ-3 would require the preparation and implementation of a Construction Traffic Control Plan that would provide access for emergency vehicles at all times. In addition, the plan would require police, fire, and emergency services be notified of the timing, location, and duration of construction activities that could hinder or delay emergency access through the construction period. Direct and cumulative impacts would be less than significant with the incorporation of mitigation measures.

Construction activities would have the potential to exacerbate wildfire risks and expose construction workers to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. Implementation of Mitigation Measures HAZ-4 and HAZ-5 would require individual construction projects implement construction measures to avoid construction-related wildfire impacts from installation of reclaimed water infrastructure. Direct and cumulative impacts would be less than significant with the incorporation of mitigation measures.

Construction activities associated with the installation of reclaimed water infrastructure would have the potential to exacerbate fire risk or result in temporary or ongoing impacts to the environment. Implementation of Mitigation Measures HAZ-4 and HAZ-5 would require individual construction projects implement construction measures to avoid construction-related wildfire impacts from installation of reclaimed water infrastructure. Maintenance activities would not exacerbate fire risk and would not result in temporary or ongoing impacts to the environment. Direct and cumulative impacts would be less than significant with the incorporation of mitigation measures.

The project would not expose people or structures to significant risk associated with post-fire landslides, mudflows, and flooding. Direct and cumulative impacts would be less than significant.

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Source: CalFire 2020; City of Corona Imagery 2015.

Harris & Associates

Figure 3.20-1

Very High Fire Hazard Severity Zones

City of Corona 2018 Reclaimed Water Master Plan

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Chapter 4 Other CEQA Considerations

Section 15126 of the California Environmental Quality Act (CEQA) Guidelines requires that all aspects of a project be considered when evaluating its impact on the environment, including planning, acquisition, development, and operation. As part of this analysis, the Environmental Impact Report must identify the following three components, which are also addressed in this chapter:

- Growth-inducing impacts of the proposed project (addressed in Section 4.1, Growth Inducement)
- Significant, irreversible environmental effects that would be involved in the project should it be implemented (addressed in Section 4.2, Significant and Irreversible Environmental Effects)
- Significant environmental effects that cannot be avoided if the project is implemented (addressed in Section 4.3, Significant and Unavoidable Environmental Impacts)

4.1 Growth Inducement

As required by the CEQA Guidelines, an Environmental Impact Report must include a discussion of the ways in which the proposed project could directly or indirectly foster economic development or population growth, or the construction of additional housing and how that growth would, in turn, affect the surrounding environment (14 CCR 15126.2[d]). Growth can be induced in a number of ways, including the elimination of obstacles to growth or through the stimulation of economic activity in the region. The discussion of removal of obstacles to growth relates directly to the removal of infrastructure limitations or regulatory constraints that could result in growth unforeseen at the time of project approval. According to CEQA Guidelines, Section 15126.2(d), "it must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment." The analysis presented in this chapter discusses these factors.

The City is proposing to expand its reclaimed water system due to increased demand from its current customers in the City's water service area. The project would expand its reclaimed water services through the construction of new storage tanks, pump stations, and distribution pipelines. The City of Corona 2015 Urban Water Management Plan includes a population estimate and projection specific to the water service area. Based on these population projections, the City anticipates an incremental increase in wastewater generation. In addition, as the population grows, new reclaimed demands may increase in the form of new irrigable areas. New landscaping, parks, and schools required to support the population increase would generate new demand for reclaimed water. The City's potable water distribution system was originally designed to accommodate all water demand. As the reclaimed water system expands, demand for potable water decreases. This potable water supply saving would be available to support additional growth in the area. However, the amount of potable water production would be limited to the requirements of the existing and planned growth in the region. Therefore, the project would expand the existing reclaimed water

system to meet the increased demand for reclaimed water in the water service area and would not allow for an increase in population growth beyond what has been accounted for in the City's 2015 Urban Water Management Plan. Furthermore, the provision of reclaimed water alone would not allow for population growth because it cannot be consumed; potable water is the key indicator of population growth. Therefore, the proposed project would not directly or indirectly induce growth or remove an obstacle to growth.

Construction would be temporary, and the majority of workers would come from the City. Contractors who live outside the City would stay at existing local hotels during construction. Project operation and maintenance would be accomplished by current City employees and would not necessitate the creation of new jobs. The project would not increase demand for new housing or result in induced growth.

4.2 Significant and Irreversible Environmental Changes

The CEQA Guidelines (Section 15126.2[c]) require an evaluation of the significant, irreversible environmental changes that would be caused by a project if implemented as described below.

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 a highway improvement that 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.

In general, the CEQA Guidelines refer to the need to evaluate and justify the consumption of nonrenewable resources and the extent to which the project commits future generations to similar uses of nonrenewable resources. In addition, CEQA requires that irreversible damage resulting from an environmental accident associated with the project be evaluated.

Implementation of the project would indirectly result in the commitment of the following nonrenewable natural resources used in the construction process: fossil fuels, gravel, petroleum products, metals, and other materials. The project would also result in a minor commitment of slowly renewable resources, such as wood products. Operation of the project would also result in the commitment of energy resources, such as fossil fuels and electricity, for the distribution of reclaimed water. However, the amount of nonrenewable energy resources required to serve the project would be limited because the majority of reclaimed facilities would be passive. Therefore, the rate and amount of energy consumption would not result in the unnecessary, inefficient, or wasteful use of resources and would be accomplished in a manner consistent with applicable laws and regulations. Compliance with planning policies and standard conservation features would

ensure that natural resources are conserved to the maximum extent possible. Moreover, the project would increase the use of reclaimed water in the water service area. The use of reclaimed water reduces the demand for potable water; therefore, the project would have a beneficial result to the commitment of natural resources.

4.3 Significant and Unavoidable Environmental Impacts

California Public Resources Code, Section 21100(b)(2), requires that any significant effect on the environment that cannot be avoided be identified. Additionally, CEQA Guidelines, Section 15093(a), allows the lead agency to determine that the benefits of a proposed project outweigh the unavoidable adverse environmental impacts of implementing the project. Under this rule, the lead agency may approve a project with unavoidable adverse impacts if it prepares a Statement of Overriding Considerations that sets forth specific reasons for making such a decision.

Implementation of the mitigation measures identified in the Chapter 3, Environmental Analysis, would reduce the significant impacts identified for the project to below a level of significance. Therefore, no significant and unavoidable environmental impacts would occur from implementation of the project, and a Statement of Overriding Considerations is not required.

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Chapter 5 Alternatives to the Proposed Project

5.1 Introduction

In accordance with the California Environmental Quality Act (CEQA) Guidelines, Section 15126.6(c), this chapter describes a range of reasonable alternatives that could feasibly attain the majority of the project objectives while avoiding or substantially reducing one or more of the 2018 Reclaimed Water Master Plan's (project or 2018 RWMP) significant impacts. The primary purpose of this chapter is to inform decision makers and the general public of potential alternatives to the 2018 RWMP and to analyze these alternatives to determine the environmentally superior alternative.

Two alternatives to the project are analyzed in this chapter:

- **Alternative 1:** No Project/Existing 2001 RWMP Alternative
- **Alternative 2:** Reduced Project Alternative

5.2 Requirements for Alternatives Analysis

The CEQA Guidelines require an Environmental Impact Report (EIR) to analyze potential alternatives to the project or alternative locations for the project that could feasibly accomplish most of the basic project objectives and could avoid or substantially lessen one or more significant effects. The alternatives must include a No Project Alternative, along with a range of alternatives governed by a "rule of reason," meaning only those alternatives necessary to permit a reasoned choice. Following an analysis of alternatives, an EIR must identify the environmentally superior alternative, which cannot be the No Project Alternative (CEQA Guidelines, Section 15126.6).

5.3 Selection of Alternatives

The CEQA Guidelines do not require an EIR to consider every plausible alternative to a project. An EIR must examine in detail only a reasonable range of alternatives that the lead agency determines could feasibly attain most of the basic project objectives while also reducing impacts. An EIR does not need to consider alternatives with effects that cannot be reasonably ascertained and that implementation of is remote and speculative. Feasibility factors include site suitability, economic viability, availability of infrastructure, General Plan consistency, other plans or regulatory limitations, and jurisdictional boundaries and whether the proponent can reasonably acquire, control, or otherwise have access to an alternative site. The CEQA Guidelines define the term "feasible" to mean "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors" (CEQA Guidelines, Section 15364). Also, as stated in CEQA Guidelines, Section 15126.6(f)(1), "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."

Alternatives to the project were developed based on the requirements of CEQA Guidelines, Section 15126.6. Therefore, the alternatives were developed based on the project objectives, which are described in Chapter 2, Project Description. The project objectives include the following:

1. Expand and improve the City of Corona's (City's) recycled water program in accordance with Ordinance 2854 (Recycled Water Rules and Regulations)
2. Prioritize and implement system improvements pursuant to the 2018 Reclaimed Water Master Plan to maximize reclaimed water supply availability and reduce the use of potable water
3. Improve water supply system performance by facilitating supply management and maximizing water resources
4. Efficiently implement priority improvement projects to manage and distribute new sources of water supply as they become available

Additionally, only alternatives that would avoid or substantially lessen one or more significant environmental impacts of the project were carried forward for analysis. Table 5-1 provides a summary of the project's significant impacts identified in Chapter 3, Environmental Analysis, to focus the evaluation of the alternatives in Section 5.5, Alternatives Comparison. Refer to each individual issue area for a description of the mitigation measures identified to reduce potentially significant impacts to less than significant levels.

Table 5-1. Summary of Impacts of the Proposed Project

Issue Area	Proposed Project	
	Without Mitigation	With Mitigation
Section 3.1, Aesthetics		
Scenic Vistas	LS	LS
State Scenic Highway	LS	LS
Substantial Degradation of the Existing Visual Character or Conflict with Applicable Regulations	PS	LS
Nighttime Light and Glare	LS	LS
Section 3.2, Agriculture and Forestry Resources		
Conversion of Farmland	NI	NI
Conflict with Agricultural Zone or Williamson Act Contract	NI	NI
Conflict with Zoning for Forest Land or Timberland	NI	NI
Loss or Conversion of Forest Land	NI	NI
Other Changes to the Existing Environment	NI	NI

Table 5-1. Summary of Impacts of the Proposed Project

Issue Area	Proposed Project	
	Without Mitigation	With Mitigation
Section 3.3, Air Quality		
Consistency with Applicable Air Quality Plan	LS	LS
No Net Increase of Any Criteria Pollutants	LS	LS
Sensitive Receptors	LS	LS
Odors	LS	LS
Section 3.4, Biological Resources		
Sensitive Plant Species	PS	LS
Sensitive Animal Species	PS	LS
Riparian Habitat and Other Sensitive Natural Communities	PS	LS
Jurisdictional Aquatic Resources	PS	LS
Wildlife Corridors and Linkages	LS	LS
Local Policies and Ordinances	LS	LS
Regional Conservation Planning	PS	LS
Section 3.5, Cultural Resources		
Historic Resources	PS	LS
Archaeological Resources	PS	LS
Human Remains	PS	LS
Section 3.6, Energy		
Wasteful or Inefficient Energy Use	LS	LS
Conflict with Renewable or Energy Efficiency Plan	LS	LS
Section 3.7, Geology, Soils, and Paleontological Resources		
Seismic Hazards	PS	LS
Soil Erosion or Loss of Topsoil	LS	LS
Geologic Stability	PS	LS
Expansive Soils	PS	LS
Septic Tanks	NI	NI
Paleontological Resources	PS	LS
Section 3.8, Greenhouse Gas Emissions		
Greenhouse Gas Emissions	LS	LS
Consistency with Adopted Greenhouse Gas Reduction Plan	LS	LS
Section 3.9, Hazards and Hazardous Materials		
Routine Transport, Use, or Disposal of Hazardous Materials	LS	LS
Accidental Release of Hazardous Materials	PS	LS
Hazardous Emissions within 0.25 Mile of a School	LS	LS
Hazardous Materials Sites	LS	LS
Aircraft Safety Hazards	LS	LS

Table 5-1. Summary of Impacts of the Proposed Project

Issue Area	Proposed Project	
	Without Mitigation	With Mitigation
Emergency Response Plan or Evacuation Plan	PS	LS
Wildland Fires	PS	LS
Section 3.10, Hydrology and Water Quality		
Water Quality Standards	LS	LS
Groundwater Supplies	LS	LS
Alteration of Existing Drainage Patterns	LS	LS
Flood Hazards, Tsunami, or Seiche	LS	LS
Conflict with Water Quality Basin Plan	LS	LS
Section 3.11, Land Use and Planning		
Physical Division of Established Community	NI	NI
Conflict with Land Use Plan, Policy, or Regulation	PS	LS
Section 3.12, Mineral Resources		
Loss of Availability of Known Mineral Resources	LS	LS
Loss of Availability of Locally Important Mineral Resource Recovery Sites	LS	LS
Section 3.13, Noise		
Exceedance of Noise Standards	PS	LS
Excessive Groundborne Vibration or Noise	PS	LS
Aircraft Noise	LS	LS
Section 3.14, Population and Housing		
Induction of Substantial Population Growth	LS	LS
Displacement of Housing and People	NI	NI
Section 3.15, Public Services		
Fire Protection Services	NI	NI
Police Protection Services	NI	NI
Public School Facilities	NI	NI
Libraries	NI	NI
Section 3.16, Recreation		
Deterioration of Parks and Recreational Facilities	NI	NI
Construction or Expansion of Recreational Facilities	NI	NI
Section 3.17, Transportation		
Conflict with Program, Plan, Ordinance, or Policy	PS	LS
Vehicle Miles Traveled	LS	LS
Increase in Hazards	NI	NI
Inadequate Emergency Access	PS	LS
Section 3.18, Tribal Cultural Resources		
Tribal Cultural Resources	PS	LS

Table 5-1. Summary of Impacts of the Proposed Project

Issue Area	Proposed Project	
	Without Mitigation	With Mitigation
Section 3.19, Utilities and Service Systems		
Relocation or Construction of New Facilities	PS	LS
Sufficient Water Supplies	LS	LS
Adequate Wastewater Capacity	NI	NI
Solid Waste Generation	LS	LS
Compliance With Solid Waste Reduction Statutes and Regulations	LS	LS
Section 3.20, Wildfire		
Emergency Response or Evacuation Plan	PS	LS
Uncontrolled Spread of Wildfire	PS	LS
Requirement of Installation or Maintenance of Associated Infrastructure	PS	LS
Exposure of People or Structures to Flooding or Landslides	LS	LS

Notes: NI= No Impact; LS = Less than Significant; PS = Potentially Significant

5.4 Alternatives Considered

Four alternatives were initially considered for evaluation in this EIR. Based on criteria described in Section 5.3, Selection of Alternatives, two alternatives, the No Project/Existing 2001 RWMP Alternative and Reduced Project Alternative, were carried forward. These alternatives are described in Section 5.4.2, Alternatives Selected for Further Analysis. Section 5.4.1, Alternatives Considered But Rejected, describes the alternatives that were considered but rejected and provides reasoning for not carrying these alternatives forward for evaluation in this EIR.

5.4.1 Alternatives Considered But Rejected

Section 15126.6(c) of the CEQA Guidelines states that an EIR should identify alternatives that were considered by the lead agency but rejected as infeasible during the scoping process. An EIR should also describe the reasons for the lead agency's decision to eliminate alternatives from detailed consideration, which may include the following:

- Failure to meet most of the basic project objectives
- Inability to avoid significant environmental impacts
- Infeasibility

5.4.1.1 Rimpau Pipeline Realignment Alternative

The Rimpau Pipeline would provide the additional capacity needed to move Western Riverside County Regional Wastewater Authority (WRCRWA) supply to demands south of the water service area between City Park and Chase Park. The Rimpau Pipeline Realignment Alternative would realign the transmission pipeline to reduce the amount of pipeline required and increase reclaimed

water capacity with a more direct pipeline route. Under this alternative, the Rimpau Pipeline would connect to the existing 12-inch transmission main in Quarry Street at City Park and would install a new 20-inch pipeline in Buena Vista Avenue and Ontario Avenue. The Rimpau Pipeline could also be realigned in McKinley Street, Magnolia Avenue, Temescal Canyon Road, and Foothill Parkway.

While less pipeline would be required to be installed under the Rimpau Pipeline Realignment Alternative, this alternative would not meet Project Objective 1 because it would provide a reduced opportunity to add new commercial, industrial, and institutional and multi-family residential irrigation reclaimed water customers. Moreover, this alternative would not avoid or reduce an environmental impact identified in Chapters 3 and 4 of the Program Environmental Impact Report (PEIR). During construction, there would be excessive disturbance to highly congested streets that would result in increased transportation impacts. In addition, this alternative would result in increased impacts to biological resources due to the required construction of stream/flood control crossing and increased impacts to mineral resources due to the required crossing of an active surface mining operation. Finally, this alternative would require additional property acquisitions or easements due to the lack of existing right-of-way in the alternative alignment; therefore, this alternative is infeasible to implement and was rejected from further analysis.

5.4.1.2 WRCRWA Flow Control Improvements Relocation Alternative

The WRCRWA flow control improvements component of the 2018 RWMP was designed to control the flow from WRCRWA to deliver reclaimed water to either the Lincoln-Cota Ponds or to the Water Reclamation Facility 1 Tank. The WRCRWA Flow Control Improvements Relocation Alternative would relocate a flow control and pressure-reducing station to be installed inside Water Reclamation Facility 1 Tank as opposed to its current proposed location across from Butterfield Park. Unlike the project, this alternative would require the installation of 5,000 feet of parallel 20-inch pipe. While this alternative would meet the project objectives, it would not avoid or reduce an environmental impact identified in Chapters 3 and 4 of the PEIR. In fact, this alternative would result in additional biological resources impacts due to the requirement to install 5,000 feet of additional pipelines. Therefore, this alternative was rejected from further analysis.

5.4.2 Alternatives Selected for Further Analysis

A description of the two alternatives carried forward for analysis is provided in the following subsections.

5.4.2.1 Alternative 1: No Project/Existing 2001 Reclaimed Water Master Plan Alternative

Under the No Project/Existing 2001 RWMP Alternative, the 2018 RWMP would not be adopted and the City would continue with implementation of the adopted 2001 RWMP. Under this alternative, the existing reclaimed water system facilities and substructures would continue to operate. No new proposed reclaimed water projects (i.e., sources of supply, large distribution

pipelines, medium distribution pipelines, or small distribution pipelines) would be constructed or operated. In addition, this alternative would exclude the conversion of adjacent customers, data management projects, and the proposed additional studies.

5.4.2.2 Alternative 2: Reduced Project Alternative

The Reduced Project Alternative proposes to eliminate the components of the 2018 RWMP, which would be constructed in undeveloped areas. Under the Reduced Project Alternative, the 2018 RWMP would not include the WRCRWA Flow Control Improvements Project, the Promenade Pipeline, or the Research Pipeline. All other source of supply projects; small, medium, and large distribution pipelines; conversion of agricultural customers; data management projects; and additional studies would be included. This alternative would reduce the biological resources impacts associated with the implementation of the 2018 RWMP.

5.5 Alternatives Comparison

The following subsections present the analysis of each alternative compared to the project by issue area.

5.5.1 Analysis of Alternative 1: No Project/Existing 2001 Reclaimed Water Master Plan Alternative

5.5.1.1 Aesthetics

Compared to the proposed project, the No Project/Existing 2001 RWMP Alternative would result in reduced impacts to scenic vistas and would not conflict with zoning and regulations governing scenic quality because no construction of new aboveground water tanks, pump stations, or flow control improvements would occur. Existing facilities would continue to have nighttime security lighting as needed. Therefore, compared to the proposed project the No Project/Existing 2001 RWMP Alternative would have reduced aesthetic impacts compared to the proposed project.

5.5.1.2 Air Quality

Compared to the proposed project, the No Project/Existing 2001 RWMP Alternative would result in reduced impacts because construction activities that would result in additional air pollutant emissions would not occur. Operational maintenance activities would continue and air pollutant emissions would be similar to those in the 2018 RWMP. Therefore, the No Project/Existing 2001 RWMP Alternative would have reduced air quality impacts compared to the proposed project.

5.5.1.3 Biological Resources

Compared to the proposed project, the No Project/Existing 2001 RWMP Alternative would result in reduced impacts because no additional reclaimed water facilities would be constructed. Operational maintenance activities would continue and would not result in impacts. Therefore, the

No Project/Existing 2001 RWMP Alternative would have reduced biological resource impacts compared to the proposed project.

5.5.1.4 Cultural Resources

Compared to the proposed project, the No Project/Existing 2001 RWMP Alternative would avoid the project's less than significant impacts to historic resources, archaeological resources, and human remains because it would not result in ground-disturbing activities associated with the construction of reclaimed water facilities. Therefore, the No Project/Existing 2001 RWMP Alternative would have reduced cultural resources impacts compared to the proposed project.

5.5.1.5 Energy

Compared to the proposed project, the No Project/Existing 2001 RWMP Alternative would not result in an increase in energy consumption through the combustion of fossil fuels in construction vehicles, worker commute vehicles, and construction equipment because no construction activities would occur. Maintenance trips associated with the existing facilities would continue and would be similar to those for the proposed project. Therefore, the No Project/Existing 2001 RWMP Alternative would have reduced energy impacts compared to the proposed project.

5.5.1.6 Geology, Soils, and Paleontological Resources

Compared to the proposed project, the No Project/Existing 2001 RWMP would avoid the project's less than significant impact associated with geological hazards, unstable geology, expansive soils, and paleontological resources because no ground-disturbing activities would occur. Therefore, the No Project/Existing 2001 RWMP Alternative would have reduced geology, soils, and paleontological resources impacts compared to the proposed project.

5.5.1.7 Greenhouse Gas Emissions

Under the No Project/Existing 2001 RWMP, air pollutant and greenhouse gas (GHG) emissions associated with construction equipment, construction vehicles (e.g., haul trucks and vendor/delivery trucks), and worker vehicles would be avoided compared to the proposed project. Operational activities would continue and air pollutant emissions would be similar to those for the proposed project. Therefore, the No Project/Existing 2001 RWMP Alternative would have reduced GHG emissions impacts compared to the proposed project.

5.5.1.8 Hazards and Hazardous Materials

Under the No Project/Existing 2001 RWMP Alternative, the project's less than significant impacts would be reduced because less heavy equipment would be in operation that could result in the use and transport of hazardous materials. The existing reclaimed operations and maintenance of reclaimed water facilities would continue to implement existing health and safety practices and comply with federal, state, and local regulations related to the use, transport, and disposal of

hazardous materials. Under the No Project/Existing 2001 RWMP Alternative, impacts related to hazardous materials sites and limited full or partial closures that could interfere with an Emergency Response and Evacuation Plan would not occur compared to the proposed project because no construction activities would occur. In addition, the No Project/Existing 2001 Alternative would avoid the impacts related to wildland fire because no construction activities would occur. Therefore, the No Project/Existing 2001 RWMP Alternative would have reduced hazards and hazardous materials impacts compared to the proposed project.

5.5.1.9 Hydrology and Water Quality

Compared to the proposed project, the No Project/Existing 2001 RWMP Alternative would have no construction activities that could violate water quality standards or waste discharge requirements, provide additional sources of polluted runoff, or alter existing drainage patterns. Existing maintenance activities would still occur, and impacts would be similar to the proposed project. Therefore, the No Project/Existing 2001 RWMP Alternative would have reduced hydrology and water quality impacts compared to the proposed project.

5.5.1.10 Land Use and Planning

Under the No Project/Existing 2001 RWMP Alternative, the existing reclaimed water system facilities and substructures would continue to operate in accordance with the adopted 2001 RWMP. Therefore, compared to the proposed project, the No Project/Existing 2001 RWMP would result in similar less than significant environmental impacts due to conflict with any land use plan, policy, or regulation adopted to avoid or mitigate an environmental effect.

5.5.1.11 Mineral Resources

Compared to the proposed project, the No Project/Existing 2001 RWMP Alternative would not result in less than significant impacts related to land disturbance that would impact existing or future mining operations. Therefore, the No Project/Existing 2001 RWMP would have reduced mineral resource impacts compared to the proposed project.

5.5.1.12 Noise

Compared to the proposed project, the No Project/Existing 2001 RWMP Alternative would result in less than significant impacts related to excessive noise or vibration generated from construction activities. Operation of existing facilities would continue and would be similar to the proposed project. Therefore, the No Project/Existing 2001 RWMP would have reduced noise impacts compared to the proposed project.

5.5.1.13 Transportation

Compared to the proposed project, the No Project/Existing 2001 Existing RWMP Alternative would avoid the need for full or partial lane closures because construction activities would not

occur. The No Project/Existing 2001 Existing RWMP Alternative would not result in temporary impacts to local roadway segments or intersections or impaired access for emergency vehicles. In addition, under the No Project/Existing 2001 Existing RWMP Alternative, operational maintenance vehicle trips would continue and impacts would be similar to the proposed project. Therefore, the No Project/Existing 2001 RWMP Alternative would have reduced transportation impacts compared to the proposed project.

5.5.1.14 Tribal Cultural Resources

Compared to the proposed project, the No Project/Existing 2001 RWMP Alternative would avoid the project's less than significant impacts to tribal cultural resources because it would not result in ground-disturbing activities associated with the construction of reclaimed water facilities. Therefore, the No Project/Existing 2001 RWMP Alternative would have reduced tribal cultural resource impacts compared to the proposed project.

5.5.1.15 Utilities and Service Systems

The No Project/Existing 2001 Existing RWMP Alternative would not expand the existing reclaimed water system that would require new infrastructure be constructed compared to the proposed project. In addition, construction activities that would generate debris would not occur compared to the proposed project. Therefore, the No Project/Existing 2001 RWMP Alternative would have reduced utilities and service systems impacts compared to the proposed project.

5.5.1.16 Wildfire

Under the No Project/Existing 2001 RWMP Alternative, impacts related to limited full or partial closures that could interfere with an Emergency Response and Evacuation Plan would not occur compared to the proposed project because no construction activities would occur. In addition, the No Project/Existing 2001 RWMP Alternative would avoid the impacts related to uncontrolled spread of wildlife and installation of infrastructure because no construction activities would occur. Maintenance of existing reclaimed water infrastructure would occur and would be similar to the proposed project. Therefore, the No Project/Existing 2001 RWMP Alternative would have reduced wildfire impacts compared to the proposed project.

5.5.1.17 Relationship to the Project Objectives

The No Project/Existing 2001 RWMP would not meet the proposed project objectives. It would not expand or improve the City's recycled water program in accordance with Ordinance 2854 (Recycled Water Rules and Regulations) and would not maximize reclaimed water supply availability and would not reduce the use of potable water in the City. The No Project/Existing 2001 RWMP would not include supply management projects' conversion of adjacent customers or data management projects that would improve the reclaimed water supply performance. In addition, the alternative would not distribute new sources of reclaimed water supply and would

not efficiently implement priority improvement projects to manage and distribute new sources of water supply as they become available.

5.5.2 Analysis of Alternative 2: Reduced Project Alternative

5.5.2.1 Aesthetics

Compared to the proposed project, the Reduced Project Alternative would result in similar but less intensive impacts related to aesthetics because it would eliminate the aboveground WRCRWA Flow Control Improvements Project from the 2018 RWMP. However, mitigation would still be required for the operation of the remaining aboveground facilities that could present a significant permanent change to the visual character of the surrounding area. Mitigation Measure AES-1 would be implemented to reduce potentially significant impacts to visual character. Compared to the proposed project, the Reduced Project Alternative would eliminate the WRCRWA Flow Control Improvements, the Promenade Pipeline, and the Research Pipeline Projects from the 2018 RWMP. Therefore, compared to the proposed project, the Reduced Project Alternative would result in similar but less intensive less than significant impacts with mitigation.

5.5.2.2 Air Quality

Compared to the proposed project, the Reduced Project Alternative would eliminate the WRCRWA Flow Control Improvements, the Promenade Pipeline, and the Research Pipeline Projects from the 2018 RWMP. Similar to the proposed project, the Reduced Project Alternative would result in a similar less than significant impact related to a conflict with or obstruction of implementation of the applicable air quality plan. Compared to the proposed project, the Reduced Project Alternative would result in a similar less than significant construction impact related to the net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard since the alternative would construct three fewer projects. Compared to the proposed project, the Reduced Project Alternative would result in a similar less than significant impact related to sensitive receptors and other emissions (such as those leading to odors). Therefore, the Reduced Project Alternative would have similar less than significant air quality impacts compared to the proposed project.

5.5.2.3 Biological Resources

Compared to the proposed project, the Reduced Project Alternative would eliminate the WRCRWA Flow Control Improvements, the Promenade Pipeline, and the Research Pipeline Projects from the 2018 RWMP. Projects identified in the Reduced Project Alternative would be on developed/disturbed land and would avoid the project's less than significant impact with mitigation to sensitive plant and animal species, sensitive natural communities, or jurisdictional aquatic resources. Mitigation Measures BIO-1 through BIO-8 and BIO-11 through BIO-13 would not be required. Similar to the proposed project, the Reduced Project Alternative could result in

impacts to nesting birds (including raptors) through direct removal of nesting habitat and through disturbance to nesting birds from substantial sources of noise generated at the start of new construction during the nesting season. Implementation of Mitigation Measure BIO-9 would reduce impacts to less than significant. In addition, similar to the proposed project, the Reduced Project Alternative would result in less than significant impacts to wildlife corridors and linkages, local policies and ordinances, and regional conservation planning. Therefore, the Reduced Project Alternative would have reduced biological resources impacts compared to the proposed project.

5.5.2.4 Cultural Resources

Compared to the proposed project, the Reduced Project Alternative would result in similar but less intensive impacts related to cultural resources because it would eliminate the WRCRWA Flow Control Improvements, the Promenade Pipeline, and the Research Pipeline Projects from the 2018 RWMP. However, mitigation would still be required due to similar cultural resources sensitivities in the reduced project footprint. Mitigation Measures CUL-1, CUL-2, CUL-3, and CUL-4 would be implemented to reduce potentially significant impacts to historic resources, unknown archaeological resources, and human remains during project construction to a less than significant level. Therefore, the Reduced Project Alternative would result in similar but less intensive less than significant impacts with mitigation compared to the proposed project.

5.5.2.5 Energy

Compared to the proposed project, the Reduced Project Alternative would result in less intensive impacts related to energy because it would eliminate the WRCRWA Flow Control Improvements, the Promenade Pipeline, and the Research Pipeline projects from the 2018 RWMP. The Reduced Project Alternative would still require maintenance trips and the operation of two booster pump stations. Compared to the proposed project, the Reduced Project Alternative would result in similar less than significant impacts related to (1) the wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation, and (2) conflict with or obstruction of a state or local plan for renewable energy or energy efficiency. Therefore, the Reduced Project Alternative would result in similar energy impacts compared to the proposed project.

5.5.2.6 Geology, Soils, Paleontological Resources

Compared to the proposed project, the Reduced Project Alternative would result in less intensive impacts related to geology and soils because it would eliminate the WRCRWA Flow Control Improvements, the Promenade Pipeline, and the Research Pipeline Projects from the 2018 RWMP. However, mitigation would still be required due to similar geological impacts from the rest of the water service area. Also, compared to the proposed project, the Reduced Project Alternative would result in similar less than significant impacts regarding paleontological resources since project grading and excavation would impact underlying formations with a moderate to high potential to contain paleontological resources, requiring mitigation. Therefore, the Reduced Project

Alternative would result in similar but less intensive less than significant impacts with mitigation compared to the proposed project.

5.5.2.7 Greenhouse Gas Emissions

Compared to the proposed project, the Reduced Project Alternative would eliminate the WRCRWA Flow Control Improvements, the Promenade Pipeline, and the Research Pipeline Projects from the 2018 RWMP and would result in less intensive impacts related to GHG emissions due to construction. Therefore, the Reduced Project Alternative would result in similar but less intensive less than significant GHG emission impacts compared to the proposed project.

5.5.2.8 Hazards and Hazardous Materials

Compared to the proposed project, the Reduced Project Alternative would eliminate the WRCRWA Flow Control Improvements, the Promenade Pipeline, and the Research Pipeline Projects from the 2018 RWMP. However, the Reduced Project Alternative would include the five projects—Rimpau California Pipeline, River Pipeline, Sampson Pipeline, Buena Vista Tenth Avenue Pipeline, and Klug Pipeline—identified in the 2018 RWMP that would be in the vicinity of known hazardous waste sites. Implementation of Mitigation Measures HAZ-1 and HAZ-2 would reduce impacts to less than significant. Similar to the proposed project, construction of projects identified in the Reduced Project Alternative would require temporary full or partial lane closures requiring implementation of Mitigation Measure HAZ-3. The Reduced Project Alternative would include projects in the Very High Fire Hazard Severity Zone mapped by California Department of Forestry and Fire Protection and would include the Chase Tank, Chase Booster Pump Station, and WRCRWA Booster Pump Station. Similar to the proposed project, these projects would be on undeveloped sites that could contain potentially flammable materials requiring implementation of Mitigation Measures HAZ-4 and HAZ-5. The Reduced Project Alternative would result in similar less than significant impacts related to hazardous materials sites and aircraft safety. Therefore, the Reduced Project Alternative would result in similar less than significant hazards and hazardous materials impacts with mitigation compared to the proposed project.

5.5.2.9 Hydrology and Water Quality

Compared to the proposed project, the Reduced Project Alternative would eliminate the WRCRWA Flow Control Improvements, the Promenade Pipeline, and the Research Pipeline Projects from the 2018 RWMP. Compared to the proposed project, the Reduced Project Alternative would result in less intensive impacts related to hydrology and water quality because it would involve less reclaimed water projects. As a result, the Reduced Project Alternative would require less cut and fill and pollutants associated with overall construction activities that could result in water quality impacts. Thus, compared to the proposed project, the Reduced Project Alternative would result in less intensive less than significant impacts related to water quality; alteration of existing site drainage or hydrology; groundwater supplies; flooding, seiche, and

tsunami; and conflict with or obstruct the implementation of a Water Quality Control Plan or Sustainable Groundwater Management Plan. Therefore, the Reduced Project Alternative would result in similar but less intensive less than significant hydrology and water quality impacts compared to the proposed project.

5.5.2.10 Land Use and Planning

Compared to the proposed project, the Reduced Project Alternative would eliminate the WRCRWA Flow Control Improvements, the Promenade Pipeline, and the Research Pipeline Projects from the 2018 RWMP. Similar to the proposed project, the Reduced Project Alternative would not physically divide an established community. Implementation would conflict with an applicable land use plan, policy, or regulation and would be reduced to less than significant with Mitigation Measures AES-1, BIO-9, BIO-10, CUL-1, CUL-2, CUL-3, CUL-4, GEO-1, HAZ-3, and NOI-1. Therefore, the Reduced Project Alternative would result in similar land use and planning impacts compared to the proposed project.

5.5.2.11 Mineral Resources

Compared to the proposed project, the Reduced Project Alternative would eliminate the WRCRWA Flow Control Improvements, the Promenade Pipeline, and the Research Pipeline Projects from the 2018 RWMP. Similar to the proposed project, the Reduced Project Alternative would be in existing facilities or rights-of-way and would not result in substantial land disturbance that would impact existing or future mining operations. Therefore, the Reduced Project Alternative would result in similar mineral resource impacts compared to the proposed project.

5.5.2.12 Noise

Compared to the proposed project, the Reduced Project Alternative would eliminate the WRCRWA Flow Control Improvements, the Promenade Pipeline, and the Research Pipeline Projects from the 2018 RWMP. Similar to the proposed project, the Reduced Project Alternative would result in project-related construction activities that could be considered a significant nuisance under the City's Noise Ordinance criteria and would result in the exposure of people to, or generation of, excessive groundborne vibration or groundborne noise levels. Implementation of Mitigation Measures NOI-1 and NOI-2 would reduce these impacts to less than significant. Similar to the proposed project, the Reduced Project Alternative would result in less than significant impacts related to aircraft noise. Therefore, the Reduced Project Alternative would result in similar less than significant noise impacts with mitigation compared to the proposed project.

5.5.2.13 Transportation

Compared to the proposed project, the Reduced Project Alternative would eliminate the WRCRWA Flow Control Improvements, the Promenade Pipeline, and the Research Pipeline Projects from the 2018 RWMP. Similar to the proposed project, the Reduced Project Alternative

would result in project-related construction activities that would require full or partial lane closures that would result in temporary impacts to local roadway segments or intersections or impaired access for emergency vehicles. Implementation of Mitigation Measure HAZ-3 would reduce these impacts to less than significant. Similar to the proposed project, the Reduced Project Alternative would result in less than significant impacts related to vehicle miles traveled. Therefore, the Reduced Project Alternative would result in similar but less intensive less than significant transportation impacts with mitigation compared to the proposed project.

5.5.2.14 Tribal Cultural Resources

Compared to the proposed project, the Reduced Project Alternative would result in similar but less intensive impacts related to tribal cultural resources because it would eliminate the WRCRWA Flow Control Improvements, the Promenade Pipeline, and the Research Pipeline Projects from the 2018 RWMP. However, mitigation would still be required due to similar tribal cultural resources sensitivities in the reduced project footprint. Mitigation Measures CUL-2, CUL-3, and CUL-4 would be implemented to reduce potentially significant impacts to tribal cultural resources during project construction to a less than significant level. Therefore, the Reduced Project Alternative would result in similar but less intensive less than significant tribal cultural impacts with mitigation compared to the proposed project.

5.5.2.15 Utilities and Service Systems

Compared to the proposed project, the Reduced Project Alternative would eliminate the WRCRWA Flow Control Improvements, the Promenade Pipeline, and the Research Pipeline Projects from the 2018 RWMP. Although construction of reclaimed water utilities would be reduced, potentially significant impacts would be associated with the construction of new utility infrastructure under this alternative similar to the proposed project. Mitigation measures identified in Sections 3.1, Aesthetics; 3.4, Biological Resources; 3.5, Cultural Resources; 3.7, Geology, Soils, and Paleontological Resources; 3.9, Hazards and Hazardous Materials; 3.13, Noise; 3.17, Transportation; 3.18, Tribal Cultural Resources; and 3.20, Wildfire, of this PEIR would be implemented to reduce impacts, similar to the proposed project. Thus, compared to the proposed project, the Reduced Project Alternative would result in similar but less intensive less than significant impacts with mitigation regarding new utilities facilities. Similar to the proposed project, the Reduced Project Alternative would have no impact on water supply availability or wastewater treatment capacity and less than significant impacts related to solid waste generation and compliance with solid waste regulations. Therefore, the Reduced Project Alternative would result in similar utilities and service systems impacts compared to the proposed project.

5.5.2.16 Wildfire

Compared to the proposed project, the Reduced Project Alternative would eliminate the WRCRWA Flow Control Improvements, the Promenade Pipeline, and the Research Pipeline Projects from the

2018 RWMP. The Reduced Project Alternative would include projects in the Very High Fire Hazard Severity Zone mapped by CAL FIRE. Thus, compared to the proposed project, the Reduced Project Alternative would result in similar less than significant with mitigation impacts in regard to substantially impairing an adopted emergency response plan or emergency evacuation plan, pollutant concentrations, and the installation or maintenance of associated infrastructure. Also, similar to the proposed project, the Reduced Project Alternative would result in less than significant impacts related to flooding or landslides. Therefore, the Reduced Project Alternative would result in similar wildfire impacts compared to the proposed project.

5.5.2.17 Relationship to the Project Objectives

The Reduced Project Alternative proposes to reduce the number of projects proposed in the 2018 RWMP. Under the Reduced Project Alternative, the 2018 RWMP would not include the WRCRWA Flow Control Improvement Project, the Promenade Pipeline, and the Research Pipeline Projects. The Reduced Project Alternative would not meet Project Objective 1 because it would reduce the City's ability to expand the recycled water program with the addition of new commercial, industrial, and institutional and multi-family residential irrigation reclaimed water customers in the 1008.5 zone. In addition, the alternative would not meet Project Objective 2 because it would not maximize reclaimed water supply availability and would not convert current use of potable water to reclaimed water use. Without the WRCRWA Flow Control Improvement Project, the City would not be able to distribute the availability of its reclaimed water to its customers. The Reduced Alternative would meet Project Objectives 3 and 4 because it would include the Supervisory Control and Data Acquisition upgrades for supply management and the irrigation monitoring system to facilitate the coordination effort and enhance system performance. It would also include the proposed Capital Improvement Program to provide the City with a long-range planning tool to efficiently implement reclaimed water infrastructure improvement projects to distribute new sources of reclaimed water as they become available.

5.6 Environmentally Superior Alternative

An EIR is required to identify the environmentally superior alternative, the alternative with the potential for fewest environmental impacts, from among the range of reasonable alternatives evaluated. Table 5-2 provides a summary comparison of the alternatives with the proposed project with the purpose of highlighting whether each alternative would result in a similar, greater, or lesser impact than the proposed project with regard to potentially significant impacts. In addition, Table 5-3 provides a summary comparison of the alternatives to the proposed project to determine whether each alternative would meet the project objectives.

Table 5-2. Comparison of Alternatives with Proposed Project

Issue Areas	Proposed Project		Alternatives	
	Without Mitigation	With Mitigation	No Project/ Existing 2001 RWMP	Reduced Project Alternative
Section 3.1, Aesthetics				
Scenic Vistas	LS	LS	Reduced	Similar
State Scenic Highway	LS	LS	Reduced	Similar
Substantial Degradation of the Existing Visual Character or Conflict with Applicable Regulations	PS	LS	Reduced	Similar
Nighttime Light and Glare	LS	LS	Similar	Similar
Section 3.3, Air Quality				
Consistency with Applicable Air Quality Plan	LS	LS	Reduced	Similar
No Net Increase of Any Criteria Pollutants	LS	LS	Reduced	Similar
Sensitive Receptors	LS	LS	Reduced	Similar
Odors	LS	LS	Reduced	Similar
Section 3.4, Biological Resources				
Sensitive Plant Species	PS	LS	Reduced	Reduced
Sensitive Animal Species	PS	LS	Reduced	Reduced
Riparian Habitat and Other Sensitive Natural Communities	PS	LS	Reduced	Reduced
Jurisdictional Aquatic Resources	PS	LS	Reduced	Reduced
Wildlife Corridors and Linkages	LS	LS	Reduced	Similar
Local Policies and Ordinances	LS	LS	Reduced	Similar
Regional Conservation Planning	PS	LS	Reduced	Similar
Section 3.5, Cultural Resources				
Historic Resources	PS	LS	Reduced	Similar
Archaeological Resources	PS	LS	Reduced	Similar
Human Remains	PS	LS	Reduced	Similar
Section 3.6, Energy				
Wasteful or Inefficient Energy Use	LS	LS	Reduced	Similar
Conflict with Renewable or Energy Efficiency Plan	LS	LS	Reduced	Similar
Section 3.7, Geology, Soils, and Paleontological Resources				
Seismic Hazards	PS	LS	Reduced	Similar
Soil Erosion or Loss of Topsoil	LS	LS	Reduced	Similar
Geologic Stability	PS	LS	Reduced	Similar
Expansive Soils	PS	LS	Reduced	Similar
Septic Tanks	NI	NI	Reduced	Similar
Paleontological Resources	PS	LS	Reduced	Similar

Table 5-2. Comparison of Alternatives with Proposed Project

Issue Areas	Proposed Project		Alternatives	
	Without Mitigation	With Mitigation	No Project/ Existing 2001 RWMP	Reduced Project Alternative
Section 3.8, Greenhouse Gas Emissions				
Greenhouse Gas Emissions	LS	LS	Reduced	Similar
Consistency with Adopted Greenhouse Gas Reduction Plan	LS	LS	Reduced	Similar
Section 3.9, Hazards and Hazardous Materials				
Routine Transport, Use, or Disposal of Hazardous Materials	LS	LS	Reduced (Construction) Similar (Operation)	Similar
Accidental Release of Hazardous Materials	PS	LS	Reduced	Similar
Hazardous Emissions within 0.25 Mile of a School	LS	LS	Reduced	Similar
Hazardous Materials Sites	LS	LS	Reduced	Similar
Aircraft Safety Hazards	LS	LS	Reduced	Similar
Emergency Response Plan or Evacuation Plan	PS	LS	Reduced	Similar
Wildland Fires	PS	LS	Reduced	Similar
Section 3.10, Hydrology and Water Quality				
Water Quality Standards	LS	LS	Reduced	Reduced
Groundwater Supplies	LS	LS	Reduced	Similar
Alteration of Existing Drainage Patterns	LS	LS	Reduced	Similar
Flood Hazards, Tsunami, or Seiche	LS	LS	Reduced	Similar
Conflict with Water Quality Basin Plan	LS	LS	Reduced	Similar
Section 3.11, Land Use and Planning				
Physical Division of Established Community	NI	NI	Similar	Similar
Conflict with Land Use Plan, Policy, or Regulation	PS	LS	Similar	Similar
Section 3.12, Mineral Resources				
Loss of Availability of Known Mineral Resources	LS	LS	Reduced	Similar
Loss of Availability of Locally Important Mineral Resource Recovery Sites	LS	LS	Reduced	Similar
Section 3.13, Noise				
Exceedance of Noise Standards	PS	LS	Reduced	Similar
Excessive Groundborne Vibration or Noise	PS	LS	Reduced	Similar
Aircraft Noise	LS	LS	Reduced	Similar

Table 5-2. Comparison of Alternatives with Proposed Project

Issue Areas	Proposed Project		Alternatives	
	Without Mitigation	With Mitigation	No Project/ Existing 2001 RWMP	Reduced Project Alternative
Section 3.17, Transportation				
Conflict with Program, Plan, Ordinance, or Policy	PS	LS	Reduced	Similar
Vehicle Miles Traveled	LS	LS	Reduced	Similar
Increase in Hazards	NI	NI	Reduced	Similar
Inadequate Emergency Access	PS	LS	Reduced	Similar
Section 3.18, Tribal Cultural Resources				
Tribal Cultural Resources	PS	LS	Reduced	Similar
Section 3.19, Utilities and Service Systems				
Relocation or Construction of New Facilities	PS	LS	Reduced	Similar
Sufficient Water Supplies	LS	LS	Reduced	Similar
Adequate Wastewater Capacity	NI	NI	Similar	Similar
Solid Waste Generation	LS	LS	Reduced	Similar
Compliance With Solid Waste Reduction Statutes and Regulations	LS	LS	Reduced	Similar
Section 3.20, Wildfire				
Emergency Response or Evacuation Plan	PS	LS	Reduced	Similar
Uncontrolled Spread of Wildfire	PS	LS	Reduced	Similar
Requirement of Installation or Maintenance of Associated Infrastructure	PS	LS	Reduced	Similar
Exposure of People or Structures to Flooding or Landslides	LS	LS	Reduced	Similar

Notes: LS = Less than Significant; PS = Potentially Significant; NI = No Impact

Table 5-3. Ability of Project Alternative to Meet Proposed Project Objectives

Proposed Project Objectives	Ability of Alternatives to Meet the Proposed Project Objectives	
	No Project/ Existing 2001 RWMP	Reduced Project Alternative
1. Expand and improve the City's recycled water program in accordance with Ordinance 2854 (Recycled Water Rules and Regulations)	No	No
2. Prioritize and implement system improvements pursuant to the 2018 Reclaimed Water Master Plan to maximize reclaimed water supply availability and reduce the use of potable water	No	No
3. Improve water supply system performance by facilitating supply management and maximizing water resources	No	Yes
4. Efficiently implement priority improvement projects to manage and distribute new sources of water supply as they become available	No	Yes

As shown in Table 5-2, the level of environmental impacts associated with the No Project/Existing 2001 RWMP Alternative is less than the proposed project. This alternative would reduce all project-related impacts; therefore, the No Project/Existing 2001 RWMP Alternative would be considered the environmentally superior alternative. However, the No Project/Existing 2001 RWMP Alternative would not meet any of the project objectives. According to Section 15126.6 of the CEQA Guidelines, if the No Project Alternative (No Project/Existing 2001 RWMP Alternative) is selected as the environmentally superior alternative, then the EIR shall also identify an environmentally superior alternative among the other alternatives.

The Reduced Project Alternative would result in reduced impacts to biological resources and hydrology and water quality. All other impacts would remain similar to the proposed project. Therefore, the Reduced Project Alternative would result in the greatest reduction in environmental impacts compared to the proposed project and would be considered the environmentally superior alternative.

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Chapter 4, Other CEQA Considerations

None.

Chapter 5, Alternatives to the Proposed Project

None.

Chapter 6, Preparers and Persons Contacted

None.

Appendix A. NOP and NOP Comment Letters

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NOTICE OF PREPARATION AND SCOPING MEETING CITY OF CORONA

Date:	May 20, 2020
Subject:	Notice of Preparation and Scoping Meeting for the City of Corona 2018 Reclaimed Water Master Plan Program Environmental Impact Report
To:	State Clearinghouse, State Responsible Agencies, State Trustee Agencies, Other Public Agencies, Interested Organizations
Lead Agency/Sponsor:	City of Corona, Public Works Department
Project Title:	Program Environmental Impact Report for the City of Corona 2018 Reclaimed Water Master Plan

NOTICE IS HEREBY GIVEN that the City of Corona (City) will prepare a Program Environmental Impact Report (PEIR) for the City of Corona 2018 Reclaimed Water Master Plan (project). The City is the lead agency for the project. The purpose of this notice is (1) to serve as a Notice of Preparation of a PEIR pursuant to the California Environmental Quality Act (CEQA) Guidelines, Section 15082; (2) to advise and solicit comments and suggestions regarding the scope and content of the PEIR to be prepared for the project; and (3) to notice the public scoping meeting.

Consistent with §15168 of the CEQA Guidelines, the City will prepare a PEIR to address the environmental impacts associated with the project. The project is a long-term plan that will assist the City with meeting its goals for reclaimed water use by recommending the implementation of appropriate projects, programs, and additional studies. The 2018 Reclaimed Water Master Plan and all related CEQA documents can be accessed at the following website: www.CoronaCA.gov/RWMP

Notice of Preparation: The City, as the lead agency, requests that responsible and trustee agencies respond to this notice in a manner that is consistent with Section 15082(b) of the CEQA Guidelines. Pursuant to CEQA Guidelines, Section 15082(c), responsible agencies must submit any comments in response to this notice no later than 30 days after receipt. Comments in response to this notice must be submitted in writing at the address below at the close of the 30-day Notice of Preparation review period by 5:00 p.m. on June 18, 2020:

Mohammed Ibrahim, PE, Senior Engineer
City of Corona, Public Works Department
400 S. Vicentia Avenue, Suite 210, Corona, California 92882
(951) 739-4840
Mohammed.Ibrahim@CoronaCA.gov

Scoping Meeting: The City will hold a scoping meeting in conjunction with this Notice of Preparation to present the project and the PEIR process and to provide an opportunity for agency representatives and the public to assist the lead agency in determining the scope and content of the environmental analysis for the PEIR. The scoping meeting will be held on-line on June 2, 2020, at 5:00 pm. To attend the meeting visit the City's Website. The public can submit written comments at the following email address: WrittenPublicComments@CoronaCA.gov. The public can provide oral comments during the meeting by emailing OralPublicComments@CoronaCA.gov.

X *mohammed ibrahim*

Mohammed Ibrahim, PE, Senior Engineer

Project Location

As shown on Figure 1, Regional Location, the City is the northwesternmost city in the County of Riverside. It is bordered by the County of Orange to the west, the County of San Bernardino to the north, unincorporated communities in the County of Riverside to the east and south, and the incorporated Cities of Norco, Anaheim, Lake Elsinore, Chino Hills, Eastvale, Riverside, and Yorba Linda. The City is accessed by State Route 91 and Interstate 15. The City provides reclaimed water service to customers within its water service area. The City's water service area is in the western portion of the County of Riverside and includes the City and the unincorporated communities of El Cerrito and Coronita and parts of Temescal Canyon (Figure 2, Service Area Boundary). The City's water service area encompasses approximately 39 square miles.

Project Description

The City is in the process of preparing a PEIR for the project in accordance with CEQA. The last PEIR for the City's 2001 Reclaimed Water Master Plan was prepared in May 2001. Significant changes to the environmental resource topics are not anticipated. However, this updated PEIR will include the latest available developments and modeling. The purpose of the project is to assist the City with meeting its goals for reclaimed water use by recommending the implementation of appropriate projects, programs, and additional studies. The purpose is consistent with the City's larger motivations documented in the City of Corona 2004 General Plan, the City of Corona 2014–2019 Strategic Plan, Ordinance 2854 (Recycled Water Rules and Regulations), and the reclaimed water policy set forth by the City's Department of Water and Power.

Background Information

The City provides reclaimed water service to customers within its water service area. The City's water service area, which encompasses approximately 39 square miles, is in the western portion of the County of Riverside and includes the City and the unincorporated communities of El Cerrito and Coronita and parts of Temescal Canyon. The City is a member of the Western Riverside County Regional Wastewater Authority (WRCRWA), which operates a new wastewater reclamation facility in the City of Eastvale. The WRCRWA is a future source of reclaimed water for the City. The project recognizes the implications of the WRCRWA on the City's reclaimed water system, specifically the shift in location of one source of supply from Water Reclamation Facility 3 to the WRCRWA plant. Projects that support the transmission and distribution of reclaimed water from the WRCRWA were prioritized to take full advantage of this new source.

The project is guided by pending state legislation that would dictate the future of direct potable reuse (DPR) of reclaimed water. DPR involves the introduction of reclaimed water into the potable water system or the raw water supply of a potable water treatment facility. The state DPR policy will provide guidance on the level of treatment and safety precautions required to convert reclaimed water into potable water. DPR is anticipated to impact long-term planning of reclaimed water supply statewide; however, specific implications for the City are uncertain. Once the state DPR policy is finalized, the City will compare the feasibility of DPR to the feasibility of expanding the reclaimed water distribution system as an alternative for maximizing reclaimed water supply. The project examines the reclaimed water distribution system performance and expansion but defers expansion projects until the City determines the most effective use of its reclaimed water resources.

Based on the study area for the project, existing reclaimed water supply is provided by three City-owned and operated water reclamation facilities and two non-potable wells. The average annual production from these sources is approximately 11.35 million gallons per day. Supply of reclaimed water is anticipated to incrementally increase by an additional 0.88 million gallons per day (7.8 percent) through 2040 due to population growth. When the WRCRWA is fully implemented, the level of production will stay the same. However, the location of supply sources will shift north, and the City will have access to additional supply from the WRCRWA.

The primary demand for reclaimed water is irrigation. The reclaimed water system serves the irrigation demands of 26 City parks, 17 schools, and numerous City, commercial, industrial, and multi-family residential common area landscaping. A small amount of reclaimed water serves industrial dual plumbing (e.g., toilet flushing), sewer flushing, street sweeping, replenishment of cooling water, replenishment of recreational impoundment, firefighting training, and construction needs (e.g., dust control and soil compaction). The existing reclaimed water distribution system is relatively young, having been built within the last 10 years. The primary system components include 3 storage tanks with a combined capacity of 7 million gallons, 6 pumping facilities, 8 control valve stations, 54.5 miles of pipelines, and 331 permanent meters.

To meet the supply and demand needs of the City, the improvements proposed in the project are evaluated based on their economic, technical, and financial feasibility. Overall, the goals for implementing the WRCRWA are to (1) receive and use the City's full allocation of reclaimed water from the WRCRWA, and (2) to decommission Reclaimed Water Facility 3. Intermediate steps must be taken to achieve these goals, including improvements to the reclaimed water transmission system between the

WRCRWA and customers in the southern part of the water service area and improvements to the wastewater collection system between sewer customers in the southern part of the sewer shed and the water reclamation facilities in the northern part.

Successful implementation of the project would provide operational, economic, and financial opportunities, such as the reduction of demand spikes from parks, landscape management districts, and school districts, that would result in improved system performance. Other economic opportunities include the conversion of demand from potable water to reclaimed water, which would create an advantage for both the customer and the City. The result would be a decrease in the commodity rate of reclaimed water, which would allow reclaimed water to become a feasible alternative for customers, and the City would benefit from a higher net value for reclaimed water supply. Financial opportunities include the feasibility of project funding. A portion of qualifying expenses may be funded by the State Water Resources Control Board, which would make available grants and low interest loans. Other portions of the project may be funded by the Metropolitan Water District, which offers an incentive for the conversion of potable water demand to reclaimed water demand at a rate of $975 per acre-foot per year. Finally, the City may negotiate with developers on a case-by-case basis to fund a portion of the reclaimed water system.

To be successfully implemented, the project identified 33 projects that were evaluated, prioritized, and scheduled. These projects were split into four recommendations categories: (1) improvements surrounding the WRCRWA, (2) improvements to add demand, (3) enhancements to data collection, and (4) additional studies (Figure 3, Future Reclaimed Water System Projects). There are six projects involving future supply from the WRCRWA that are necessary to accommodate the shift in supply away from Water Reclamation Facility 3 to the WRCRWA. These projects focus on transmission and system performance.

In the future, the City may choose to allocate a portion of its reclaimed water supply to DPR. At this time, the viability of DPR is uncertain because legislation is pending. After the state has created the policy, the City will assess the economic and financial benefits of DPR and compare them to the benefits of expanding the reclaimed water distribution system to deliver non-potable water to customers. Improvements to add demand are in two categories: (1) conversion of adjacent demands and (2) distribution pipelines.

Two projects are recommended to enhance data collection. The City has an extensive automation system for its water facilities called Supervisory Control and Data Acquisition. The Supervisory Control and Data Acquisition system is used primarily for operational control and management of the City's water, wastewater, and reclaimed water assets. Enhancements to the supply management system and the irrigation monitoring system will provide insight on resource and demand management.

Two additional studies related to future uses of reclaimed water are recommended: (1) a study to monitor the County of Riverside's irrigation ordinance and (2) an injection well study. The City recently adopted the County of Riverside's Ordinance 859.3 regarding water-efficient landscape requirements for new construction and retrofit and the establishment of water budgets. The study to monitor the County of Riverside's irrigation ordinance would review the results of and monitoring requirements for implementation of the ordinance, which is anticipated to produce changes in irrigation behavior, demand, and parcel-level compliance calculations. The injection well study would consist of the use of strategically placed injections that should improve the groundwater recovery rate and increase detention time in the aquifer. The injection well study would review possible well locations and quantify the benefits over time.

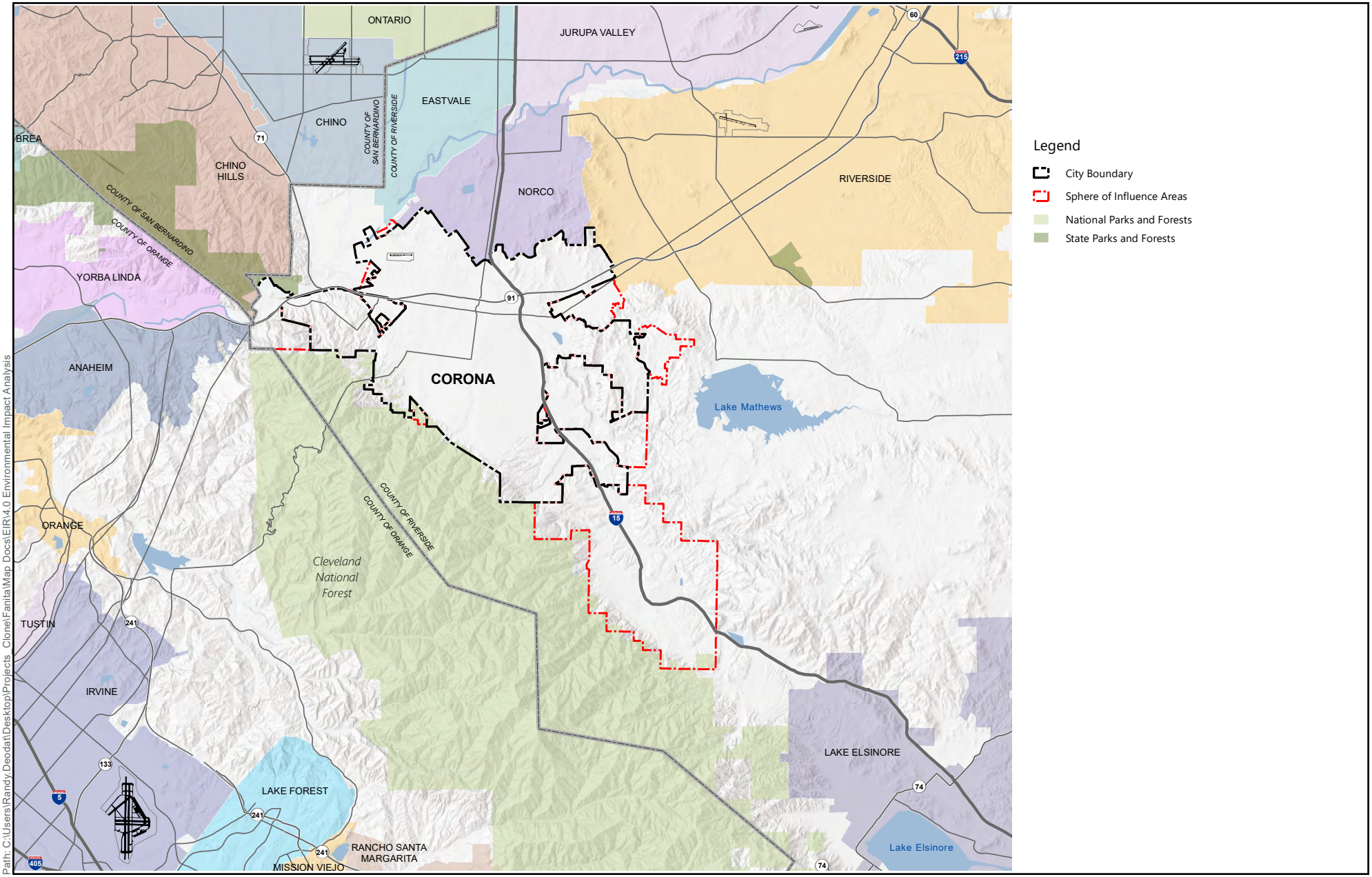
Environmental Factors Potentially Affected

The project could potentially affect the following environmental factors, each of which will be addressed in the PEIR:

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology/Soils
- Greenhouse Gas Emissions
- Hazards & Hazardous Materials
- Hydrology/Water Quality
- Land Use/Planning
- Mineral Resources
- Noise
- Population/Housing
- Public Services
- Recreation
- Transportation
- Tribal Cultural Resources
- Utilities/Service Systems
- Wildfire

Attachments

Figure 1, Regional Location
Figure 2, Service Area Boundary
Figure 3, Future Reclaimed Water System Projects



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Source: City of Corona 2018.

Harris & Associates

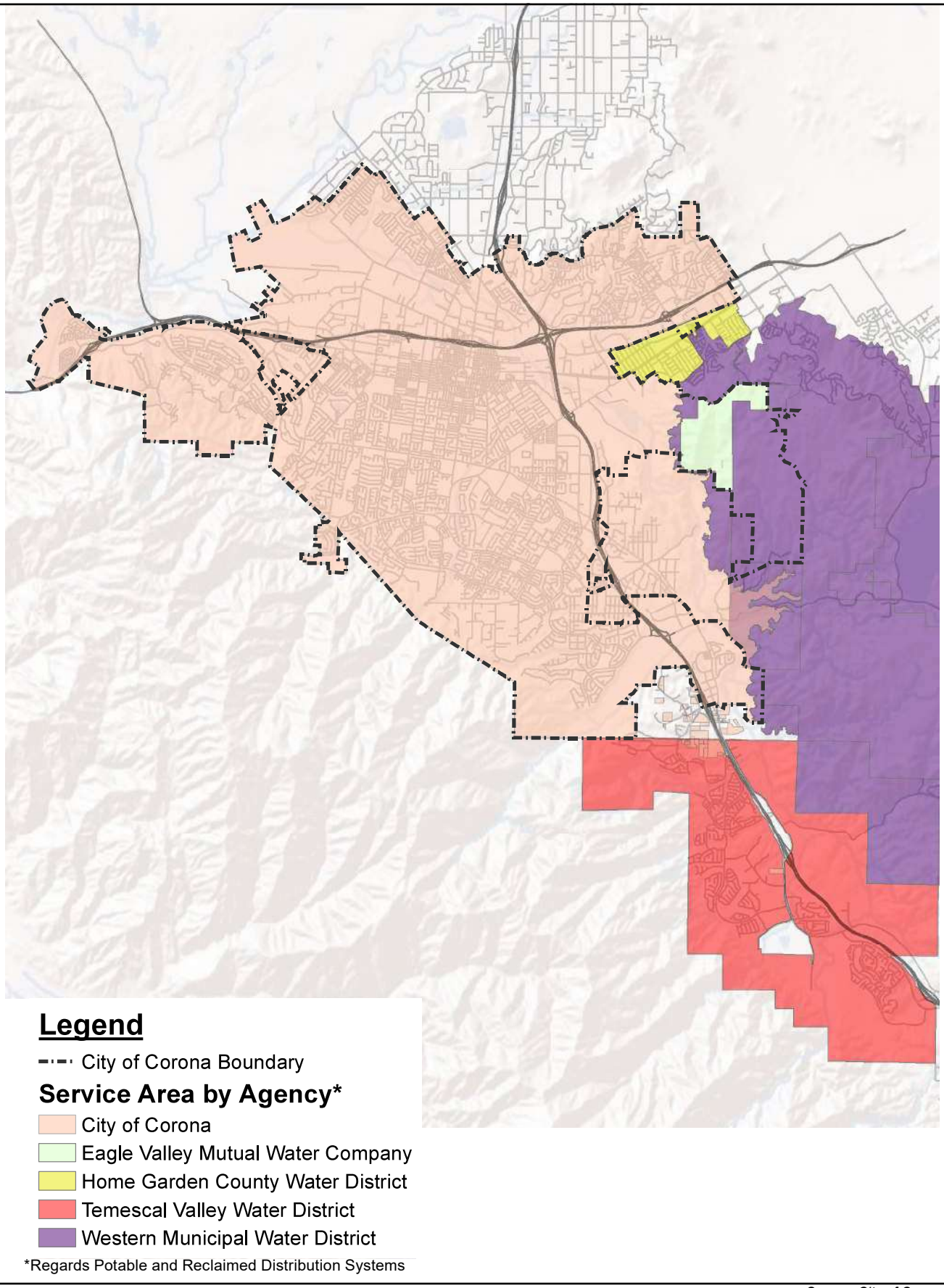
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Figure 1

Regional Location

City of Corona 2018 Reclaimed Water Master Plan



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Source: City of Corona 2018.

Harris & Associates

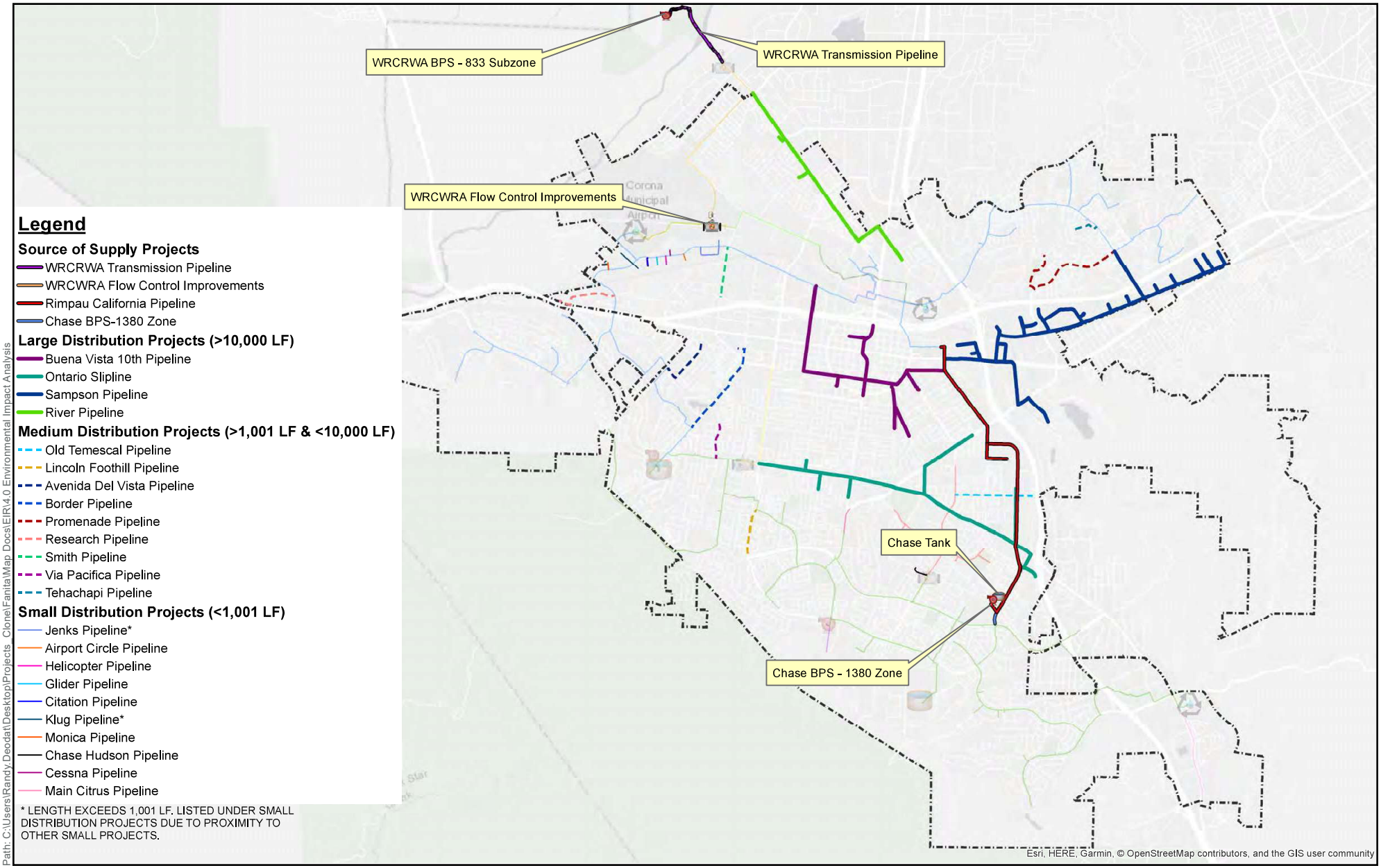
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Figure 2

Service Area Boundary



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Source: City of Corona 2018.

Harris & Associates

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Figure 3

Future Reclaimed Water System Projects

City of Corona 2018 Reclaimed Water Master Plan

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California 95691
(916) 373-3710
nahc@nahc.ca.gov
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May 27, 2020

Mohammed Ibrahim, PE, Senior Engineer
City of Corona
400 S. Vicentia Ave
Corona, CA 92882

Re: 2020050497, City of Corona Reclaimed Water Master Plan (RWMP) EIR Project, Riverside County

Dear Mr. Ibrahim:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements.** If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

- **a.** A brief description of the project.
- **b.** The lead agency contact information.
- **c.** Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
- **d.** A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).

- **a.** For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

- **a.** Alternatives to the project.
- **b.** Recommended mitigation measures.
- **c.** Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:

- **a.** Type of environmental review necessary.
- **b.** Significance of the tribal cultural resources.
- **c.** Significance of the project's impacts on tribal cultural resources.
- **d.** If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:

- **a.** Whether the proposed project has a significant impact on an identified tribal cultural resource.
- **b.** Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:

a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or

b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

a. Avoidance and preservation of the resources in place, including, but not limited to:

i. Planning and construction to avoid the resources and protect the cultural and natural context.

ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:

i. Protecting the cultural character and integrity of the resource.

ii. Protecting the traditional use of the resource.

iii. Protecting the confidentiality of the resource.

c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).

e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).

f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.

b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.

c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf.

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.
3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
    a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
    b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/.

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
    a. If part or all of the APE has been previously surveyed for cultural resources.
    b. If any known cultural resources have already been recorded on or adjacent to the APE.
    c. If the probability is low, moderate, or high that cultural resources are located in the APE.
    d. If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.

b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:

a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.

b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.

a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.

b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.

c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green

Andrew Green
Staff Services Analyst

cc: State Clearinghouse

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

SENT VIA E-MAIL: June 3, 2020

Mohammed.ibrahim@CoronaCA.gov
Mohammed Ibrahim, PE, Senior Engineer
City of Corona, Public Works Department
400 South Vicentia Avenue, Suite 210
Corona, CA 92882

Notice of Preparation of a Program Environmental Impact Report for the Proposed The City of Corona 2018 Reclaimed Water Master Plan

South Coast Air Quality Management District (South Coast AQMD) staff appreciates the opportunity to comment on the above-mentioned document. South Coast AQMD staff's comments are recommendations regarding the analysis of potential air quality impacts from the Proposed Project that should be included in the Program Environmental Impact Report (EIR). Please send South Coast AQMD a copy of the Program EIR upon its completion and public release. Note that copies of the Program EIR that are submitted to the State Clearinghouse are not forwarded to South Coast AQMD. Please forward a copy of the Program EIR directly to South Coast AQMD at the address shown in the letterhead. **In addition, please send with the Program EIR all appendices or technical documents related to the air quality, health risk, and greenhouse gas analyses and electronic versions of all air quality modeling and health risk assessment files[1]. These include emission calculation spreadsheets and modeling input and output files (not PDF files). Without all files and supporting documentation, South Coast AQMD staff will be unable to complete our review of the air quality analyses in a timely manner. Any delays in providing all supporting documentation will require additional time for review beyond the end of the comment period.**

Air Quality Analysis

South Coast AQMD adopted its California Environmental Quality Act (CEQA) Air Quality Handbook in 1993 to assist other public agencies with the preparation of air quality analyses. South Coast AQMD staff recommends that the Lead Agency use this Handbook as guidance when preparing its air quality analyses. Copies of the Handbook are available from the South Coast AQMD's Subscription Services Department by calling (909) 396-3720. More recent guidance developed since this Handbook was published is also available on South Coast AQMD's website at: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/ceqa-air-quality-handbook-(1993). South Coast AQMD staff also recommends that the Lead Agency use the CalEEMod land use emissions software. This software has recently been updated to incorporate up-to-date state and locally approved emission factors and methodologies for estimating pollutant emissions from typical land use development. CalEEMod is the only software model maintained by the California Air Pollution Control Officers Association (CAPCOA) and replaces the now outdated URBEMIS. This model is available free of charge at: www.caleemod.com.

On March 3, 2017, the South Coast AQMD's Governing Board adopted the 2016 Air Quality Management Plan (2016 AQMP), which was later approved by the California Air Resources Board on

[1] Pursuant to the CEQA Guidelines Section 15174, the information contained in an EIR shall include summarized technical data, maps, plot plans, diagrams, and similar relevant information sufficient to permit full assessment of significant environmental impacts by reviewing agencies and members of the public. Placement of highly technical and specialized analysis and data in the body of an EIR should be avoided through inclusion of supporting information and analyses as appendices to the main body of the EIR. Appendices to the EIR may be prepared in volumes separate from the basic EIR document, but shall be readily available for public examination and shall be submitted to all clearinghouses which assist in public review.

March 23, 2017. Built upon the progress in implementing the 2007 and 2012 AQMPs, the 2016 AQMP provides a regional perspective on air quality and the challenges facing the South Coast Air Basin. The most significant air quality challenge in the Basin is to achieve an additional 45 percent reduction in nitrogen oxide (NOx) emissions in 2023 and an additional 55 percent NOx reduction beyond 2031 levels for ozone attainment. The 2016 AQMP is available on South Coast AQMD's website at: http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan.

South Coast AQMD staff recognizes that there are many factors Lead Agencies must consider when making local planning and land use decisions. To facilitate stronger collaboration between Lead Agencies and South Coast AQMD to reduce community exposure to source-specific and cumulative air pollution impacts, South Coast AQMD adopted the Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning in 2005[2]. This Guidance Document provides suggested policies that local governments can use in their General Plans or through local planning to prevent or reduce potential air pollution impacts and protect public health. South Coast AQMD staff recommends that the Lead Agency review this Guidance Document as a tool when making local planning and land use decisions. Additional guidance on siting incompatible land uses (such as placing homes near freeways or other polluting sources) can be found in the California Air Resources Board's *Air Quality and Land Use Handbook: A Community Health Perspective*, which can be found at: http://www.arb.ca.gov/ch/handbook.pdf. Guidance[3] on strategies to reduce air pollution exposure near high-volume roadways can be found at: https://www.arb.ca.gov/ch/rd_technical_advisory_final.PDF.

South Coast AQMD has also developed both regional and localized air quality significance thresholds. South Coast AQMD staff requests that the Lead Agency compare the emissions to the recommended regional significance thresholds found here: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf. In addition to analyzing regional air quality impacts, South Coast AQMD staff recommends calculating localized air quality impacts and comparing the results to localized significance thresholds (LSTs). LSTs can be used in addition to the recommended regional significance thresholds as a second indication of air quality impacts when preparing a CEQA document. Therefore, when preparing the air quality analysis for the Proposed Project, it is recommended that the Lead Agency perform a localized analysis by either using the LSTs developed by South Coast AQMD or performing dispersion modeling as necessary. Guidance for performing a localized air quality analysis can be found at: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/localized-significance-thresholds.

When specific development is reasonably foreseeable as result of the goals, policies, and guidelines in the Proposed Project, the Lead Agency should identify any potential adverse air quality impacts and sources of air pollution that could occur using its best efforts to find out and a good-faith effort at full disclosure in the EIR. The degree of specificity will correspond to the degree of specificity involved in the underlying activity which is described in the EIR (CEQA Guidelines Section 15146). When quantifying air quality emissions, emissions from both construction (including demolition, if any) and operations should be calculated. Construction-related air quality impacts typically include, but are not limited to, emissions from the use of heavy-duty equipment from grading, earth-loading/unloading, paving, architectural coatings, off-road mobile sources (e.g., heavy-duty construction equipment) and on-road mobile sources (e.g., construction worker vehicle trips, material transport trips). Operation-related air

[2] South Coast AQMD. 2005. Accessed at: http://www.aqmd.gov/docs/default-source/planning/air-quality-guidance/complete-guidance-document.pdf.

[3] In April 2017, CARB published a technical advisory, *Strategies to Reduce Air Pollution Exposure Near High-Volume Roadways: Technical Advisory*, to supplement CARB's Air Quality and Land Use Handbook: A Community Health Perspective. This technical advisory is intended to provide information on strategies to reduce exposures to traffic emissions near high-volume roadways to assist land use planning and decision-making in order to protect public health and promote equity and environmental justice. The technical advisory is available at: https://www.arb.ca.gov/ch/landuse.htm.

quality impacts may include, but are not limited to, emissions from stationary sources (e.g., boilers), area sources (e.g., solvents and coatings), and vehicular trips (e.g., on- and off-road tailpipe emissions and entrained dust). Air quality impacts from indirect sources, such as sources that generate or attract vehicular trips, should be included in the analysis. Furthermore, for phased projects where there will be an overlap between construction and operational activities, emissions from the overlapping construction and operational activities should be combined and compared to South Coast AQMD's regional air quality CEQA *operational* thresholds to determine the level of significance.

If the Proposed Project generates or attracts vehicular trips, especially heavy-duty diesel-fueled vehicles, it is recommended that the Lead Agency perform a mobile source health risk assessment. Guidance for performing a mobile source health risk assessment ("*Health Risk Assessment Guidance for Analyzing Cancer Risk from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis*") can be found at: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/mobile-source-toxics-analysis. An analysis of all toxic air contaminant impacts due to the use of equipment potentially generating such air pollutants should also be included.

Mitigation Measures

If the Proposed Project generates significant adverse air quality impacts, CEQA requires that all feasible mitigation measures that go beyond what is required by law be utilized during project construction and operation to minimize or eliminate these impacts. Pursuant to CEQA Guidelines Section 15126.4 (a)(1)(D), any impacts resulting from mitigation measures must also be discussed. Several resources are available to assist the Lead Agency with identifying possible mitigation measures for the Proposed Project, including:

- Chapter 11 "Mitigating the Impact of a Project" of South Coast AQMD's *CEQA Air Quality Handbook*
- South Coast AQMD's CEQA web pages available here: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/mitigation-measures-and-control-efficiencies
- South Coast AQMD's Rule 403 – Fugitive Dust, and the Implementation Handbook for controlling construction-related emissions and Rule 1403 – Asbestos Emissions from Demolition/Renovation Activities
- California Air Pollution Control Officers Association's (CAPCOA) *Quantifying Greenhouse Gas Mitigation Measures* available here: http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf

Alternatives

If the Proposed Project generates significant adverse air quality impacts, CEQA requires the consideration and discussion of alternatives to the project or its location which are capable of avoiding or substantially lessening any of the significant effects of the project. The discussion of a reasonable range of potentially feasible alternatives, including a "no project" alternative, is intended to foster informed decision-making and public participation. Pursuant to CEQA Guidelines Section 15126.6(d), the Program EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the Proposed Project.

Permits

If implementation of the Proposed Project requires a permit from South Coast AQMD, South Coast AQMD should be identified as a Responsible Agency for the Proposed Project in the EIR. For more information on permits, please visit South Coast AQMD's webpage at:

http://www.aqmd.gov/home/permits. Questions on permits can be directed to South Coast AQMD's Engineering and Permitting staff at (909) 396-3385.

Data Sources

South Coast AQMD rules and relevant air quality reports and data are available by calling the South Coast AQMD's Public Information Center at (909) 396-2001. Much of the information available through the Public Information Center is also available via the South Coast AQMD's webpage (http://www.aqmd.gov).

South Coast AQMD staff is available to work with the Lead Agency to ensure that project's air quality impacts are accurately evaluated and mitigated where feasible. Please contact me at lsun@aqmd.gov, should you have any questions.

Sincerely,

Lijin Sun

Lijin Sun, J.D.
Draft Supervisor, CEQA IGR
Planning, Rule Development & Area Sources

LS
RVC200602-06
Control Number

JASON E. UHLEY
General Manager-Chief Engineer

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RIVERSIDE COUNTY FLOOD CONTROL
AND WATER CONSERVATION DISTRICT

June 4, 2020

Mr. Mohammed Ibrahim, PE, Senior Engineer
City of Corona
Public Works Department
400 S. Vicentia Avenue, Suite 210
Corona, CA 92882

Dear Mr. Ibrahim:

Re: Notice of Preparation of a Program Environmental Impact Report for the City of Corona 2018 Reclaimed Water Master Plan

This letter is written in response to the Notice of Preparation of a Program Environmental Impact Report (PEIR) for the City of Corona 2018 Reclaimed Water Master Plan, received by the Riverside County Flood Control and Water Conservation District (District). The City of Corona (City) proposes to implement 33 projects which would facilitate a new source of reclaimed water, improve reclaimed water distribution, and include new studies and data collection to inform the City for future project decisions. The City is the Lead Agency for this project under the California Environmental Quality Act (CEQA). The District is tasked with effectively managing flood hazards to protect life and property within Western Riverside County.

The District has reviewed the notice provided and has the following comments regarding this project:

1. Please be advised that the proposed project may be located within multiple District Master Drainage Plans (MDP). When fully implemented, these MDP facilities will provide adequate drainage and flood protection within the MDP area. The District's MDP facility maps can be viewed online at: http://content.rcflood.org/MDPADP/. The proposed project facilities should be designed and constructed in a manner to avoid conflicts with the MDP facilities. To obtain further information on the MDP and proposed facilities, please contact Mike Wong of the District's Planning Section at 951.955.1345.

2. The proposed project may impact existing District facilities and rights of way. Any work that involves District rights of way, easements, or facilities will require an encroachment permit from the District. Therefore, the District will likely be a CEQA Responsible Agency, and any potential impacts to District facilities should be considered in the PEIR. To obtain further information on District encroachment permits and to find an application form, please refer to: https://rcflood.org/I-Want-To/Services/Obtain-Encroachment-or-Access-Permit or contact the District at 951.955.1200 and speak with encroachment permit staff to help confirm permit requirements.

Re: Notice of Preparation of a Program Environmental Impact Report for the City of Corona 2018 Reclaimed Water Master Plan

Thank you for the opportunity to review this notice. If you have any questions or require additional information regarding the comments on this letter, please contact Sean Berriman at 951.955.1242 or me at 951.955.1306.

Very truly yours,

RANDY SHEPPEARD
Senior Flood Control Planner

ec: Mike Wong
Alberto Martinez

SB:mcv
P8\231551

DIRECTORS

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SINCE 1933

ORANGE COUNTY WATER DISTRICT

ORANGE COUNTY'S GROUNDWATER AUTHORITY

OFFICERS

President
VICENTE SARMIENTO, ESQ.

First Vice President
CATHY GREEN

Second Vice President
STEPHEN R. SHELDON

General Manager
MICHAEL R. MARKUS, P.E., D.WRE

June 8, 2020

Mr. Mohammed Ibrahim, P.E
City of Corona, Public Works Department
400 S. Vicentia Avenue, Suite 210
Corona, Ca 92882

Subject: OCWD Comments on Notice of Preparation of City of Corona Reclaimed Water Master Plan (SCH 2020050497)

Dear Mr. Ibrahim,

The Orange County Water District (OCWD) appreciates the opportunity to comment on the Notice of Preparation for City of Corona Reclaimed Water Master Plan (RWMP) Program Environmental Impact Report (EIR) (SCH 2020050497).

OCWD is a special district formed in 1933 by an act of the California Legislature. The District manages the groundwater basin that underlies north and central Orange County. Water produced from the basin is the primary water supply for approximately 2.5 million residents living within the District's boundaries. OCWD also owns more than 2,000 acres of land in the Prado Basin in Riverside County and is keenly interested in projects that may affect the Prado Basin. Prado Basin contains the single largest forested wetland in coastal Southern California and supports an abundance and diversity of wildlife, including many listed and sensitive species.

The proposed project is to assist the city with meeting its goals for reclaimed water use by recommending the implementation of appropriate projects, programs, and additional studies.

The EIR for the proposed project should assess potential environmental impacts associated with decreased discharges to surface water tributary to the Santa Ana River and Prado Basin. Increases in reclaimed water usage could result in decreased rates of discharges to surface water in the Santa Ana River, tributaries to the Santa Ana River, and to Prado Basin. Decreased discharge could have negative impacts on native riparian habitat, which are dependent on surface water and shallow groundwater. If any

projects are proposed in the City of Corona RWMP that could reduce the rate of discharge of treated water into Prado Basin, the Santa Ana River or tributaries to the Santa Ana River, the EIR should evaluate potential impacts to riparian habitat and threatened and endangered species in Prado Basin. Riparian habitat includes mulefat, willow trees and other plant species that are dependent on shallow groundwater or surface water for their health, recruitment of new plants, and survival.

Based on State Water Resources Control Board Division of Water Rights Wastewater Change Petition WW0056, the discharge to surface water from the City of Corona WRF-1 is required to be no less than 2.25 cubic feet per second with an annual discharge of no less than 1,625 acre feet. The EIR should reference this existing discharge requirement.

If you have any questions, please contact Kevin O'Toole at (714) 378-8248 or kotoole@ocwd.com.

Sincerely,

Michael R. Markus, P.E., D.WRE, BCEE, F.ASCE
General Manager

THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

Office of the General Manager

June 15, 2020

VIA EMAIL AND USPS

Mr. Mohammed Ibrahim
City of Corona
Public Works Department
400 S. Vicentia Avenue, Suite 210
Corona, CA 92882

Dear Mr. Ibrahim:

Notice of Preparation and Scoping Meeting for the
City of Corona 2018 Reclaimed Water Master Plan Program Environmental Impact Project

The Metropolitan Water District of Southern California (Metropolitan) reviewed the Notice of Preparation (NOP) and Scoping Meeting for the Program Environmental Impact Report (Program EIR) for the City of Corona 2018 Reclaimed Water Master Plan (Project). The City of Corona is acting as the Lead Agency under the California Environmental Quality Act (CEQA) for the project. The project proposes to develop a long-term plan that will assist the City with meeting its goals for reclaimed water use by recommending the implementation of appropriate projects, programs, and additional studies.

Metropolitan reviewed the NOP as a potentially affected public agency, and offers the following comments for consideration and incorporation into the Draft Program EIR:

Section 1.2.4, Executive Summary, Financial Opportunities, page 1-5, states "*MWD offers an incentive for the conversion of potable water demand to reclaimed water demand at a rate of $975 per acre-foot per year (AFY) converted. MWD has funded this incentive through the Onsite Retrofit Pilot Program since 2014.*"

Metropolitan may act as a responsible agency with respect to providing incentives for potable water demand conversions associated with our Local Resource Programs, and we therefore request to be included in the list of agencies that are expected to use the EIR in their decision-making, in accordance with CEQA Guidelines Section 15124. Additionally, the Draft Program EIR needs to include in the project description a brief statement on the proposed program incentives with Metropolitan, and discussed in the appropriate impact section (e.g., water supplies or utilities) so that Metropolitan can rely on the EIR for our own discretionary actions.

We appreciate the opportunity to provide input to your planning process, and look forward to reviewing additional CEQA documentation for the proposed project. Please contact Ms. Brenda Marines at (213) 217-7902 or bmarines@mwdh2o.com if you require further assistance.

Very truly yours,

Sean Carlson,
Team Manager, Environmental Planning Section

BSM:bsm
SharePoint\City of Corona 2018 Reclaimed Water Master Plan PEIR

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Inland Deserts Region
3602 Inland Empire Blvd., Suite C-220
Ontario, CA 91764
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

June 19, 2020
Sent via email

Mohammed Ibrahim
City of Corona Public Works Department
400 S. Vicentia Avenue, Suite 210
Corona, California 92882
Mohammed.Ibrahim@CoronaCA.gov

Subject: Notice of Preparation of a Draft Environmental Impact Report
City of Corona Reclaimed Water Master Plan Project
State Clearinghouse No. 2020050497

Dear Mr. Ibrahim:

The California Department of Fish and Wildlife (CDFW) received a Notice of Preparation (NOP) of a Draft Programmatic Environmental Impact Report (PEIR) from the City of Corona (City) for the Reclaimed Water Master Plan (RWMP) Project (Project) pursuant the California Environmental Quality Act (CEQA) and CEQA Guidelines.[1]

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code.

CDFW ROLE

CDFW is California's Trustee Agency for fish and wildlife resources, and holds those resources in trust by statute for all the people of the State. (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a).) CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. (*Id.*, § 1802.) Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

1 CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

CDFW is also submitting comments as a Responsible Agency under CEQA. (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381.) CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code. As proposed, for example, the Project may be subject to CDFW's lake and streambed alteration regulatory authority. (Fish & G. Code, § 1600 et seq.) Likewise, to the extent implementation of the Project as proposed may result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), the Project proponent may seek related take authorization as provided by the Fish and Game Code.

PROJECT DESCRIPTION SUMMARY

The PEIR will assist the City with meeting its goals for reclaimed water use by recommending the implementation of appropriate projects, programs, and additional studies. The City last prepared a Program Environmental Impact Report for the City's 2001 Reclaimed Water Master Plan in May 2001. The updated PEIR will include the latest available developments and modeling to assist the City to meet the goals for reclaimed water use and be consistent with the City of Corona 2004 General Plan, the City of Corona 2014–2019 Strategic Plan, Ordinance 2854 (Recycled Water Rules and Regulations), and the reclaimed water policy set forth by the City's Department of Water and Power.

COMMENTS AND RECOMMENDATIONS

CDFW offers the comments and recommendations below to assist the City in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources. The comments and recommendations are also offered to enable the CDFW to adequately review and comment on the proposed Project with respect to the Project's consistency with the Western Riverside County/Coachella Valley Multiple Species Habitat Conservation Plan (MSHCP).

CDFW recognizes that the PEIR need not be as detailed as CEQA documents prepared for specific projects that may follow (CEQA Guidelines § 15146). CDFW also recognizes that the level of detail should be reflective of the level contained in the plan or plan element being considered (Rio Vista Farm Bureau Center v. County of Solano (1992) 5 Cal.App.4th 351). However, please note that the City cannot defer the analysis of significant effects of the general plan to later-tiered CEQA documents (Stanislaus Natural Heritage Project v. County of Stanislaus (1996) 48 Cal.App.4th 182).

CDFW recommends that the forthcoming PEIR address the following:

Assessment of Biological Resources

Section 15125(c) of the CEQA Guidelines states that knowledge of the regional setting of a project is critical to the assessment of environmental impacts and that special

emphasis should be placed on environmental resources that are rare or unique to the region. To enable CDFW staff to adequately review and comment on the project, the PEIR should include a complete assessment of the flora and fauna within and adjacent to the Project footprint, with particular emphasis on identifying rare, threatened, endangered, and other sensitive species and their associated habitats.

The CDFW recommends that the PEIR specifically include:

1. An assessment of the various habitat types located within the project footprint, and a map that identifies the location of each habitat type. CDFW recommends that floristic, alliance- and/or association-based mapping and assessment be completed following *The Manual of California Vegetation*, second edition (Sawyer et al. 2009). Adjoining habitat areas should also be included in this assessment where site activities could lead to direct or indirect impacts offsite. Habitat mapping at the alliance level will help establish baseline vegetation conditions.

2. A general biological inventory of the fish, amphibian, reptile, bird, and mammal species that are present or have the potential to be present within each habitat type onsite and within adjacent areas that could be affected by the project. CDFW's California Natural Diversity Database (CNDDB) in Sacramento should be contacted at (916) 322-2493 or CNDDB@wildlife.ca.gov to obtain current information on any previously reported sensitive species and habitat, including Significant Natural Areas identified under Chapter 12 of the Fish and Game Code, in the vicinity of the proposed Project.

   Please note that CDFW's CNDDB is not exhaustive in terms of the data it houses, nor is it an absence database. CDFW recommends that it be used as a starting point in gathering information about the *potential presence* of species within the general area of the project site.

3. A complete, *recent* inventory of rare, threatened, endangered, and other sensitive species located within the Project footprint and within offsite areas with the potential to be affected, including California Species of Special Concern (CSSC) and California Fully Protected Species (Fish and Game Code § 3511). Species to be addressed should include all those which meet the CEQA definition (CEQA Guidelines § 15380). The inventory should address seasonal variations in use of the Project area and should not be limited to resident species. Focused species-specific/MSHCP surveys, completed by a MSHCP Acceptable Biologist/qualified biologist and conducted at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable, are required. Acceptable species-specific survey procedures should be developed in consultation with CDFW and the U.S. Fish and Wildlife Service, where necessary. Note that CDFW generally considers biological field assessments for wildlife to be valid for a one-year period, and assessments for rare plants may be considered valid for a period of up to three years. Some aspects of the proposed Project may warrant periodic updated surveys

for certain sensitive taxa, particularly if the Project is proposed to occur over a protracted time frame, or in phases, or if surveys are completed during periods of drought.

Threatened/Endangered Avian Species

The proposed Project occurs within the range of least Bell's vireo (*Vireo bellii pusillus*), western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), and willow flycatchers (Empidonax traillii), state and federally-listed endangered species, as well as tricolored blackbird (*Agelaius tricolor*), a state threatened species. CDFW recommends that the City of Corona complete protocol level surveys, if available, over all areas (i.e., 100 percent coverage) proposed to be directly or indirectly affected by the Project (refer to https://wildlife.ca.gov/Conservation/Survey-Protocols#377281284-birds). CDFW recommends that if a survey protocol and/or guideline are not available, the City of Corona consult with CDFW to determine the best methodology for determining the presence or support for a negative finding for a particular species. A qualified biologist should also be retained to complete the species-specific surveys and his/her qualifications submitted to CDFW and the USFWS prior to initiation of surveys.

Analysis of Direct, Indirect, and Cumulative Impacts to Biological Resources

The PEIR should provide a thorough discussion of the direct, indirect, and cumulative impacts expected to adversely affect biological resources as a result of the Project. To ensure that Project impacts to biological resources are fully analyzed, the following information should be included in the PEIR:

1. A discussion of potential impacts from Project-related changes on drainage patterns and water quality within, upstream, and downstream of the Project site, including: (a) a habitat-based stream needs assessment that incorporates habitat, species, and life history criteria; (b) quantification of the loss of biological resources that will occur as a result of the reduction of discharge and an evaluation of the impacts to resources based on the proposed amount of water flow that will be present in both streams as a result of the reduction of discharge; and (c) identification of minimum flows needed to maintain any existing aquatic habitat, fish, and wildlife resources.

2. A discussion of potential indirect Project impacts on biological resources, including resources in areas adjacent to the project footprint, such as nearby public lands (e.g. National Forests, State Parks, etc.), open space, adjacent natural habitats, riparian ecosystems, wildlife corridors, and any designated and/or proposed reserve or mitigation lands (e.g., preserved lands associated with a Natural Community Conservation Plan, or other conserved lands).

3. An evaluation of impacts to adjacent open space lands from both the construction of the Project and any long-term operational and maintenance needs.

4. A cumulative effects analysis developed as described under CEQA Guidelines section 15130. Please include all potential direct and indirect Project related impacts to riparian areas, wetlands, vernal pools, alluvial fan habitats, wildlife corridors or wildlife movement areas, aquatic habitats, sensitive species and other sensitive habitats, open lands, open space, and adjacent natural habitats in the cumulative effects analysis. General and specific plans, as well as past, present, and anticipated future projects, should be analyzed relative to their impacts on similar plant communities and wildlife habitats.

Alternatives Analysis

CDFW recommends the PEIR describe and analyze a range of reasonable alternatives to the Project that are potentially feasible, would "feasibly attain most of the basic objectives of the Project," and would avoid or substantially lessen any of the Project's significant effects (CEQA Guidelines § 15126.6[a]). The alternatives analysis should also evaluate a "no project" alternative (CEQA Guidelines § 15126.6[e]).

Mitigation Measures for Project Impacts to Biological Resources

The PEIR should identify mitigation measures and alternatives that are appropriate and adequate to avoid or minimize potential impacts, to the extent feasible. The City should assess all direct, indirect, and cumulative impacts that are expected to occur as a result of the implementation of the Project and its long-term operation and maintenance. When proposing measures to avoid, minimize, or mitigate impacts, CDFW recommends consideration of the following:

1. *Fully Protected Species*: Fully protected species may not be taken or possessed at any time. Project activities described in the PEIR should be designed to completely avoid any fully protected species that have the potential to be present within or adjacent to the Project area. A fully protected species that has the potential or has been documented to occur within or adjacent to the Project area includes the white-tailed kite (*Elanus leucurus)*.

2. CDFW also recommends that the PEIR fully analyze potential adverse impacts to fully protected species due to habitat modification, loss of foraging habitat, and/or interruption of migratory and breeding behaviors. CDFW recommends that the City include in the analysis how appropriate avoidance, minimization, and mitigation measures will reduce indirect impacts to fully protected species.

3. *Sensitive Plant Communities*: CDFW considers sensitive plant communities to be imperiled habitats having both local and regional significance. Plant communities, alliances, and associations with a statewide ranking of S-1, S-2, S-3, and S-4 should be considered sensitive and declining at the local and regional level. These ranks can be obtained by querying the CNDDB and are included in *The Manual of California Vegetation* (Sawyer et al. 2009). The PEIR should include measures to

fully avoid and otherwise protect sensitive plant communities from project-related direct and indirect impacts.

4. *California Species of Special Concern* (CSSC): CSSC status applies to animals generally not listed under the federal Endangered Species Act or the CESA, but which nonetheless are declining at a rate that could result in listing, or historically occurred in low numbers and known threats to their persistence currently exist. CSSCs should be considered during the environmental review process. CSSC that have the potential or have been documented to occur within or adjacent to the project area, including, but not limited to: Cooper's hawk (*Accipiter cooperii*), loggerhead shrike (*Lanius ludovicianus*), sharp-shinned hawk (*Accipiter striatus*), Swainson's hawk (*Buteo swainsoni*), yellow warbler (*Dendroica petechia*), and yellow-breasted chat (*Icteria virens*). Aquatic habitat may support several sensitive species, including, but not limited to arroyo chub (*Gila orcutti*), Santa Ana sucker (*Catostomus santaanae*), and southwestern pond turtle (*Clemmys tigris multiscutatus*).

5. *Mitigation*: CDFW considers adverse project-related impacts to sensitive species and habitats to be significant to both local and regional ecosystems, and the PEIR should include mitigation measures for adverse project-related impacts to these resources. Mitigation measures should emphasize avoidance and reduction of project impacts. For unavoidable impacts, onsite habitat restoration and/or enhancement, and preservation should be evaluated and discussed in detail. Where habitat preservation is not available onsite, offsite land acquisition, management, and preservation should be evaluated and discussed in detail.

   The PEIR should include measures to perpetually protect the targeted habitat values within mitigation areas from direct and indirect adverse impacts in order to meet mitigation objectives to offset project-induced qualitative and quantitative losses of biological values. Specific issues that should be addressed include restrictions on access, proposed land dedications, long-term monitoring and management programs, control of illegal dumping, water pollution, increased human intrusion, etc.

   If sensitive species and/or their habitat may be impacted from the Project, CDFW recommends the inclusion of specific mitigation in the PEIR. CEQA Guidelines section 15126.4, subdivision (a)(1)(8) states that formulation of feasible mitigation measures should not be deferred until some future date. The Court of Appeal in *San Joaquin Raptor Rescue Center* v. *County* of *Merced* (2007) 149 Cal.App.4th 645 struck down mitigation measures which required formulating management plans developed in consultation with State and Federal wildlife agencies after Project approval. Courts have also repeatedly not supported conclusions that impacts are mitigable when essential studies, and therefore impact assessments, are incomplete *(Sundstrom* v. *County* of *Mendocino* (1988) 202 Cal. App. 3d. 296; *Gentry* v. *City* of *Murrieta (1995)* 36 Cal. App. 4th 1359; *Endangered Habitat League, Inc.* v. *County* of *Orange* (2005) 131 Cal. App. 4th 777).

CDFW recommends that the PEIR specify mitigation that is roughly proportional to the level of impacts, in accordance with the provisions of CEQA (CEQA Guidelines, §§ 15126.4(a)(4)(B), 15064, 15065, and 16355). The mitigation should provide long-term conservation value for the suite of species and habitat being impacted by the Project. Furthermore, in order for mitigation measures to be effective, they need to be specific, enforceable, and feasible actions that will improve environmental conditions.

6. *Habitat Revegetation/Restoration Plans*: Plans for restoration and revegetation should be prepared by persons with expertise in southern California ecosystems and native plant restoration techniques. Plans should identify the assumptions used to develop the proposed restoration strategy. Each plan should include, at a minimum: (a) the location of restoration sites and assessment of appropriate reference sites; (b) the plant species to be used, sources of local propagules, container sizes, and seeding rates; (c) a schematic depicting the mitigation area; (d) a local seed and cuttings and planting schedule; (e) a description of the irrigation methodology; (f) measures to control exotic vegetation on site; (g) specific success criteria; (h) a detailed monitoring program; (i) contingency measures should the success criteria not be met; and (j) identification of the party responsible for meeting the success criteria and providing for conservation of the mitigation site in perpetuity. Monitoring of restoration areas should extend across a sufficient time frame to ensure that the new habitat is established, self-sustaining, and capable of surviving drought.

   CDFW recommends that local onsite propagules from the Project area and nearby vicinity be collected and used for restoration purposes. Onsite seed collection should be initiated in order to accumulate sufficient propagule material for subsequent use in future years. Onsite vegetation mapping at the alliance and/or association level should be used to develop appropriate restoration goals and local plant palettes. Reference areas should be identified to help guide restoration efforts. Specific restoration plans should be developed for various project components as appropriate.

   Restoration objectives should include protecting special habitat elements or re-creating them in areas affected by the Project; examples could include retention of woody material, logs, snags, rocks, and brush piles.

7. *Nesting Birds and Migratory Bird Treaty Act:* Please note that it is the Project proponent's responsibility to comply with all applicable laws related to nesting birds and birds of prey. Fish and Game Code sections 3503, 3503.5, and 3513 afford protective measures as follows: Fish and Game Code section 3503 makes it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by Fish and Game Code or any regulation made pursuant thereto. Fish and Game Code section 3503.5 makes it unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) to take,

possess, or destroy the nest or eggs of any such bird except as otherwise provided by Fish and Game Code or any regulation adopted pursuant thereto. Fish and Game Code section 3513 makes it unlawful to take or possess any migratory nongame bird except as provided by the rules and regulations adopted by the Secretary of the Interior under provisions of the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. § 703 et seq.).

CDFW recommends that the PEIR include the results of avian surveys, as well as specific avoidance and minimization measures to ensure that impacts to nesting birds do not occur. Project-specific avoidance and minimization measures may include, but not be limited to: project phasing and timing, monitoring of project-related noise (where applicable), sound walls, and buffers, where appropriate. The PEIR should also include specific avoidance and minimization measures that will be implemented should a nest be located within the project site. If pre-construction surveys are proposed in the PEIR, the CDFW recommends that they be required no more than three (3) days prior to vegetation clearing or ground disturbance activities, as instances of nesting could be missed if surveys are conducted sooner.

8. *Moving out of Harm's Way:* To avoid direct mortality, CDFW recommends that the City condition the PEIR to require that a CDFW-approved qualified biologist be retained to be onsite prior to and during all ground- and habitat-disturbing activities to move out of harm's way special status species or other wildlife of low or limited mobility that would otherwise be injured or killed from project-related activities. Movement of wildlife out of harm's way should be limited to only those individuals that would otherwise by injured or killed, and individuals should be moved only as far a necessary to ensure their safety (i.e., CDFW does not recommend relocation to other areas). Furthermore, it should be noted that the temporary relocation of onsite wildlife does not constitute effective mitigation for the purposes of offsetting project impacts associated with habitat loss.

9. *Translocation of Species*: CDFW generally does not support the use of relocation, salvage, and/or transplantation as mitigation for impacts to rare, threatened, or endangered species as studies have shown that these efforts are experimental in nature and largely unsuccessful.

California Endangered Species Act

CDFW is responsible for ensuring appropriate conservation of fish and wildlife resources including threatened, endangered, and/or candidate plant and animal species, pursuant to CESA. CDFW recommends that a CESA Incidental Take Permit (ITP) be obtained if the Project has the potential to result in "take" (California Fish and Game Code Section 86 defines "take" as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill") of State-listed CESA species, either through construction or over the life of the project; unless this Project is proposed to be

a covered activity under the MSHCP. CESA ITPs are issued to conserve, protect, enhance, and restore State-listed CESA species and their habitats.

CDFW encourages early consultation, as significant modification to the proposed Project and avoidance, minimization, and mitigation measures may be necessary to obtain a CESA ITP. The California Fish and Game Code requires that CDFW comply with CEQA for issuance of a CESA ITP. CDFW therefore recommends that the PEIR addresses all Project impacts to listed species and specifies a mitigation monitoring and reporting program that will meet the requirements of CESA.

Western Riverside County Multiple Species Habitat Conservation Plan

Within the Inland Deserts Region, CDFW issued Natural Community Conservation Plan Approval and Take Authorization for the Western Riverside County MSHCP per Section 2800, *et seq*., of the California Fish and Game Code on June 22, 2004. The MSHCP establishes a multiple species conservation program to minimize and mitigate habitat loss and provides for the incidental take of covered species in association with activities covered under the permit.

Compliance with approved habitat plans, such as the MSHCP, is discussed in CEQA. Specifically, Section 15125(d) of the CEQA Guidelines requires that the CEQA document discuss any inconsistencies between a proposed Project and applicable general plans and regional plans, including habitat conservation plans and natural community conservation plans. An assessment of the impacts to the MSHCP as a result of this Project is necessary to address CEQA requirements. To obtain additional information regarding the MSHCP please go to: http://rctlma.org/epd/WR-MSHCP.

The proposed Project occurs within the MSHCP area and is subject to the provisions and policies of the MSHCP. In order to be considered a covered activity, Permittees need to demonstrate that proposed actions are consistent with the MSHCP and its associated Implementing Agreement. The City of Corona is the Lead Agency and is signatory to the Implementing Agreement of the MSHCP.

Regardless of whether take of threatened and/or endangered species is obtained through the MSHCP or through a CESA ITP, the PEIR needs to address how the proposed Project will affect the policies and procedures of the MSHCP. Therefore, all surveys required by the MSHCP policies and procedures listed above to determine consistency with the MSHCP should be conducted and results included in the PEIR so that CDFW can adequately assess whether the Project will impact the MSHCP.

Lake and Streambed Alteration Program

Fish and Game Code section 1602 requires an entity to notify CDFW prior to commencing any activity that may do one or more of the following: Substantially divert or obstruct the natural flow of any river, stream or lake; Substantially change or use any material from the bed, channel or bank of any river, stream, or lake; or Deposit debris,

waste or other materials that could pass into any river, stream or lake. Please note that "any river, stream or lake" includes those that are episodic (i.e., those that are dry for periods of time) as well as those that are perennial (i.e., those that flow year-round). This includes ephemeral streams, desert washes, and watercourses with a subsurface flow. It may also apply to work undertaken within the flood plain of a body of water.

Upon receipt of a complete notification, CDFW determines if the proposed Project activities may substantially adversely affect existing fish and wildlife resources and whether a Lake and Streambed Alteration (LSA) Agreement is required. An LSA Agreement includes measures necessary to protect existing fish and wildlife resources. CDFW may suggest ways to modify your Project that would eliminate or reduce harmful impacts to fish and wildlife resources.

CDFW's issuance of an LSA Agreement is a "project" subject to CEQA (see Pub. Resources Code 21065). To facilitate issuance of an LSA Agreement, if necessary, the PEIR should fully identify the potential impacts to the lake, stream, or riparian resources, and provide adequate avoidance, mitigation, and monitoring and reporting commitments. Early consultation with CDFW is recommended, since modification of the proposed Project may be required to avoid or reduce impacts to fish and wildlife resources. To obtain a Lake or Streambed Alteration notification package, please go to https://www.wildlife.ca.gov/Conservation/LSA/Forms.

ENVIRONMENTAL DATA

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations. (Pub. Resources Code, § 21003, subd. (e).) Accordingly, please report any special status species and natural communities detected during Project surveys to the California Natural Diversity Database (CNDDB). Information can be submitted online or via completion of the CNDDB field survey form at the following link: https://wildlife.ca.gov/Data/CNDDB/Submitting-Data. The completed form can be mailed electronically to CNDDB at the following email address: CNDDB@wildlife.ca.gov. The types of information reported to CNDDB can be found at the following link: https://wildlife.ca.gov/Data/CNDDB/Plants-and-Animals.

FILING FEES

The Project, as proposed, would have an impact on fish and/or wildlife, and assessment of filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the fee is required in order for the underlying project approval to be operative, vested, and final. (Cal. Code Regs, tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089.).

CONCLUSION

CDFW appreciates the opportunity to comment on the NOP of a PEIR for the City of Corona Reclaimed Water Master Plan Project (SCH No. 2020050497) and recommends that the City address the CDFW's comments and concerns in the forthcoming PEIR. If you should have any questions pertaining to the comments provided in this letter, please contact to Kimberly Romich, Senior Environmental Scientist at (909) 980-3818 or Kimberly.Romich@wildlife.ca.gov.

Sincerely,

DocuSigned by:
Scott Wilson
8091B1A9242F49C...

Scott Wilson
Environmental Program Manager

ec: HCPB CEQA Coordinator
Habitat Conservation Planning Branch

Office of Planning and Research, State Clearinghouse, Sacramento
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Tricia Campbell (Western Riverside County Regional Conservation Authority)
Director of Reserve Management and Monitoring
tcampbell@wrcrca.org

REFERENCES

Sawyer, J. O., T. Keeler-Wolf, and J. M. Evens. 2009. A manual of California Vegetation, 2nd ed. California Native Plant Society Press, Sacramento, California. http://vegetation.cnps.org/

Appendix B. Air Quality Impact Analysis

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Harris & Associates

TECHNICAL MEMORANDUM

To: Mohammed Ibrahim, PE, Senior Engineer, City of Corona, Department of Water and Power
From: Sharon Toland, Project Manager, Harris & Associates
Subject: City of Corona 2018 Reclaimed Water Master Plan – Air Quality Impact Analysis
Date: July 15, 2020
CC: Kristin Blackson, Senior Project Manager, Harris & Associates

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Dear Mr. Ibrahim,

The following presents the results of Harris & Associates' analysis of the potential impacts to air quality from implementation of the City of Corona 2018 Reclaimed Water Master Plan (2018 RWMP or project). The projects included in the 2018 RWMP include sources of supply projects and distribution pipeline projects as listed in Table 1. In total, 29 projects are to be completed over the next 10 years before the buildout year (2030); 7 short-term projects are scheduled within the next 5 years, and 22 long-term projects do not have a specified implementation year.

Table 1. 2018 Reclaimed Water Master Plan Projects

Project Name	Location	Description	Construction Time Frame
WRCRWA Booster Pump Station	WRCRWA	The booster pumping stations would pump WRCRWA supply to the 833 Subzone.	2021/22
WRCRWA Transmission Pipeline	Between WRCRWA and River FCS-833 Subzone	The transmission pipeline would connect the WRCRWA booster pumping station to the 833 Subzone.	2020/21
WRCRWA Flow Control Improvements	Between Butterfield and WRF1 Tank	These control stations would direct WRCRWA supply to the Lincoln-Cota Ponds and the WRF1 Tank.	2020/21
Rimpau California Pipeline	Between Central Park and Chase Park	This transmission pipeline would provide the additional capacity needed to move WRCRWA supply to demands south of the water service area between City Park and Chase Park.	Long-term
Chase Tank	Chase Park	The storage facility at Chase Park would be an operational component of the Rimpau California Pipeline.	Long-term
Chase Booster Pump Station	Chase Park	The booster pumping facility at Chase Park is an operational component of the Rimpau California Pipeline.	Long-term
Buena Vista Tenth Pipeline	Railroad Street and Rimpau Avenue via Buena Vista Avenue and Tenth Street	This pipeline would reinforce the primary loop between WRF1 at the 1380 Zone following construction of the Rimpau California Pipeline.	Long-term
Ontario Slipline	Compton Avenue and Lincoln Avenue	This sliplined pipeline would form a secondary loop along the length of the 1175 Subzone.	Long-term

Table 1. 2018 Reclaimed Water Master Plan Projects

Project Name	Location	Description	Construction Time Frame
Sampson Pipeline	Central Park and McKinley Street	This pipeline would form a secondary loop in the 1008.5 Zone to improve performance and eliminate the need for additional local storage.	Long-term
River Pipeline	River Rd. from Corydon Avenue through Main Street	This pipeline would expand the 833 Subzone north of Temescal Creek and west of Interstate 15.	Long-term
Old Temescal Pipeline	Fullerton Avenue and Interstate 15 Freeway	This pipeline would convert 15.1 gpm of potable water demand for irrigation to reclaimed water demand.	2021/22
Lincoln Foothill Pipeline	Lincoln Avenue between Highgrove Street and Foothill Parkway	This pipeline would convert 12.5 gpm of potable water demand for irrigation to reclaimed water demand at one church and six existing LMD meters.	Long-term
Avenida Del Vista Pipeline	Via Del Rio and MFR demands north of Via Santiago	This pipeline would convert 19.8 gpm of potable water demand for irrigation to reclaimed water demand at three MFR complexes.	Long-term
Border Pipeline	Brentwood Drive and MFR demands north of Tenth Street	This pipeline would convert 36.4 gpm of potable water demand for irrigation to reclaimed water demand at numerous MFR and CII complexes.	Long-term
Promenade Pipeline	McKinley Avenue and Cresta Verde Park	This pipeline would convert 26.9 gpm of potable water demand for irrigation to reclaimed water demand at 2 MFR complexes and 15 existing landscaping irrigation meters.	Long-term
Research Pipeline	CII demands west of Auto Center Drive	This pipeline would convert 9 gpm of potable water demand for irrigation to reclaimed water demand.	Long-term
Smith Pipeline	Railroad Street and Pomona Road	This pipeline would convert 13.6 gpm of potable water demand for irrigation and car washing to reclaimed water demand.	Long-term
Via Pacifica Pipeline	MFR and LMD demand north of Ontario Avenue	This pipeline would convert 21.3 gpm of potable water demand for irrigation to reclaimed water demand at two LMD meters and one MFR complex.	Long-term
Tehachapi Pipeline	McKinley Avenue and Tehachapi Park	This pipeline would convert 6.2 gpm of potable water demand for irrigation to reclaimed water demand.	Long-term
Jenks Pipeline	North and south of Railroad Street	The pipeline would convert 5.8 gpm of potable water demand for irrigation to reclaimed water demand.	Long-term
Airport Circle Pipeline	South of Railroad Street	The pipeline would convert 4.1 gpm of potable water demand for irrigation to reclaimed water demand.	Long-term
Helicopter Pipeline	South of Railroad Street	This pipeline would convert 3.9 gpm of potable water demand for irrigation to reclaimed water demand.	Long-term
Glider Pipeline	South of Railroad Street	The pipeline would convert 1.3 gpm of potable water demand for irrigation to reclaimed water demand.	Long-term
Citation Pipeline	South of Railroad Street	This pipeline would convert 1.2 gpm of potable water demand for irrigation to reclaimed water demand.	Long-term
Klug Pipeline	North and south of Railroad Street	This pipeline would convert 3.9 gpm of potable water demand for irrigation to reclaimed water demand.	Long-term

Table 1. 2018 Reclaimed Water Master Plan Projects

Project Name	Location	Description	Construction Time Frame
Monica Pipeline	North of Railroad Street	The pipeline would convert 3.2 gpm of potable water demand for irrigation to reclaimed water demand.	Long-term
Chase Hudson Pipeline	LMD demands at Chase Drive and Hudson Avenue	This pipeline would convert 4.7 gpm at two LMD meters from potable water demand for irrigation to reclaimed water demand.	Long-term
Cessna Pipeline	North of Railroad Street	This pipeline would convert 3 gpm of potable water demand for irrigation to reclaimed water demand.	Long-term
Main Citrus Pipeline	Main Street at Citrus Avenue and four CII customers at Main Street and Magnolia Avenue	This pipeline would convert 21.4 gpm of potable water demand for irrigation to reclaimed water demand for CII customers.	Long-term

Notes: CII = commercial, industrial, and institutional; gpm = gallons per minute; LMD = landscape maintenance district; MFR = multi-family residential; WRCRWA = Western Riverside County Regional Wastewater Authority; WRF = water reclamation facility

Background

Air quality laws and regulations have historically divided air pollutants into two broad categories: criteria air pollutants and non-criteria pollutants, or toxic air contaminants (TACs). Criteria air pollutants are a group of common air pollutants regulated by the federal and state governments by means of ambient air standards based on criteria regarding health and environmental effects of pollution (USEPA 2018a). TACs are pollutants with potential to cause significant adverse health effects. In California, unlike the air quality standards for criteria pollutants to protect health and the environment, the California Air Resources Board identifies exposure thresholds for TACs that indicate levels below which no significant adverse health effects are anticipated from exposure to the identified substance. However, thresholds are not specified for TACs that have been found to have no safe exposure level or where insufficient data are available to identify and exposure threshold (CARB 2020a).

The criteria air pollutants pertinent to the analysis in this memorandum are carbon monoxide (CO), nitrogen oxides (NO_x), ozone (O_3), particulate matter, and sulfur dioxide (SO_2). The following describes the health effects of these criteria air pollutants.

Carbon Monoxide (CO)

CO is a colorless, odorless, poisonous gas produced by combustion processes, primarily mobile sources. When CO gets into the body, it combines with chemicals in the blood and prevents blood from providing oxygen to cells, tissues, and organs. Because the body requires oxygen for energy, high-level exposure to CO can cause serious health effects, including death (USEPA 2016).

Nitrogen Oxides (NO_x)

NO_x is a general term pertaining to compounds including nitric oxide (NO), nitrogen dioxide (NO_2), and other oxides of nitrogen. NO_x is produced from burning fuels, including gasoline, diesel, and coal. NO_x reacts with volatile organic compounds (VOCs) to form ground-level O_3 (smog). NO_x is linked to a number of adverse respiratory systems effects (USEPA 2019a).

Ozone (O_3)

Ground-level O_3 is not emitted directly into the air but is formed by chemical reactions of "precursor" pollutants (NO_x and VOCs) in the presence of sunlight. Major emissions sources include NO_x and VOC emissions from industrial facilities and electric utilities, motor vehicle exhaust, gasoline vapors, and chemical solvents. O_3 can trigger a variety of health problems, particularly for sensitive receptors, including children, older adults, and people of all ages who have lung diseases, such as asthma (USEPA 2018b).

Particulate Matter (PM_{10} and $PM_{2.5}$)

Particulate matter includes dust, metals, organic compounds, and other tiny particles of solid materials that are released into and move around in the air. Particulates are produced by many sources, including the burning of diesel fuels by trucks and buses, industrial processes, and fires. Particulate pollution can cause nose and throat irritation and heart and lung problems. Particulate matter is measured in microns, which are 1 millionth of a meter in length (or 1 thousandth of a millimeter). PM_{10} is small (i.e., respirable) particulate matter measuring no more than 10 microns in diameter, while $PM_{2.5}$ is fine particulate matter measuring no more than 2.5 microns in diameter (CARB 2020b).

Sulfur Dioxide (SO_2)

SO_2 is formed primarily by the combustion of sulfur-containing fossil fuels, especially at power plants and industrial facilities. SO_2 is linked to a number of adverse effects on the respiratory system (USEPA 2019b).

Toxic Air Contaminants

TACs are generated by a number of sources, including stationary sources such as dry cleaners, gas stations, combustion sources, and laboratories; mobile sources such as automobiles; and area sources such as landfills. The two primary emissions of concern regarding health effects for land development projects are CO and diesel particulate matter (DPM). The health effects of CO are described previously. DPM is a mixture of many exhaust particles and gases that is produced when an engine burns diesel fuel. Compounds found in diesel exhaust are carcinogenic. Some short-term (acute) effects of diesel exhaust exposure include eye, nose, throat, and lung irritation and headaches and dizziness. Long-term exposure is linked to increased risk of cardiovascular, cardiopulmonary, and respiratory disease and lung cancer (OSHA 2013).

Existing Ambient Air Quality

Existing ambient air quality, historical trends, and projections are best documented by measurements made by the South Coast Air Quality Management District (SCAQMD). The City of Corona (City) is in Source Receptor Area 22, Riverside Valley (Corona/Norco Area). The air quality monitoring station closest to the City is the Norco-Norconian Monitoring Station. The station only monitors PM_{10}. Additional data for O_3, NO_2, and $PM_{2.5}$ are provided by the Riverside Rubidoux Monitoring Station. Data for CO and SO_2 are not available for recent years at nearby stations. The most current 2 years of data monitored at these stations are included in Table 2.

Table 2. Ambient Air Quality Monitoring Summary

Pollutant/Standard	Number of Days Threshold Were Exceeded and Maximum Levels During Such Violations	
	2017	**2018**
O_3		
State 1-Hour ≥ 0.09 ppm (days exceed threshold)	47	22
State 8-hour ≥ 0.07 ppm (days exceed threshold)	82	57
Federal 8-Hour > 0.07 ppm (days exceed threshold)	81	53
Max. 1-Hour Conc. (ppm)	0.145	0.123
Max. 8-Hour Conc. (ppm)	0.118	0.101
NO_2		
State 1-Hour ≥ 0.18 ppm (days exceed threshold)	0	0
Federal 1-Hour ≥ 0.100 ppm (days exceed threshold)	0	0
Max. 1-Hour Conc. (ppb)	0.0630	0.0554
PM_{10}		
State 24-Hour > 50 µg/m^3 (days exceed threshold)	8	3
Federal 24-Hour > 150 µg/m^3 (days exceed threshold)	0	0
Max. 24-Hour Conc. (µg/m^3)	85.1	100.9

Table 2. Ambient Air Quality Monitoring Summary

Pollutant/Standard	Number of Days Threshold Were Exceeded and Maximum Levels During Such Violations	
	2017	2018
$PM_{2.5}$		
Federal 24-Hour > 35 µg/m^3 (days exceed threshold)	7	3
Max. 24-Hour Conc. (µg/m^3)[1]	50.3	66.3

Source: CARB 2020c.

Notes: µg/m^3 = microgram per liter; NO_2 = nitrogen dioxide; O_3 = ozone; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; ppb = parts per billion; ppm = parts per million

[1] Data includes exceptional events, such as wildfires

Regulatory Setting

The Clean Air Act (CAA) of 1970 requires the U.S. Environmental Protection Agency (USEPA) to establish National Ambient Air Quality Standards (NAAQS) while retaining the option for states to adopt more stringent standards or to include other specific pollutants. NAAQS were developed for six criteria pollutants: O_3, NO_2, CO, SO_2, particulate matter, and lead. The 1990 CAA Amendments require that each state have an Air Pollution Control Plan called the State Implementation Plan (SIP). The SIP includes strategies and control measures to attain the NAAQS by deadlines established by the CAA. The CAA Amendments dictate that states containing areas violating the NAAQS revise their SIPs to include extra control measures to reduce air pollution. The USEPA reviews the SIPs to determine whether the plans would conform to the 1990 CAA Amendments and achieve the air quality goals.

The USEPA has classified air basins (or portions thereof) as being in "attainment," "nonattainment," or "unclassified" for each criteria air pollutant based on whether or not the NAAQS have been achieved. If an area is designated unclassified, it is because inadequate air quality data were available as a basis for a nonattainment or attainment designation. Table 3 lists the attainment status of City in the South Coast Air Basin (SCAB) for the criteria pollutants. The USEPA classifies the SCAB as nonattainment for ozone (1-hour and 8-hour) and fine particulate matter ($PM_{2.5}$) with respect to federal air quality standards.

The State of California, under the California Clean Air Act, has established standards for criteria pollutants that are generally stricter than federal standards. As shown in Table 3, the SCAB is currently in nonattainment status for respirable particulate matter (PM_{10}), $PM_{2.5}$, and ozone (1-hour and 8-hour).

Table 3. South Coast Air Basin Attainment Status

Pollutant	Averaging Time	California Standards	Federal Standards
O_3	1-hour	Nonattainment	Nonattainment (extreme)
	8-hour		Nonattainment (extreme)
PM_{10}	Annual arithmetic mean	Nonattainment	No Federal Standard
	24-hour		Attainment (Maintenance)
$PM_{2.5}$	annual arithmetic mean	Nonattainment	Nonattainment (Serious)
	24-hour	No State Standard	
CO	8-hour	Attainment	Attainment (Maintenance)
	1-hour		
NO_2	Annual arithmetic mean	No State Standard	Attainment (Maintenance)
	1-hour	Attainment	Unclassified[1]/Attainment
Lead	Calendar quarter	No State Standard	Attainment

Table 3. South Coast Air Basin Attainment Status

Pollutant	Averaging Time	California Standards	Federal Standards
	Rolling 3-month average	No State Standard	Attainment
SO_2	Annual arithmetic mean	No State Standard	Attainment
	24-hour	Attainment	Unclassifiable/Attainment
	1-hour	Attainment	Designations Pending (expect Uncl./Attainment)
Sulfates	24-hour	Attainment	No Federal Standard
Hydrogen Sulfide	1-hour	Attainment	No Federal Standard

Source: SCAQMD 2017.

Notes: CO = carbon monoxide; NO_2 = nitrogen dioxide; O_3 = ozone; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; SO_2 = sulfur dioxide

[1] Unclassified; indicates data are not sufficient for determining attainment or nonattainment.

Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, older adults, people with acute illnesses, and people with chronic illnesses, especially those with cardiorespiratory diseases.

Residential areas are also considered sensitive to air pollution because residents tend to be home for extended periods of time, resulting in sustained exposure to any pollutants present. Other sensitive receptors include retirement facilities, hospitals, and schools. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. Industrial, commercial, and office areas are considered the least sensitive to air pollution. Exposure periods associated with these land use types are relatively short and intermittent because the majority of workers tend to stay indoors most of the time.

Significance Thresholds

The project is in the SCAB, which is composed of the Counties of Los Angeles, Orange, Riverside, and San Bernardino, covering an area of approximately 12,000 square miles along the southern coast of California. The SCAQMD consists of the four counties in the SCAB; therefore, the City is within the jurisdiction of the SCAQMD. The SCAQMD significance criteria are used in this analysis to determine the project's impact on air quality based on the SCAQMD CEQA Air Quality Guidelines.

Emissions from construction activities represent temporary impacts that are typically short in duration, depending on the size, phasing, and type of project. The SCAQMD identifies quantitative thresholds for criteria pollutants as listed in Table 4. These threshold criteria are used into determine the significance of air quality impacts.

Table 4. South Coast Air Quality Management District Air Quality Mass Daily Thresholds

Pollutant	Construction Threshold (lbs/day)	Operational Threshold (lbs/day)
CO	550	550
NO_x	100	55
PM_{10}	150	150
$PM_{2.5}$	55	55
SO_x	150	150
VOC	75	55

Source: SCAQMD 2019.

Notes: CO = carbon monoxide; NO_x = nitrogen oxides; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; SO_x = sulfur oxides; VOC = volatile organic compound

The SCAQMD also identifies localized significance thresholds (LSTs), as shown in Table 5, to determine if the impacts to air quality are significant based on localized exceedances of the federal and or state ambient air quality standards. LSTs represent the maximum emissions from a project that will not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard at the nearest sensitive receptor. LSTs are identified for NO2, CO, PM_{10}, and $PM_{2.5}$ generated at a project site. Localized construction and operational emissions thresholds are determined as a function of the water service area (acres) and receptor distance (meters) from boundary of site. The LSTs applicable to the projects proposed in the 2018 RWMP are listed in Table 5.

Table 5. Source Receptor Area Norco/Corona Localized Significance Thresholds

Water Service Area/ Distance to Receptor	Air Pollutant (Relevant Ambient Air Quality Standards)	Allowable Emissions (lbs/day)	
		Construction	Operation
1 acre/25 meters	NO_x	118	118
	CO	674	674
	PM_{10}	4	1
	$PM_{2.5}$	3	1
2 acres/25 meters	NO_x	170	170
	CO	1,007	1,007
	PM_{10}	6	2
	$PM_{2.5}$	5	2

Source: SCAQMD 2009.

Notes: CO = carbon monoxide; NO_x = nitrogen oxides; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter

Construction Impact Analysis

Project construction emissions were estimated using the CalEEMod Model, version 2016.3.2, based on construction information provided by the City. In order to estimate maximum daily criteria pollutants from implementation of the project, Harris & Associates modeled a construction scenario that is intended to represent the maximum construction that may occur simultaneously and in a given 12-month period. Detailed assumptions and modeling data sheets are provided in Attachment 1. Construction is anticipated to begin as early as 2020. It was assumed that an average of three projects would occur in any given year based on the number of projects included in the 2018 RWMP and the time frame until buildout (29 projects in 10 years). The Sampson Pipeline Project was selected from the 2018 RWMP project list to represent the worst-case maximum daily emissions that could occur from any project. The Sampson Pipeline Project is calculated to require the greatest total amount of soil import and export, and the most material movement in the shortest amount of time. Approximately 3,482 truck trips would be required over a nine month construction period, for an maximum average of 20 one-way truck trips per day. Therefore, assuming simultaneous construction of three projects with the construction intensity of the Sampson Pipeline Project represents a conservative worst-case scenario. For comparison, cut quantities are anticipated to vary between 37

cubic yards and 24,200 cubic yards for the remaining projects proposed in the 2018 RWMP compared to 27,852 cubic yards for the Sampson Pipeline Project. Modeling assumes watering of excavated material twice daily for consistency with the best available control measures required by SCAQMD Rule 403. Table 6 provides the estimated disturbance area and import and export required for the Sampson Pipeline Project. It is assumed that import and export trips would be phased over the entire construction period.

Table 6. Sampson Pipeline Project Construction Assumptions

Project Name	Construction Schedule (months)	Disturbance Area (acres)	Material to Import (Cubic Yards)	Material to Export (Cubic Yards)
Sampson Pipeline	9	3.45	27,852	22,281

Maximum daily emissions levels associated with construction of the worst-case scenario projects are shown in Table 7. Maximum emissions are conservative because less intense construction is anticipated to occur simultaneously, and segments that would be completed in later years are anticipated to benefit from more stringent emissions standards. As shown in Table 7, the project would not exceed SCAQMD construction thresholds for any pollutant. Therefore, the project would not result in a significant impact related to criteria pollutant emissions during construction. Because emissions of criteria pollutants under the project would be below applicable thresholds, which are established to assist maintaining or achieving regional attainment in the SCAB, construction would not result in a cumulatively considerable contribution to regional acute and long-term health impacts related to nonattainment of the ambient air quality standards.

Table 7. Estimated Construction Daily Maximum Air Pollutant Emissions (lbs/day)

Project	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Individual Project (Sampson Pipeline)	3	31	19	<1	5	3
Maximum from Simultaneous Construction[1]	**9**	**93**	**57**	**<1**	**15**	**9**
SCAQMD Threshold	75	100	550	150	150	55
Significant Impact?	No	No	No	No	No	No

Notes: CO = carbon monoxide; NO_X = oxides of nitrogen; PM_{10} = particulate matter less than 10 microns; $PM_{2.5}$ = particulate matter less than 2.5 microns; SO_X = oxides of sulfur; VOC = volatile organic compound

Emission quantities are rounded to the nearest whole number. Exact values are provided in Attachment 1.

[1] Assumes emissions equivalent to Sampson Pipeline would occur for three simultaneous projects

Because an LST analysis applies to exposure of receptors in the vicinity of construction, it applies to projects individually proposed in the 2018 RWMP. The analysis below represents the worst-case daily emissions for the project proposed in the 2018 RWMP that is anticipated to require the most intense daily construction (Sampson Pipeline Project). This project is used to screen for potential LST impacts from implementation of any 2018 RWMP project. Projects would be throughout the City in proximity to existing development; therefore, the most conservative thresholds for receptors at 25 meters are applied. Emissions are compared to the 1-acre and 2 acre thresholds because disturbance areas of individual projects in the 2018 RWMP range from 0 to 2.42. Construction equipment exhaust combined with fugitive particulate matter emissions have the potential to expose sensitive receptors to criteria air pollutant emissions because these emissions would occur in the water service area. Consistent with SCAQMD methods, off-site vehicle and truck trips that would be spread out over commute and haul routes are not included in the LST analysis (SCAQMD 2008). As shown in Table 8, project emissions would not exceed the LST thresholds. A project the size of Sampson Pipeline Project is projected to meet the 1-acre particulate matter thresholds; however, projects requiring this amount of material movement would have project areas larger than 2 acres. Projects proposed in the 2018 RWMP that would have a disturbance area of less than 2 acres would require less intense material movement; therefore, daily emissions would be reduced compared to

Sampson Pipeline Project and would not exceed the LST threshold. On-site construction associated with implementation of the 2018 RWMP would not result in a significant impact to sensitive receptors.

Table 8. Estimated Construction Daily Maximum Air Pollutant Emissions (lbs/day) Relative to Localized Significance Thresholds

Project	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Worst-Case Individual Project Emissions	2	26	18	<1	4	3
1-acre LST (allowable emissions)	—	118	674	—	4	3
2-acre LST (allowable emissions)	—	170	1,007	—	6	5
Significant Impact?	—	*No*	*No*	*No*	*No*	*No*

Notes: CO = carbon monoxide; LST = localized significance threshold; NO_X = nitrogen oxides; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; SO_X = sulfur oxide; VOC = volatile organic compound

Emission quantities are rounded to the nearest hundredth. Exact values are provided in Attachment 1.

In addition to the potential for localized impacts described previously, construction has the potential to result in emissions of DPM. DPM is a mixture of many exhaust particulates and gases that is produced when an engine burns diesel fuel. Compounds found in diesel exhaust are carcinogenic and may cause health impacts ranging from irritation, headache, and dizziness to increased risk of cardiovascular, cardiopulmonary, and respiratory disease and lung cancer, depending on the length of exposure. The project would result in a short-term addition of truck trips occurring over a few months per project. Projects would be spread out over the water service area; thus, haul routes would vary. Therefore, the length of individual receptor exposure would be limited, and as shown in Tables 7 and 8, maximum daily air pollutant emissions from on- and off-road vehicle emissions would not exceed applicable thresholds. Construction associated with implementation of the project would not result in a significant impact to sensitive receptors related to DPM.

Construction of the project could result in minor amounts of odor compounds associated with diesel heavy equipment exhaust. However, all diesel equipment would not be operating at once, and construction near individual receptors would be temporary and would vary by project. Additionally, SO_x is the only criteria air pollutant with a strong, pungent odor (ATSDR 2015) As shown in Table 7, maximum construction emissions of SO_x would be less than 1 pound per day, which is well below the SCAQMD long-term threshold of 150 pounds per day. Therefore, impacts associated with odors during construction would not result in nuisance odors that would result in a significant impact.

Operation Impact Analysis

Most of the projects associated with the 2018 RWMP would be passive, new, or upgraded pipelines and storage facilities, which would not result in new sources of operational air pollution. Following construction, operation of the pipelines and storage tanks would be passive (not requiring electricity or fuel) and would not result in an increase in criteria pollutant emissions. A nominal increase in vehicle emissions is anticipated associated with maintenance of the projects identified in the 2018 RWMP. The new pump stations would have daily maintenance checks, and tanks would have weekly maintenance checks; however, maintenance for new and improved facilities would be incorporated into the existing maintenance schedule. Therefore, the net increase in new vehicle trips would be minimal and the vehicle emissions associated with project implementation would not be significant.

The two new pumps stations that would be installed as a result of project implementation would be electric rather than fuel consuming. None of the projects would require space heating, and no increase in natural gas demand would occur. Landscape equipment would occasionally be used for maintenance. However, once new drought tolerant landscaping is established, only periodic brush clearing, tree trimming, and weed abatement would be required. Nigh-time safety lighting installed at some project sites would require minimal additional electric energy consumption. Due to the limited amount of equipment and time required for maintenance at each facility, equipment use would not substantially increase compared to existing conditions.

As such, the net increase in air pollution emissions from the operation of projects identified in the 2018 RWMP is anticipated to be minimal and well below significance thresholds for all pollutants. Therefore, project operation would not result in a significant impact on air quality related to criteria pollutant emissions. As discussed previously for construction emissions, because emissions of criteria pollutants under the project would not exceed the applicable thresholds, which are established to assist maintaining or achieving regional attainment in the SCAB, operation would also not result in a cumulatively considerable contribution to regional acute and long-term health impacts related to nonattainment of the ambient air quality standards.

Regarding sensitive receptors, the California Air Resources Board recommends that a detailed health risk assessment be conducted for proposed sensitive receptors within 1,000 feet of a warehouse distribution center, 300 feet of a large gas station, 50 feet of typical gas dispensing facilities, or 300 feet of a dry cleaning facility that uses perchloroethylene, among other siting recommendations (CARB 2005). Additionally, the California Air Resources Board recommends that a health risk assessment be prepared for sensitive receptors proposed within 500 feet of a highway. The 2018 RWMP projects do not propose any facilities that would require a health risk assessment for sensitive receptors. The project would include new sources of TACs from construction and maintenance vehicles, but as discussed previously, criteria air pollutant emissions that occur from both construction and operation of the projects identified in the 2018 RWMP would not exceed significance thresholds. Additionally, because the project would result in a minor increase in vehicle trips associated with new facility management, implementation of the projects identified in the 2018 RWMP would not contribute to any CO hot spot. Therefore, impacts to sensitive receptors would be less than significant.

Typical sources of odor complaints include facilities such as sewage treatment plants, landfills, recycling facilities, petroleum refineries, and livestock operations (CARB 2005). The 2018 RWMP includes distribution pipelines, storage facilities, and pump stations for treated reclaimed water. The project would not construct facility that would create new objectionable odors because facilities would primarily be passive infrastructure for storage and movement of reclaimed water.

Summary

Implementation of the projects identified in the 2018 RWMP would not result in a significant air quality impact. No mitigation measures are necessary.

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Attachment 1. CalEEMod Results

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Sampson Pipeline

South Coast AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	3.45	Acre	3.45	150,282.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - 8.7 months *21 days

Off-road Equipment -

Grading -

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	8.00	183.00
tblConstructionPhase	PhaseEndDate	2/17/2021	10/20/2021
tblGrading	MaterialExported	0.00	27,852.00
tblGrading	MaterialImported	0.00	22,281.00
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	OffRoadEquipmentType		Paving Equipment

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	2.6574	31.0970	19.4408	0.0488	7.1170	1.2474	8.3644	3.5167	1.1482	4.6648	0.0000	4,899.3595	4,899.3595	1.1380	0.0000	4,927.8086
Maximum	**2.6574**	**31.0970**	**19.4408**	**0.0488**	**7.1170**	**1.2474**	**8.3644**	**3.5167**	**1.1482**	**4.6648**	**0.0000**	**4,899.3595**	**4,899.3595**	**1.1380**	**0.0000**	**4,927.8086**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	2.6574	31.0970	19.4408	0.0488	3.4962	1.2474	4.7436	1.6620	1.1482	2.8101	0.0000	4,899.3595	4,899.3595	1.1380	0.0000	4,927.8085
Maximum	**2.6574**	**31.0970**	**19.4408**	**0.0488**	**3.4962**	**1.2474**	**4.7436**	**1.6620**	**1.1482**	**2.8101**	**0.0000**	**4,899.3595**	**4,899.3595**	**1.1380**	**0.0000**	**4,927.8085**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**50.88**	**0.00**	**43.29**	**52.74**	**0.00**	**39.76**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0647	0.0000	3.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		7.6000e-004	7.6000e-004	0.0000		8.0000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0647**	**0.0000**	**3.5000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**7.6000e-004**	**7.6000e-004**	**0.0000**	**0.0000**	**8.0000e-004**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0647	0.0000	3.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		7.6000e-004	7.6000e-004	0.0000		8.0000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0647**	**0.0000**	**3.5000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**7.6000e-004**	**7.6000e-004**	**0.0000**	**0.0000**	**8.0000e-004**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	2/6/2021	10/20/2021	5	183	Includes piping, trenching and backfilling, asphalt restoration, striping

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 91.5

Acres of Paving: 3.45

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Paving Equipment	1	6.00	132	0.36
Grading	Excavators	1	8.00	158	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	7	18.00	0.00	3,482.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5833	0.0000	6.5833	3.3722	0.0000	3.3722			0.0000			0.0000
Off-Road	2.4324	26.1721	17.7376	0.0327		1.2308	1.2308		1.1323	1.1323		3,163.7436	3,163.7436	1.0232		3,189.3240
Total	**2.4324**	**26.1721**	**17.7376**	**0.0327**	**6.5833**	**1.2308**	**7.8141**	**3.3722**	**1.1323**	**4.5045**		**3,163.7436**	**3,163.7436**	**1.0232**		**3,189.3240**

3.2 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1420	4.8709	1.0939	0.0143	0.3325	0.0152	0.3476	0.0911	0.0145	0.1056		1,549.1957	1,549.1957	0.1098		1,551.9394
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0830	0.0539	0.6094	1.8700e-003	0.2012	1.4800e-003	0.2027	0.0534	1.3600e-003	0.0547		186.4202	186.4202	5.0000e-003		186.5451
Total	**0.2250**	**4.9249**	**1.7032**	**0.0162**	**0.5337**	**0.0166**	**0.5503**	**0.1445**	**0.0159**	**0.1603**		**1,735.6159**	**1,735.6159**	**0.1148**		**1,738.4845**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.9625	0.0000	2.9625	1.5175	0.0000	1.5175			0.0000			0.0000
Off-Road	2.4324	26.1721	17.7376	0.0327		1.2308	1.2308		1.1323	1.1323	0.0000	3,163.7435	3,163.7435	1.0232		3,189.3240
Total	**2.4324**	**26.1721**	**17.7376**	**0.0327**	**2.9625**	**1.2308**	**4.1933**	**1.5175**	**1.1323**	**2.6498**	**0.0000**	**3,163.7435**	**3,163.7435**	**1.0232**		**3,189.3240**

3.2 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1420	4.8709	1.0939	0.0143	0.3325	0.0152	0.3476	0.0911	0.0145	0.1056		1,549.1957	1,549.1957	0.1098		1,551.9394
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0830	0.0539	0.6094	1.8700e-003	0.2012	1.4800e-003	0.2027	0.0534	1.3600e-003	0.0547		186.4202	186.4202	5.0000e-003		186.5451
Total	**0.2250**	**4.9249**	**1.7032**	**0.0162**	**0.5337**	**0.0166**	**0.5503**	**0.1445**	**0.0159**	**0.1603**		**1,735.6159**	**1,735.6159**	**0.1148**		**1,738.4845**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Parking Lot	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Parking Lot	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0647	0.0000	3.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		7.6000e-004	7.6000e-004	0.0000		8.0000e-004
Unmitigated	0.0647	0.0000	3.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		7.6000e-004	7.6000e-004	0.0000		8.0000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0115					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0532					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.0000e-005	0.0000	3.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		7.6000e-004	7.6000e-004	0.0000		8.0000e-004
Total	**0.0647**	**0.0000**	**3.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**7.6000e-004**	**7.6000e-004**	**0.0000**		**8.0000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0115					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0532					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.0000e-005	0.0000	3.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		7.6000e-004	7.6000e-004	0.0000		8.0000e-004
Total	**0.0647**	**0.0000**	**3.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**7.6000e-004**	**7.6000e-004**	**0.0000**		**8.0000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix C. Biological Resources Technical Report

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Biological Resources Technical Report

City of Corona 2018 Reclaimed Water Master Plan

September 2020

Prepared for:

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Table of Contents

Acronyms and Abbreviations ..... **v**

Executive Summary **ES-1**

Section 1 Introduction **1**

1.1 Project Description 1

1.1.1 Project Location 1

1.1.2 2018 Reclaimed Water Master Plan Projects 2

1.1.3 Construction Methods 17

1.2 Purpose 19

1.3 Environmental Setting 19

1.3.1 Climate 19

1.3.2 Surrounding Land Uses 20

1.3.3 Topography and Soils 20

1.3.4 Hydrology 21

Section 2 Methods **27**

2.1 Background Information 27

2.2 Biological Survey 27

2.3 Vegetation Mapping 28

Section 3 Results **29**

3.1 Vegetation Communities and Land Use Types 29

3.1.1 Chaparral 29

3.1.2 Coastal Sage Scrub (Diegan and Riversidian) 29

3.1.3 Freshwater Marsh (Coastal and Valley) 30

3.1.4 Grassland (Non-Native) 30

3.1.5 Oak Woodland 41

3.1.6 Open Water 41

3.1.7 Riversidian Alluvial Fan Sage Scrub 41

3.1.8 Southern Riparian Forest 42

3.1.9 Southern Riparian Scrub 42

3.1.10 Agricultural and Developed/Disturbed Land Uses 43

3.2 Jurisdictional Wetlands and Waters 45

3.3 Plant Species 45

3.4 Animal Species 45

3.5 Sensitive Plant and Animal Species 46

3.5.1 Sensitive Plant Species 46

3.5.2 Sensitive Animal Species 48

3.5.3 Critical Habitat 60
3.5.4 Nesting Birds 60
3.6 Wildlife Corridors and Linkages 60

Section 4 Regional Context and Applicable Regulations 65

4.1 Federal Regulations 65
4.1.1 Federal Clean Water Act (U.S. Code, Title 33, Sections 1251 through 1376) 65
4.1.2 Federal Endangered Species Act (U.S. Code, Title 16, Sections 1531 through 1543) 65
4.1.3 Migratory Bird Treaty Act (U.S. Code, Title 16, Sections 703 through 711) 66
4.1.4 Wetlands and Other Waters of the United States 66
4.2 State of California Regulations 67
4.2.1 California Endangered Species Act (California Fish and Game Code, Sections 2050 et seq.) 67
4.2.2 California Environmental Quality Act Guidelines, Section 15380 67
4.2.3 California Fish and Game Code, Section 1602 68
4.2.4 California Fish and Game Code, Sections 2080 and 2081 68
4.2.5 California Fish and Game Code, Sections 3503, 3503.5, 3513, and 3800 68
4.2.6 California Fish and Game Code, Sections 3511, 4700, 5050, and 5515 69
4.2.7 California Wetland Definition 69
4.2.8 Native Plant Protection Act (California Fish and Game Code, Sections 1900 through 1913) 69
4.2.9 Natural Community Conservation Planning Act 70
4.2.10 Porter-Cologne Water Quality Control Act 70
4.3 Local Regulations 71
4.3.1 City of Corona 2020–2040 General Plan 71
4.3.2 Western Riverside County Multiple Species Habitat Conservation Plan 75

Section 5 Thresholds of Significance 77

Section 6 Impacts 79

6.1 Direct Impacts 79
6.1.1 Riparian Habitat or Other Sensitive Vegetation Community 79
6.1.2 Sensitive Plant Species 80
6.1.3 Sensitive Animal Species 80
6.1.4 Jurisdictional Resources 81
6.1.5 Wildlife Corridors and Linkages 82
6.1.6 Local Policies and Ordinances 82
6.1.7 Regional Conservation Planning 83

6.2 Indirect Impacts 83
6.2.1 Water Quality 84
6.2.2 Fugitive Dust 84
6.2.3 Invasive Plant Species 84
6.2.4 Noise 85
6.2.5 Lighting 85
6.3 Mitigation Measures 85
6.3.1 Sensitive Vegetation Communities 86
6.3.2 Sensitive Plant Species 88
6.3.3 Sensitive Animal Species 90
6.3.4 Jurisdictional Aquatic Resources 91
6.4 Level of Significance After Mitigation 92
Section 7 Cumulative Impacts and Mitigation 95
7.1 Riparian Habitat or Other Sensitive Natural Community 95
7.2 Sensitive Plant Species 95
7.3 Sensitive Animal Species 96
7.4 Jurisdictional Aquatic Resources 96
7.5 Wildlife Corridors and Linkages 96
7.6 Local Policies and Ordinances 97
7.7 Regional Conservation Planning 97
Section 8 References 99

Figures

Figure 1. Regional Location 5
Figure 2. Water Service Area 7
Figure 3a. Source of Supply Projects 9
Figure 3b. Large Distribution Pipelines 11
Figure 3c. Medium Distribution Pipelines 13
Figure 3d. Small Distribution Pipelines 15
Figure 4. USGS Topographic Map 23
Figure 5. Hydrology 25
Figure 6. Vegetation Communities – Overview 31
Figure 7a. Vegetation Communities, Source of Supply Projects 33
Figure 7b. Vegetation Communities, Large Distribution Pipelines 35
Figure 7c. Vegetation Communities, Medium Distribution Pipelines 37
Figure 7d. Vegetation Communities, Small Distribution Pipelines 39
Figure 8. Critical Habitat 63

Tables

Table 1. Summary of 2018 Reclaimed Water Master Plan Projects 2
Table 2. 2018 Reclaimed Water Master Plan Project Construction Duration 18
Table 3. 2018 Reclaimed Water Master Plan Project Vegetation Communities and Land Use Types 44
Table 4. Sensitive Plant Species Documented in the Water Service Area 47
Table 5. Sensitive Animal Species Documented in the Water Service Area 48
Table 6. Biological Resources Mitigation Measure Equivalency Table for the 2018 Reclaimed Water Master Plan Project 86

Appendices

Appendix A. Animal Species Observed

°F	degrees Fahrenheit
2016 Proposition 1 IS/MND	2016 Proposition 1 – Reclaimed Water Distribution System Initial Study/Mitigated Negative Declaration
BGEPA	Bald and Golden Eagle Protection Act
CCE	California candidate endangered species
CDFW	California Department of Fish and Wildlife
CE	California endangered
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFG	California Fish and Game
CFP	California fully protected
CII	commercial, industrial, and institutional
City	City of Corona
CNPS	California Native Plant Society
County	County of Riverside
CRPR	California Rare Plant Rank
CT	California threatened
CWA	Clean Water Act
EIR	Environmental Impact Report
FC	federal candidate for listing
FE	federally endangered
FESA	federal Endangered Species Act
FT	federally threatened
GIS	geographic information system
gpm	gallons per minute
Harris	Harris & Associates
HCP	Habitat Conservation Plan
IPaC	Information for Planning and Consultation
LMD	landscape maintenance district
MBTA	Migratory Bird Treaty Act
MFR	multi-family residential
MSHCP	Multiple Species Habitat Conservation Plan
NCCP	Natural Community Conservation Planning
NPDES	National Pollutant Discharge Elimination System
NWP	Nationwide Permit
PEIR	Program Environmental Impact Report
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
project	City of Corona 2018 Reclaimed Water Master Plan
RWMP	Reclaimed Water Master Plan
RWQCB	Regional Water Quality Control Board
SCADA	Supervisory Control and Data Acquisition
SSC	species of special concern
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service

WL	California Department of Fish and Wildlife watch list
WRCRWA	Western Riverside County Regional Wastewater Authority
WRF	wastewater reclamation facility

Executive Summary

At the request of the City of Corona (City), Harris & Associates (Harris) has prepared this Biological Resources Technical Report for the City of Corona 2018 Reclaimed Water Master Plan Program Environmental Impact Report (2018 RWMP PEIR).

The 2018 Reclaimed Water Master Plan (2018 RWMP or project) is an update to the City's adopted Reclaimed Water Master Plan (2001), which provides guidance to create infrastructure to efficiently use treated effluent from its existing and future wastewater reclamation facilities (WRFs) supplemented by non-potable groundwater from the Bedford Basin to reduce dependence on imported water and potable groundwater. The project identifies the extent and types of reclaimed water development needed to achieve the City's physical, economic, and environmental goals.

This report provides an update of the biological resources baseline found in the water service area and presents a project-level analysis of impacts to sensitive biological resources from the 29 projects in the water service area that are to be implemented as part of the 2018 RWMP.

The analysis was prepared in accordance with the California Environmental Quality Act (CEQA) of 1970, the CEQA Guidelines (as amended). This report is a technical study in support of the 2018 RWMP PEIR.

A site visit and general habitat assessment occurred on April 14, 2020. Vegetation mapping is based on City geographic information system data updated with site data from April 2020.

Nine vegetation communities and two land use types were mapped within the water service area. The vegetation communities included four wetland vegetation communities and five upland vegetation communities. The wetland vegetation communities included freshwater marsh, open water, riparian scrub, and riparian forest. The five upland vegetation communities included chaparral, coastal sage scrub, non-native grassland, oak woodland, and Riversidian alluvial fan sage scrub. The two land use types include agriculture and disturbed/developed.

Five sensitive plant species and 45 sensitive animal species have been documented in the water service area. Critical habitat for four federally listed species occurs in the water service area.

Project implementation would result in potentially significant direct and indirect impacts to sensitive vegetation communities, sensitive plant and animal species, nesting birds, and jurisdictional aquatic resources.

Implementation of Mitigation Measures BIO-1, BIO-2, and BIO-3 would reduce potentially significant impacts to the non-native grassland sensitive vegetation community on the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites. Mitigation Measure BIO-1 would require habitat assessments, including vegetation mapping, to be conducted

before construction of the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline projects. Mitigation Measures BIO-2 and BIO-3 would implement mitigation and replacement ratios for permanent and temporary impacts to non-native grassland.

Implementation of Mitigation Measures BIO-2 through BIO-8 would reduce potentially significant direct and indirect impacts to sensitive plant species on the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites. These mitigation measures would require preconstruction sensitive plant species surveys, mitigation ratios for permanent and temporary impacts to non-native grassland that could support sensitive plant species, and prevention of the spread of invasive plant species during construction. General construction mitigation measures, including flagging and fencing, a contractor training program, and a biological monitor, shall be implemented for the projects to minimize potential impacts to sensitive plant species.

Implementation of Mitigation Measures BIO-9 through BIO-11 would reduce potentially significant impacts to sensitive animal species at the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites. General construction mitigation measures (Mitigation Measures BIO-6 through BIO-8), including flagging and fencing, a contractor training program, and a biological monitor, shall also be implemented for the projects to minimize potential impacts to sensitive animal species. Potentially significant impacts to non-native grassland that could support burrowing owl would be mitigated by requiring burrowing owl clearance surveys at the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites (Mitigation Measures BIO-9). Implementation of Mitigation Measure BIO-10 would reduce potentially significant impacts to nesting birds by conducting nesting bird surveys before construction of the projects if construction activities occur during the general bird nesting season (January 15 through September 15). Potentially significant impacts to sensitive animal species from nighttime lighting during construction would be minimized with Mitigation Measure BIO-11 on the project sites.

Implementation of Mitigation Measures BIO-12 and BIO-13 would reduce potentially significant impacts to jurisdictional aquatic resources, if identified on the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites during preconstruction habitat assessments (Mitigation Measure BIO-1). If jurisdictional aquatic resources are identified, aquatic resources delineations (Mitigation Measure BIO-12) and permitting (Mitigation Measure BIO-13) would be conducted before construction of the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline projects.

Section 1 Introduction

This Biological Resources Technical Report for the City of Corona 2018 Reclaimed Water Master Plan (2018 RWMP or project) addresses the potential biological resources impacts associated with the construction, operation, and maintenance of the approved 2018 RWMP for the City of Corona (City).

1.1 Project Description

The 2018 RWMP is an update to the City's 2001 adopted RWMP, which provides guidance to create infrastructure to efficiently use treated effluent from its existing and future wastewater reclamation facilities (WRFs) supplemented by non-potable groundwater from the Bedford Basin to reduce dependence on imported water and potable groundwater. The project identifies the extent and types of reclaimed water development needed to achieve the City's physical, economic, and environmental goals.

1.1.1 Project Location

The City is in the northwestern portion of the County of Riverside (County), near the convergence of the Counties of Los Angeles, Orange, and Riverside, 45 miles southeast of the City of Los Angeles, as shown on Figure 1, Regional Location. The City is in the Temescal Valley, which is framed by mountains and the Prado Flood Control Basin. The City is bordered by the City of Norco to the north, the City of Riverside to the east, unincorporated Riverside County to the west and south, the Cleveland National Forest to the south/southwest, and the Prado Flood Control Basin to the northeast.

The City is defined in the County by its transportation infrastructure. Two major freeways and one railroad transect the City. Riverside Freeway (State Route 91) runs east–west, connecting the economic center of the County of Orange to the Inland Empire, while Interstate 15 runs north–south. In addition, the Burlington Northern Santa Fe Railway transects the center of the City, running parallel to State Route 91.

The water service area boundary differs from the City's jurisdictional boundary. The water service area includes the unincorporated communities of El Cerrito and Coronita and parts of Temescal Canyon, as shown on Figure 2, Water Service Area. The City's water service area encompasses approximately 39 square miles and delineates the extent of the City's potable water and reclaimed water and wastewater services. The water service area includes the unincorporated communities of El Cerrito and Coronita and parts of Temescal Canyon, as shown on Figure 2.

The water service area is a jurisdictional boundary bordered by the neighboring water service areas for the Cities of Norco and Eastvale to the north, the City of Riverside to the northeast, the Home Gardens County Water District to the east, and the Temescal Valley Water District to the south. The southeastern portion of the water service area is generally bounded by unincorporated County

lands. The southwestern portion of the water service area is bounded by the Cleveland National Forest and other County lands (Figure 2).

1.1.2 2018 Reclaimed Water Master Plan Projects

This section describes the proposed infrastructure and improvements to the reclaimed water system identified in the 2018 RWMP. Future projects would be categorized as sources of supply, large distribution pipelines, medium distribution pipelines, small distribution pipelines, conversion of adjacent customers, data management, and additional studies. Table 1 provides a summary of the projects identified in the 2018 RWMP. Figures 3a through 3d show the locations of the projects identified in the 2018 RWMP in the water service area.

Table 1. Summary of 2018 Reclaimed Water Master Plan Projects

Number	Project	Location	Description
Source of Supply Projects			
1	WRCRWA Booster Pump Station[1]	WRCRWA	The booster pumping stations would pump WRCRWA supply to the 833 Subzone.
2	WRCRWA Transmission Pipeline[1]	Between WRCRWA and River FCS-833 Subzone	The transmission pipeline would connect the WRCRWA booster pumping station to the 833 Subzone.
3	WRCRWA Flow Control Improvements	Between Butterfield and WRF1 Tank	These control stations would direct WRCRWA supply to the Lincoln-Cota Ponds and the WRF1 Tank.
4	Rimpau California Pipeline	Between Central Park and Chase Park	This transmission pipeline would provide the additional capacity needed to move WRCRWA supply to demands south of the water service area between City Park and Chase Park.
5	Chase Booster Pump Station	Chase Park	The booster pump station at Chase Park would an operational component of the Rimpau California Pipeline.
6	Chase Tank	Chase Park	The storage facility at Chase Park would be an operational component of the Rimpau California Pipeline.
Large Distribution Pipelines			
7	Buena Vista Tenth Pipeline	Railroad Street and Rimpau Avenue via Buena Vista Avenue and Tenth Street	This pipeline would reinforce the primary loop between WRF1 at the 1380 Zone following construction of the Rimpau California Pipeline.
8	Ontario Slipline	Compton Avenue and Lincoln Avenue	This slipline would form a secondary loop along the length of the 1175 Subzone.
9	River Pipeline	River Road from Corydon Avenue through Main Street	This pipeline would expand the 833 Subzone north of Temescal Creek and west of Interstate 15.
10	Sampson Pipeline	Central Park and McKinley Street	This pipeline would form a secondary loop in the 1008.5 Zone to improve performance and eliminate the need for additional local storage.

Table 1. Summary of 2018 Reclaimed Water Master Plan Projects

Number	Project	Location	Description
Medium Distribution Pipelines			
11	Old Temescal Pipeline[1]	Fullerton Avenue and Interstate 15	This pipeline would convert 15.1 gpm of potable water demand for irrigation to reclaimed water demand.
12	Lincoln Foothill Pipeline	Lincoln Avenue between Highgrove Street and Foothill Parkway	This pipeline would convert 12.5 gpm of potable water demand for irrigation to reclaimed water demand at one church and six existing LMD meters.
13	Avenida Del Vista Pipeline	Via Del Rio and MFR demands north of Via Santiago	This pipeline would convert 19.8 gpm of potable water demand for irrigation to reclaimed water demand at three MFR complexes.
14	Border Pipeline	Brentwood Drive and MFR demands north of Tenth Street	This pipeline would convert 36.4 gpm of potable water demand for irrigation to reclaimed water demand at numerous MFR and CII complexes.
15	Promenade Pipeline	McKinley Avenue and Cresta Verde Park	This pipeline would convert 26.9 gpm of potable water demand for irrigation to reclaimed water demand at 2 MFR complexes and 15 existing landscaping irrigation meters.
16	Research Pipeline	CII demands west of Auto Center Drive	This pipeline would convert 9 gpm of potable water demand for irrigation to reclaimed water demand.
17	Smith Pipeline	Railroad Street and Pomona Road	This pipeline would convert 13.6 gpm of potable water demand for irrigation and car washing to reclaimed water demand.
18	Via Pacifica Pipeline	MFR and LMD demand north of Ontario Avenue	This pipeline would convert 21.3 gpm of potable water demand for irrigation to reclaimed water demand at two LMD meters and one MFR complex.
19	Tehachapi Pipeline	McKinley Avenue and Tehachapi Park	This pipeline would convert 6.2 gpm of potable water demand for irrigation to reclaimed water demand.
Small Distribution Pipelines			
20	Jenks Pipeline	North and south of Railroad Street	The pipeline would convert 5.8 gpm of potable water demand for irrigation to reclaimed water demand.
21	Airport Circle Pipeline	South of Railroad Street	The pipeline would convert 4.1 gpm of potable water demand for irrigation to reclaimed water demand.
22	Helicopter Pipeline	South of Railroad Street	This pipeline would convert 3.9 gpm of potable water demand for irrigation to reclaimed water demand.
23	Glider Pipeline	South of Railroad Street	The pipeline would convert 1.3 gpm of potable water demand for irrigation to reclaimed water demand.
24	Citation Pipeline	South of Railroad Street	This pipeline would convert 1.2 gpm of potable water demand for irrigation to reclaimed water demand.
25	Klug Pipeline	North and south of Railroad Street	This pipeline would convert 3.9 gpm of potable water demand for irrigation to reclaimed water demand.
26	Monica Pipeline	North of Railroad Street	The pipeline would convert 3.2 gpm of potable water demand for irrigation to reclaimed water demand.
27	Chase Hudson Pipeline	LMD demands at Chase Drive and Hudson Avenue	This pipeline would convert 4.7 gpm at two LMD meters from potable water demand for irrigation to reclaimed water demand.

Table 1. Summary of 2018 Reclaimed Water Master Plan Projects

Number	Project	Location	Description
28	Cessna Pipeline	North of Railroad Street	This pipeline would convert 3 gpm of potable water demand for irrigation to reclaimed water demand.
29	Main Citrus Pipeline	Main Street at Citrus Avenue and four CII customers at Main Street and Magnolia Avenue	This pipeline would convert 21.4 gpm of potable water demand for irrigation to reclaimed water demand for CII customers.

Sources: City of Corona 2016, 2018.

Notes: CII = commercial, industrial, and institutional; gpm = gallons per minute; LMD = landscape maintenance district; MFR = multi-family residential; WRCRWA = Western Riverside County Regional Wastewater Authority; WRF = water reclamation facility

[1] Project is in process and is covered by the 2016 Proposition 1 – Reclaimed Water Distribution System Initial Study/Mitigated Negative Declaration

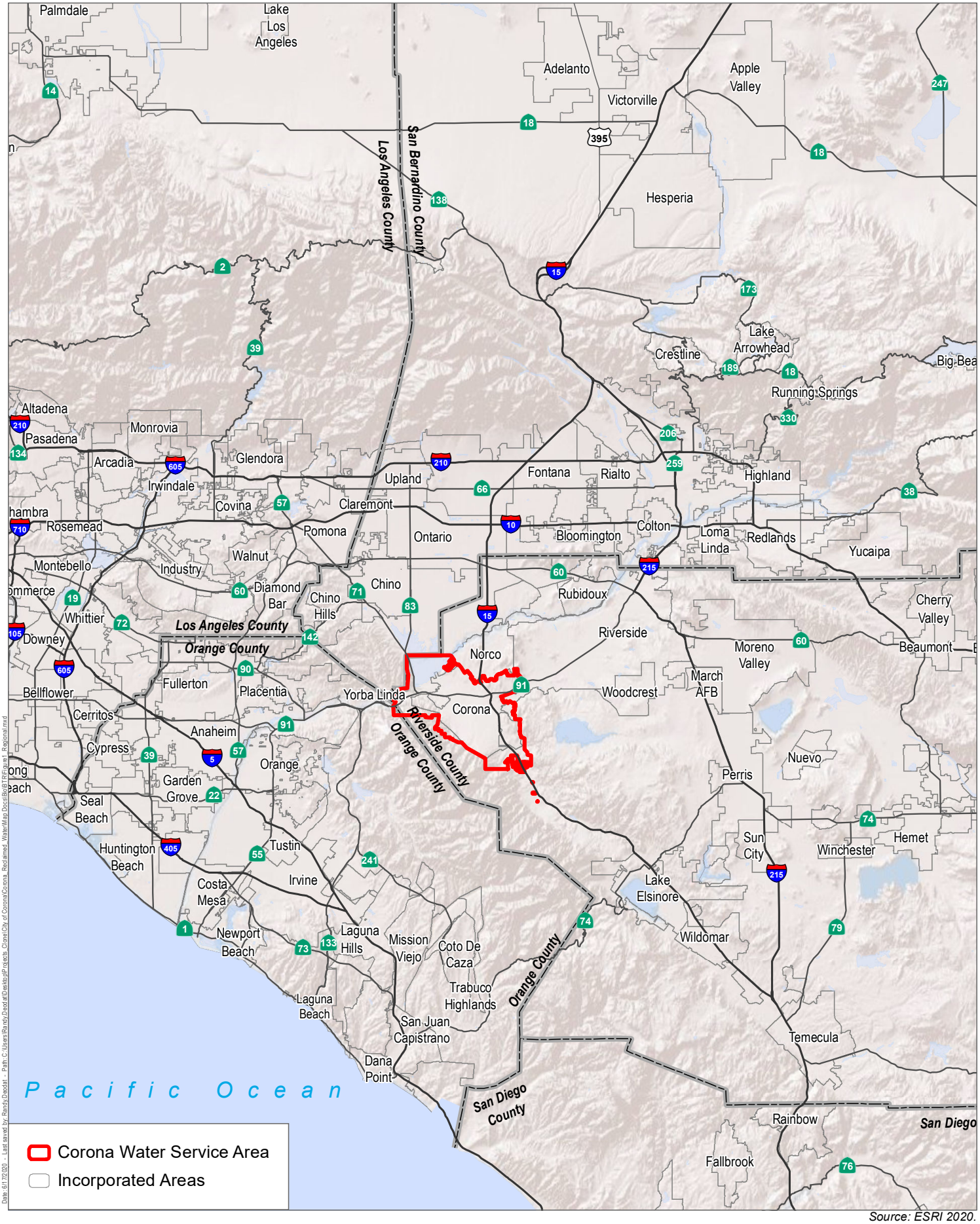
1.1.2.1 Sources of Supply

The 2018 RWMP includes the following six sources of supply projects that involve future supply from the Western Riverside County Regional Wastewater Authority (WRCRWA). The projects are necessary to accommodate the shift in supply from the existing WRF3 to WRCRWA and would assure adequate supply and transmission capacity related to reclaimed water from WRCRWA (see Figure 3a). The projects focus on transmission and system performance.

1.1.2.2 Distribution Pipelines

Approximately 27 miles of distribution pipelines is proposed to supply irrigation demands at schools, parks, City landscaping, and the industrial, commercial, and multi-family residential (MFR) sectors. The project proposes four large distribution pipelines to open previously unserved neighborhoods, commercial zones, and industrial zones to reclaimed water service as described below (Figure 3b). The project proposes nine new medium distribution pipelines to target large demand opportunities with a single feed pipe (Figure 3c). The project proposes 10 small distribution pipelines to target demand opportunities near existing pipelines as described below (Figure 3d).

For additional detail on individual projects, refer to Chapter 2, Project Description, of the 2018 RWMP PEIR.



Source: ESRI 2020.

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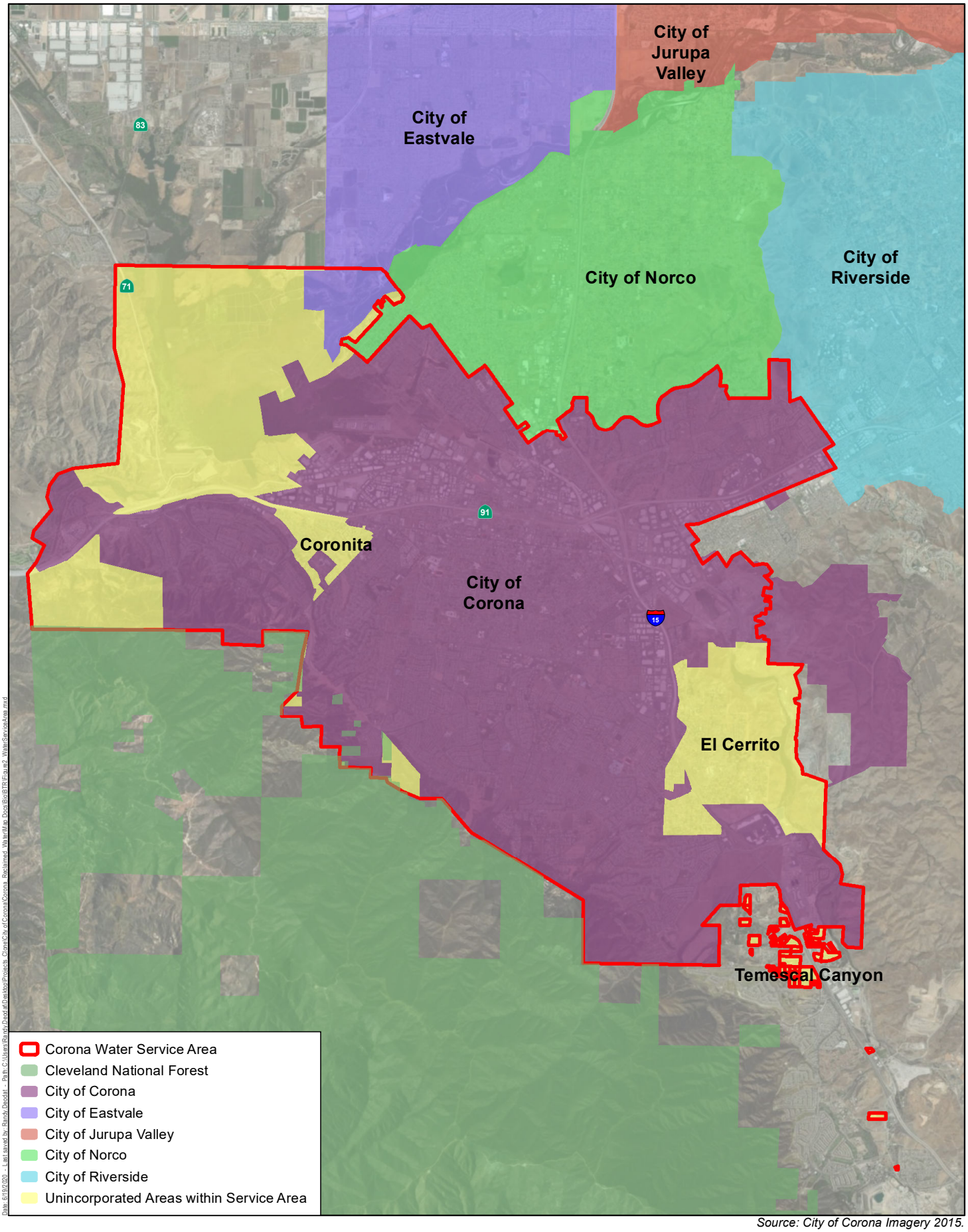
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Figure 1

Regional Location

City of Corona 2018 Reclaimed Water Master Plan

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Source: City of Corona Imagery 2015.

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Figure 2

Water Service Area

City of Corona 2018 Reclaimed Water Master Plan

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Source: County of Riverside Imagery 2016.

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Figure 3a

Source of Supply Projects

City of Corona 2018 Reclaimed Water Master Plan

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Source: County of Riverside Imagery 2016.

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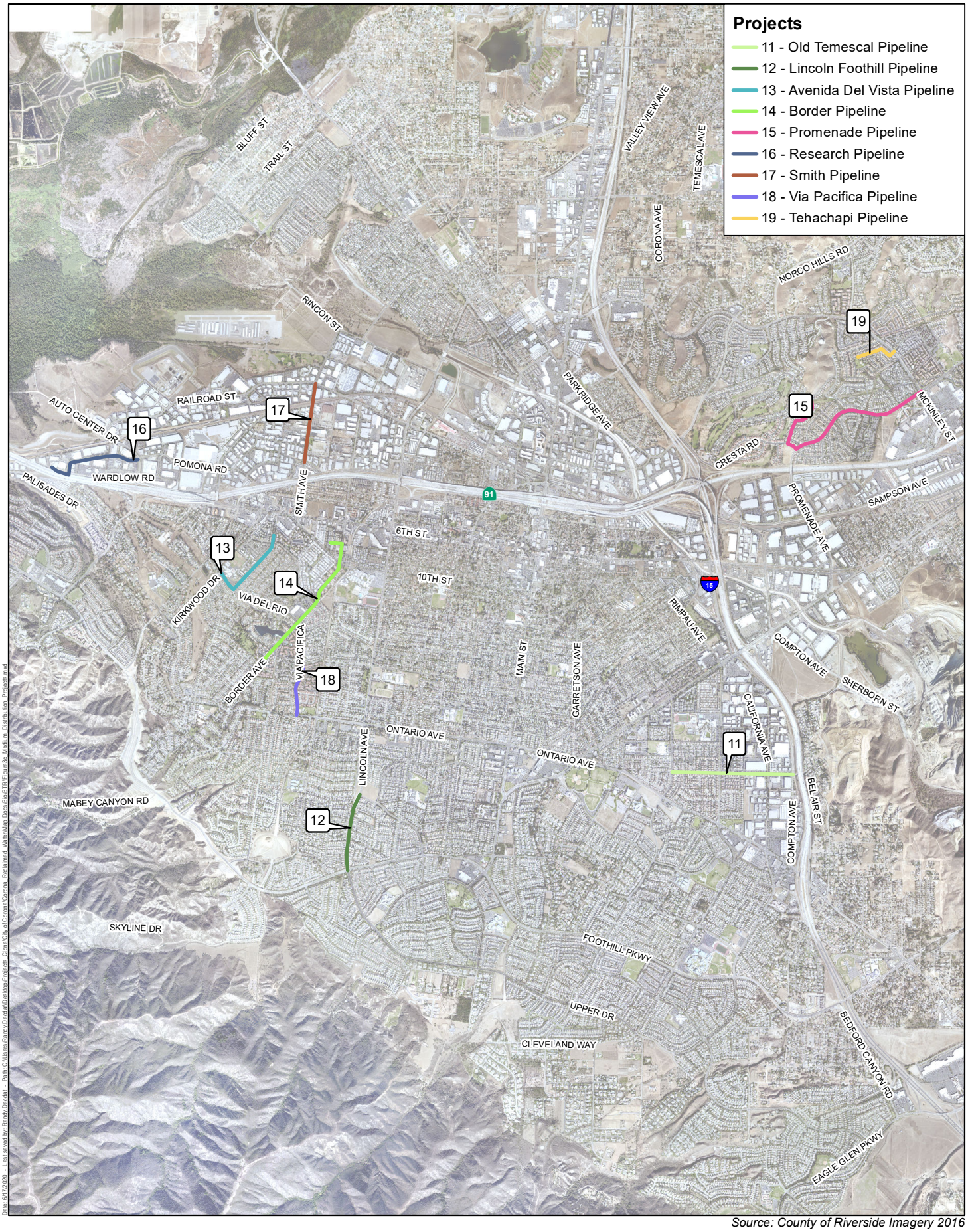
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Figure 3b

Large Distribution Pipelines

City of Corona 2018 Reclaimed Water Master Plan

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Source: County of Riverside Imagery 2016

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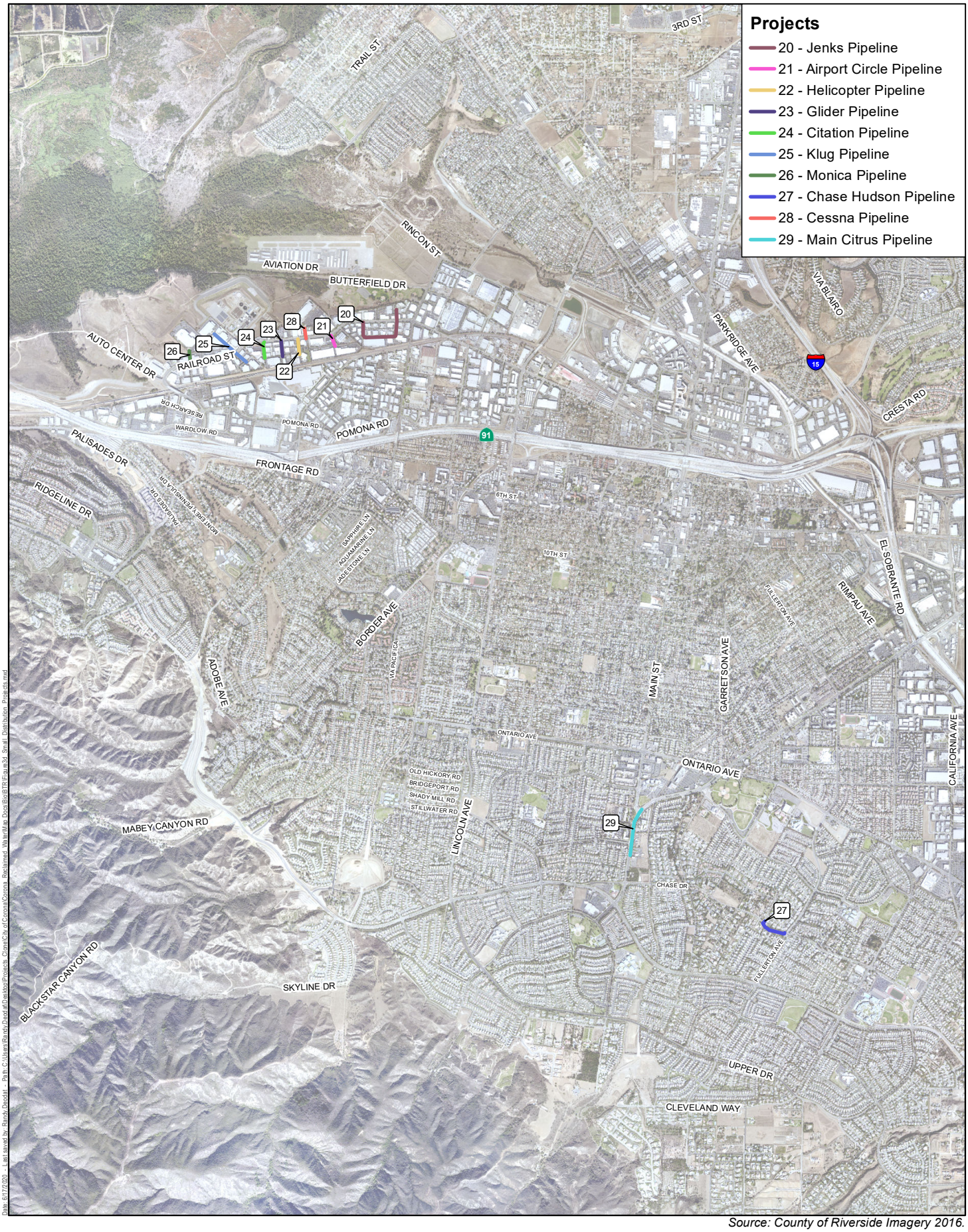
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Figure 3c

Medium Distribution Pipelines

City of Corona 2018 Reclaimed Water Master Plan

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Source: County of Riverside Imagery 2016.

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Feet

Figure 3d

Small Distribution Pipelines

City of Corona 2018 Reclaimed Water Master Plan

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1.1.2.3 Conversion of Adjacent Customers

Customers adjacent to existing pipelines should be converted to reclaimed water when possible. The adjacent demands for the City include commercial, institutional, MFR, and single-family residential.

The conversion would convert 139.9 gpm (225.7 AFY) of potable water demand for irrigation to reclaimed water demand by adding small irrigated areas one at a time throughout the system and would investigate the possibility of converting other CII demands (e.g., cooling water replenishment, industrial process water, industrial cleaning, dual plumbing). It would require the addition of new laterals and meters as necessary to capture irrigation demand adjacent to existing distribution pipelines.

1.1.2.4 Data Management Projects

The City has an extensive automation system for its water facilities called Supervisory Control and Data Acquisition (SCADA). SCADA is used primarily for operational control and management of the City's water, wastewater, and reclaimed water assets. The following enhancements would expand the use of SCADA to resource management and demand management.

1.1.3 Construction Methods

Following certification of the 2018 RWMP PEIR, the City would determine the implementation schedule for the construction of the improvements contemplated under the project. Once a project is selected for construction, the City would develop project-specific plans and specifications for each project, perform a project-level CEQA review, and file the appropriate documentation for the necessary permits and approvals in advance of awarding a construction contract. For the purposes of the 2018 RWMP PEIR, the City has applied a standard construction zone of impact for linear construction in addition to approximating the area of direct impact for staging areas or other temporary use areas. Typical construction methods for project components are described below.

Pipeline construction would require piping, trenching, backfilling, asphalt restoration, and striping. Trench dimensions for pipeline projects would be approximately 4 feet wide and 5 feet deep. Material removed would be replaced with import (sand bedding, aggregate base backfill, and asphalt concrete), and the spoils would be transported to an appropriate disposal facility.

Pump station construction would require piping, trenching, backfilling, foundation and grading, building construction, SCADA controls, and site restoration as needed.

Storage tanks would require piping, trenching, backfilling, foundation and grading, tank construction, SCADA controls, and site restoration as needed.

Table 2 provides an estimated time frame for construction for each project included in the 2018 RWMP.

Table 2. 2018 Reclaimed Water Master Plan Project Construction Duration

Number	Project	Duration in Years
	Source of Supply Projects	
1	WRCRWA Booster Pump Station (in progress)	2
2	WRCRWA Transmission Pipeline (In progress)	2
3	WRCRWA Flow Control Improvements	2
4	Rimpau California Pipeline	4
5	Chase Booster Pump Station	3
6	Chase Tank	3
	Large Distribution Pipelines	
7	Buena Vista Tenth Pipeline	4
8	Ontario Slipline	4
9	River Pipeline	3
10	Sampson Pipeline	4
	Medium Distribution Pipelines	
11	Old Temescal Pipeline (in progress)	2
12	Lincoln Foothill Pipeline	2
13	Avenida Del Vista Pipeline	2
14	Border Pipeline	2
15	Promenade Pipeline	3
16	Research Pipeline	2
17	Smith Pipeline	2
18	Via Pacifica Pipeline	2
19	Tehachapi Pipeline	2
	Small Distribution Pipelines	
20	Jenks Pipeline	2
21	Airport Circle Pipeline	1
22	Helicopter Pipeline	1
23	Glider Pipeline	1
24	Citation Pipeline	1
25	Klug Pipeline	2
26	Monica Pipeline	1
27	Chase Hudson Pipeline	2
28	Cessna Pipeline	1
29	Main Citrus Pipeline	1

Source: City of Corona 2018.

1.2 Purpose

At the request of the City, Harris has prepared this Biological Resources Technical Report for the project.

The project objectives are as follows:

- Expand and improve the City's recycled water program in accordance with Ordinance 2854 (Recycled Water Rules and Regulations)
- Prioritize and implement system improvements pursuant to the City's 2018 RWMP to maximize reclaimed water supply availability and reduce the use of potable water
- Improve water supply system performance by facilitating supply management and maximizing water resources
- Efficiently implement priority improvement projects to manage and distribute new sources of water supply as they become available

The term "biological resources" refers to plant species, animal species, and vegetation communities in the water service area. For the purposes of this Biological Resources Technical Report, sensitive biological resources are those defined as follows: (1) species designated as endangered, threatened, rare, protected, sensitive, or species of special concern according to the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), California Native Plant Society (CNPS), or applicable regional plans, policies, or regulations needs due to limited distribution, limited numbers, or significant population declines associated with natural or human-made causes; (2) species and habitat types recognized by local and regional resource agencies as special status; (3) habitats or vegetation communities that are unique, of relatively limited distribution, or of particular value to wildlife; (4) wildlife corridors and habitat linkages; or (5) biological resources that may or may not be considered special status but are regulated under local, state, or federal laws.

1.3 Environmental Setting

This section includes a description of the climate, surrounding land uses, topography and soils, and hydrology present in the water service area.

1.3.1 Climate

The County features a somewhat cooler version of a Mediterranean climate, or semi-arid climate, with warm, sunny, dry summers and cool, rainy, mild winters. Relative to other areas in Southern California, winters are colder, with frost and chilly to cold morning temperatures. Climatological data obtained from nearby weather stations indicate the annual precipitation averages 12 inches per year. Almost all precipitation in the form of rain occurs between October and April, with hardly any occurring between May and September. The wettest month is February, with a monthly average total precipitation of 2.54 inches. The average maximum and minimum temperatures for

the region are 80.6 and 47.2 degrees Fahrenheit (°F), respectively, with July and August (monthly average 98.1°F) being the hottest months and January (monthly average 36.4°F) being the coldest month. The temperature during the site visit was in the low-80s.

1.3.2 Surrounding Land Uses

The water service area consists of a mosaic of land uses including industrial, commercial, residential, educational, and public works developments; flood control facilities; and vacant, undeveloped land. These land uses have heavily disturbed, if not completely eliminated, the majority of the natural vegetation within the City boundaries. However, the western boundary of the City borders the Santa Ana Mountains (Cleveland National Forest), and the northern portion of the City borders the Santa Ana River and Prado Basin.

1.3.3 Topography and Soils

The water service area is bordered to the south and west by the Santa Ana Mountains, to the east by Temescal Creek and Bedford Canyon Wash, and to the north by the Santa Ana River Basin and Prado Dam. The water service area is in the Corona North, Corona South, Black Star Canyon, Lake Matthews, and Prado Dam USGS quadrangles. The relief in the water service area ranges from 420 feet above mean sea level in the Santa Ana River Basin to 4,400 feet above mean sea level on the peaks of the Santa Ana Mountains (Figure 4, USGS Topographic Map). The 2018 RWMP projects covered in the 2018 RWMP PEIR range in elevation from 520 to 1,520 feet above mean sea level.

The topography in the water service area ranges from gently sloping areas in the central portion of the City to steeper topography in the adjacent mountain areas, with over 50 percent of the water service area on a slope of 10 percent or less (Figure 4). The Santa Ana Mountains occur west of the water service area; therefore, the areas surrounding the western and southwestern edges of the water service area are characterized with slopes of 25 percent or greater (City of Corona 2020a).

The soil types present in the water service area include Garretson gravelly very fine sandy loam, Arbuckle gravelly loam, Perkins loam, Perkins gravelly loam, and Cortina gravelly coarse sandy loam; other small areas of clay and loam soils occur in the area (USDA 2020). The five soil types are described in detail below (USDA 1971):

Garretson gravelly very fine sandy loam: 2 to 8 percent slopes, consists of well-drained, very fine sandy loams that formed in alluvium derived from metasedimentary rock.

Arbuckle gravelly loam: 2 to 9 percent slopes, well-drained, gently to moderately sloping soils. They occur on alluvial fans derived from igneous, metamorphic, and sedimentary rock.

Perkins loam: 2 to 5 percent slopes, well-drained soils on alluvial fans and terraces. These soils developed in alluvium that was derived mainly from metasedimentary, fine-grained sandstone.

Perkins gravelly loam: 2 to 5 percent slopes, includes small areas of Arbuckle gravelly loam and Garretson gravelly very fine sandy loam. These soils have slow runoff and low erosion potential.

Cortina gravelly coarse sandy loam: 2 to 8 percent slopes, includes gently to moderately sloping soils, and is excessively drained soil on alluvial fans and in valley fills. These soils formed in alluvium from metasedimentary rock.

1.3.4 Hydrology

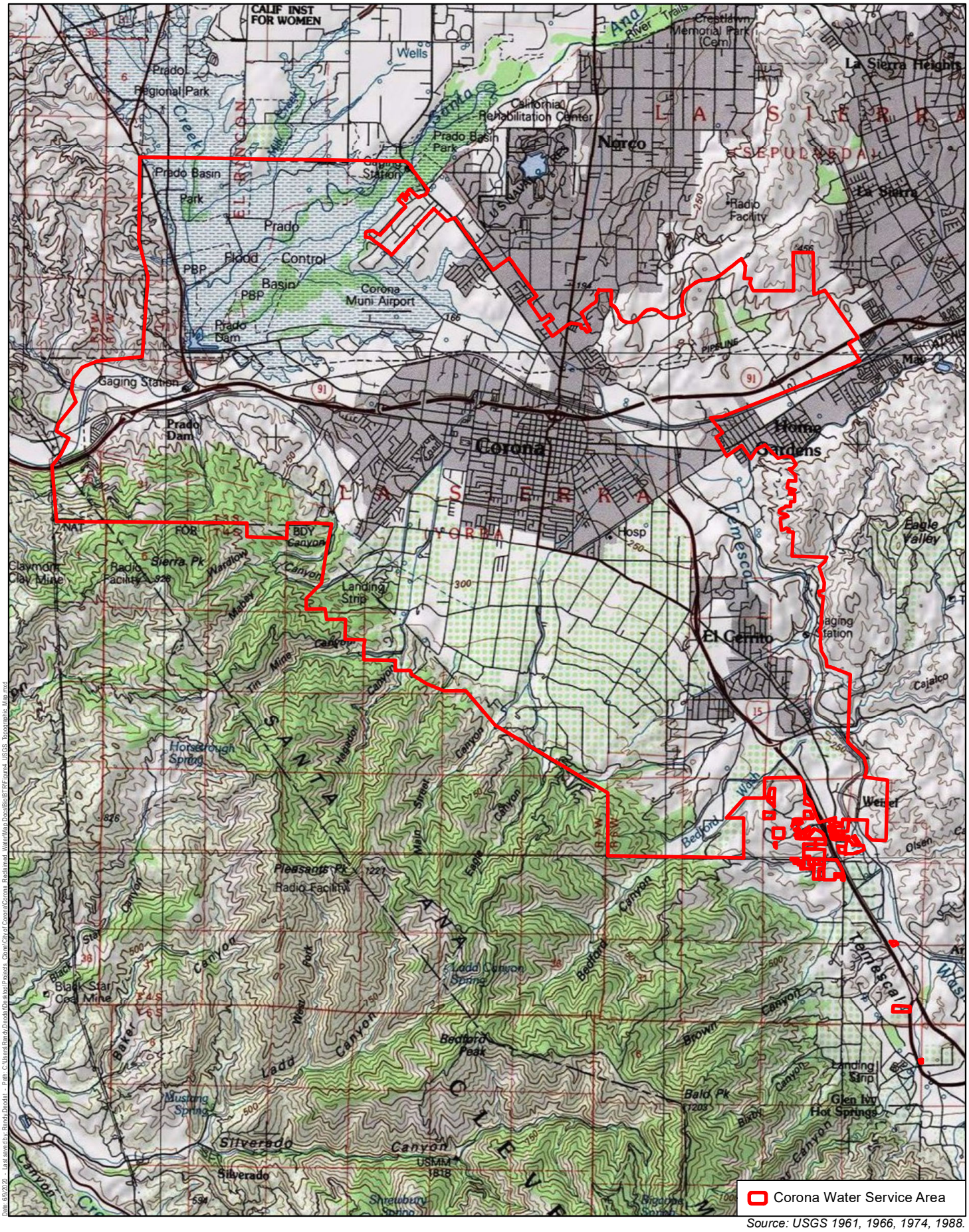
The water service area is in the Santa Ana River watershed, a flood control zone monitored by the Santa Ana Regional Water Quality Control Board (RWQCB) that covers portions of the Counties of Riverside, Orange, and San Bernardino. In the County of Riverside, the Santa Ana River watershed is subdivided into the Santa Ana subwatershed (which the water service area is in) and the San Jacinto River subwatershed. The Santa Ana subwatershed consists of the Santa Ana River and its tributaries, and the San Jacinto River subwatershed includes the San Jacinto River and its tributaries that overflow into the Santa Ana River only in high-volume storm events.

The Santa Ana subwatershed is also subdivided into smaller subwatersheds based on major tributary channels that feed into the Santa Ana River. The water service area is in two of these smaller subwatersheds: the Middle Santa Ana River subwatershed and the Temescal Wash subwatershed. The Middle Santa Ana River subwatershed is in the northwestern corner of the County and covers a total tributary area of 170 square miles that generally drains west toward the Santa Ana River. Tributaries to this subwatershed include Temescal Creek, Tequesquite Arroyo (Sycamore Creek), Day Creek, and San Sevaine Creek. The Temescal Wash subwatershed covers 250 square miles and is defined as the tributary area draining into the Temescal Wash, also known as Temescal Creek, that connects Lake Elsinore with the Santa Ana River.

Tributaries to the Temescal Wash include Wasson Canyon Wash, Arroyo Del Toro, Stovepipe Canyon Wash, Rice Canyon Wash, and Lee Lake. The majority of the City lies in this subwatershed, and the drainage channels that run through the City and tie into Temescal Wash include Arlington Channel, Main Street Channel, Oak Street Drain, Joseph Canyon Wash, and Bedford Wash.

The channels flow into the Santa Ana River, which continues downstream through the County of Orange and then empties into the Pacific Ocean. Figure 5, Hydrology, identifies the major water features in the water service area.

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Source: USGS 1961, 1966, 1974, 1988.

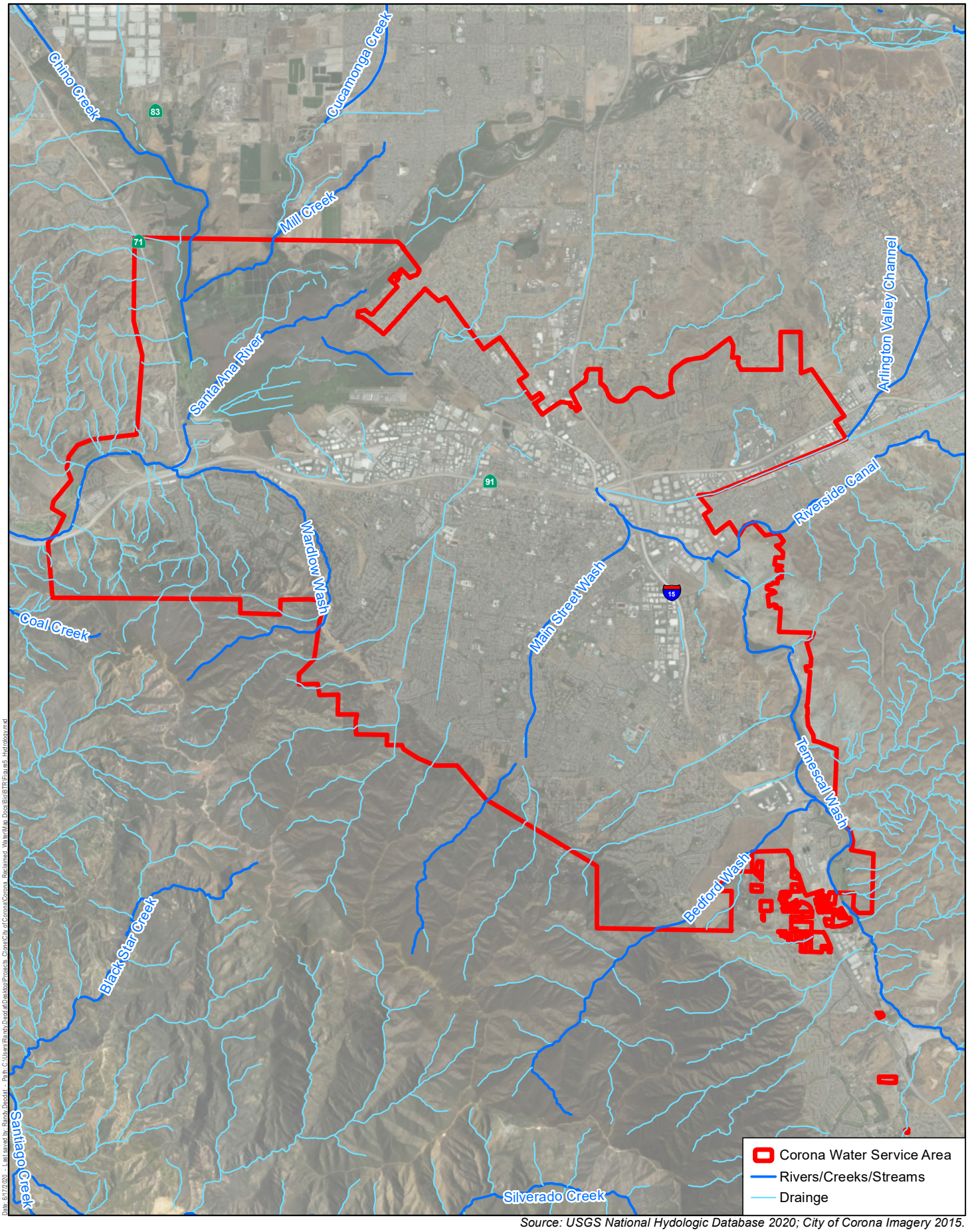
Harris & Associates

Figure 4

USGS Topographic Map

City of Corona 2018 Reclaimed Water Master Plan

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Source: USGS National Hydrologic Database 2020; City of Corona Imagery 2015.

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Figure 5

Hydrology

City of Corona 2018 Reclaimed Water Master Plan

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Section 2 Methods

The methods used to document biological resources present in the water service area included a review of pertinent background data and one biological resources site visit.

2.1 Background Information

Before conducting the site visit to assess biological resources, Harris conducted a review of previous survey information. This included a review of aerial imagery and previous vegetation and sensitive resources mapping for the City including the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) (County of Riverside 2003), the City's General Plan Technical Update Final Environmental Impact Report (City of Corona 2020a), and the 2016 Proposition 1 IS/MND Environmental Assessment (City of Corona 2016). In addition, Harris conducted a search of online databases for information regarding sensitive species documented in the water service area. Online databases included the USFWS Information for Planning and Consultation (IPaC) species records (USFWS 2020a); the CDFW California Natural Diversity Database (CDFW 2020a); Calflora online plant species database (Calflora 2020); CNPS Rare and Endangered Plant Electronic Inventory (CNPS 2020); eBird, an online bird species database, (Cornell Lab of Ornithology 2020a); and iNaturalist, an online plant and animal species database (iNaturalist 2020). Plant and animals species sensitivity statuses are from the CNPS (2020), CDFW (2020b, 2020c), USFWS (2020a), and Western Riverside County MSHCP (County of Riverside 2003).

The USFWS IPaC report was created by drawing a perimeter around the water service area to create a list of potential endangered and threatened species known to be present near the water service area. The IPaC report also indicates whether critical habitat is present or not. The USFWS National Wetlands Inventory was also reviewed, and the data were downloaded to view the locations of potential aquatic resources in and downstream of the water service area (USFWS 2020b).

In addition to database review, topographic maps, soils maps (USDA 2020; Bowman 1973), and other maps of the water service area and its vicinity were acquired and reviewed to obtain updated information on the area's natural environment. A summary of the results of the database and document review is detailed in Section 3, Results.

2.2 Biological Survey

During the site visit on April 14, 2020, Harris biologists conducted a general biological reconnaissance survey by visually inspecting a number of projects in the water service area to determine the potential for sensitive plants and animals to occur.

Animal species observed or otherwise detected during the survey were recorded and are provided in Appendix A, Species Observed. Animal identifications were made in the field directly by visual

observation or indirectly by detection of calls, burrows, tracks, or scat. Binoculars were used to aid the identification of animal species. Nomenclature used for animals comes from CaliforniaHerps.com (2020) for amphibians and reptiles, American Ornithological Society (2019) and Cornell Lab of Ornithology (2020a) for birds, Checklist of Butterflies of San Diego County (San Diego Natural History Museum 2020a) for butterflies, San Diego Natural History Museum (2020b) for other insects, and Bradley et al. (2014) for mammals.

2.3 Vegetation Mapping

Vegetation community boundaries for the project were provided in geographic information system (GIS) format by the City. Vegetation community types include the Holland vegetation classification code as modified for the Western Riverside County MSHCP (Holland 1986; County of Riverside 2003). Plant species nomenclature used in this report generally comes from Baldwin et al. (2012) and the Jepson Interchange List of Currently Accepted Names of Native and Naturalized Plants of California (Jepson Flora Project 2014).

Section 3 Results

The following results provide information from City biological resources technical reports, online database searches, City GIS data, the Western Riverside County MSHCP (County of Riverside 2003), and the biological resources survey conducted in the water service area.

3.1 Vegetation Communities and Land Use Types

The water service area consists of nine sensitive vegetation communities and two land use types, as described below (County of Riverside 2003; City of Corona 2018; Holland 1986).

The following subsections describe the identified in the water service area. The sensitive vegetation communities were designated as sensitive because of the general scarcity of the community; because impacts to the habitat are often regulated by the USFWS, CDFW, U.S. Army Corps of Engineers (USACE), or Regional Water Quality Control Board (RWQCB); or because of the species the vegetation community supports and the functions that it provides. Figure 6, Vegetation Communities – Overview, presents the vegetation community and land use type boundaries, and Figures 7a though 7d show the vegetation communities and land use types.

3.1.1 Chaparral

Chaparral is a shrub-dominated vegetation community composed largely of evergreen species that range from 3 to 12 feet in height. The most common and widespread species in chaparral is chamise (*Adenostoma fasciculatum*). Other common shrub species include manzanita (*Arctostaphylos* spp.), wild lilac (*Ceanothus* spp.), oak (*Quercus* spp.), redberry (*Rhamnus* spp.), laurel sumac (*Malosma laurina*), mountain mahogany (*Cercocarpus betuloides*), toyon (*Heteromeles arbutifolia*), and mission manzanita (*Xylococcus bicolor*). Soft-leaved subshrubs are less common in chaparral than in coastal sage scrub but occur in canopy gaps of mature stands (Holland 1986; Sawyer et al. 2009).

Chaparral occurs in the southwestern portion of the water service area at the eastern base of the Santa Ana Mountains (Figure 6).

3.1.2 Coastal Sage Scrub (Diegan and Riversidian)

Coastal sage scrub in the water service area consists of Diegan coastal sage scrub and Riversidian coastal sage scrub.

Diegan coastal sage scrub is dominated by a characteristic suite of low-statured, aromatic, drought deciduous shrubs and subshrub species. Composition varies substantially depending on physical circumstances and the successional status of the vegetation community; however, characteristic species include California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), laurel sumac, California encelia (*Encelia californica*), and several species of sage (e.g., *Salvia*

mellifera, *Salvia apiana*) (Holland 1986; Sawyer et al. 2009). Diegan coastal sage scrub occurs in the western portion of the water service area south of the Santa Ana River.

Riversidian sage scrub is dominated by brittlebush (*Encelia farinosa*) with patches of California buckwheat and California sagebrush. Riversidian coastal sage scrub occurs in the southeastern portion of the water service area (Figure 6).

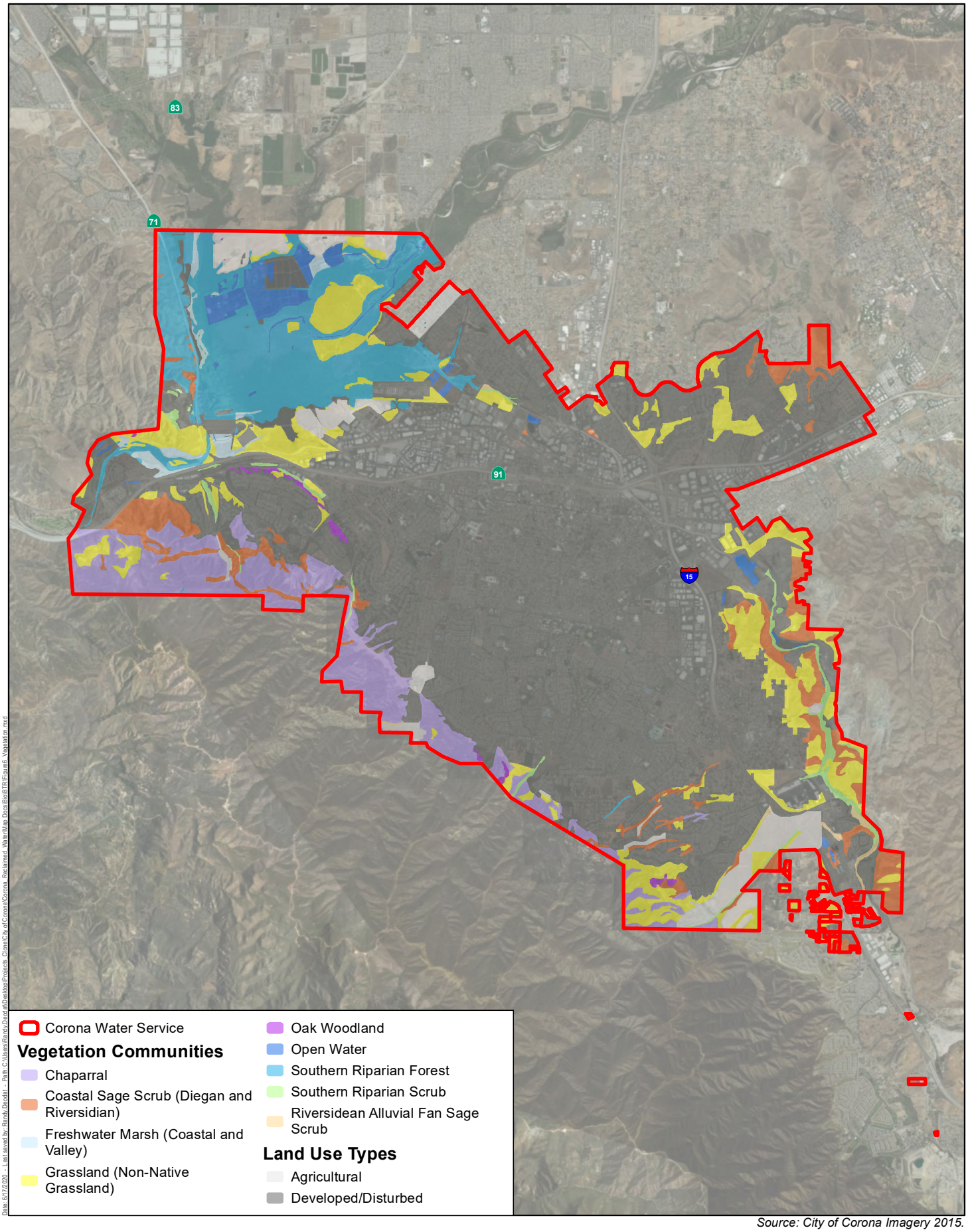
3.1.3 Freshwater Marsh (Coastal and Valley)

Freshwater marsh in the water service area consists of coastal and valley freshwater marsh. Coastal and valley freshwater marsh is dominated by freshwater emergent monocots often forming closed canopies. Dominant species include cattails (*Typha* spp.) and tules (*Schoenoplectus* spp.) (Holland 1986).

In the water service area, coastal and valley freshwater marsh occurs in small pockets along the Santa Ana River north of the Corona Municipal Airport (Figure 6).

3.1.4 Grassland (Non-Native)

Non-native grassland is a dense to sparse cover of annual grasses sometimes associated with numerous species of native annual forbs. This association occurs on gradual slopes with deep, fine-textured, usually clay soils. Characteristic species include oat (*Avena* sp.), red brome (*Bromus madritensis* ssp. *rubens*), ripgut brome (*Bromus diandrus*), barley (*Hordeum* sp.), and mustard (*Brassica* sp.). The majority of species and biomass in the non-native grassland community originated from the Mediterranean region, an area with a history of agriculture and a climate similar to California (Holland 1986).



Source: City of Corona Imagery 2015.

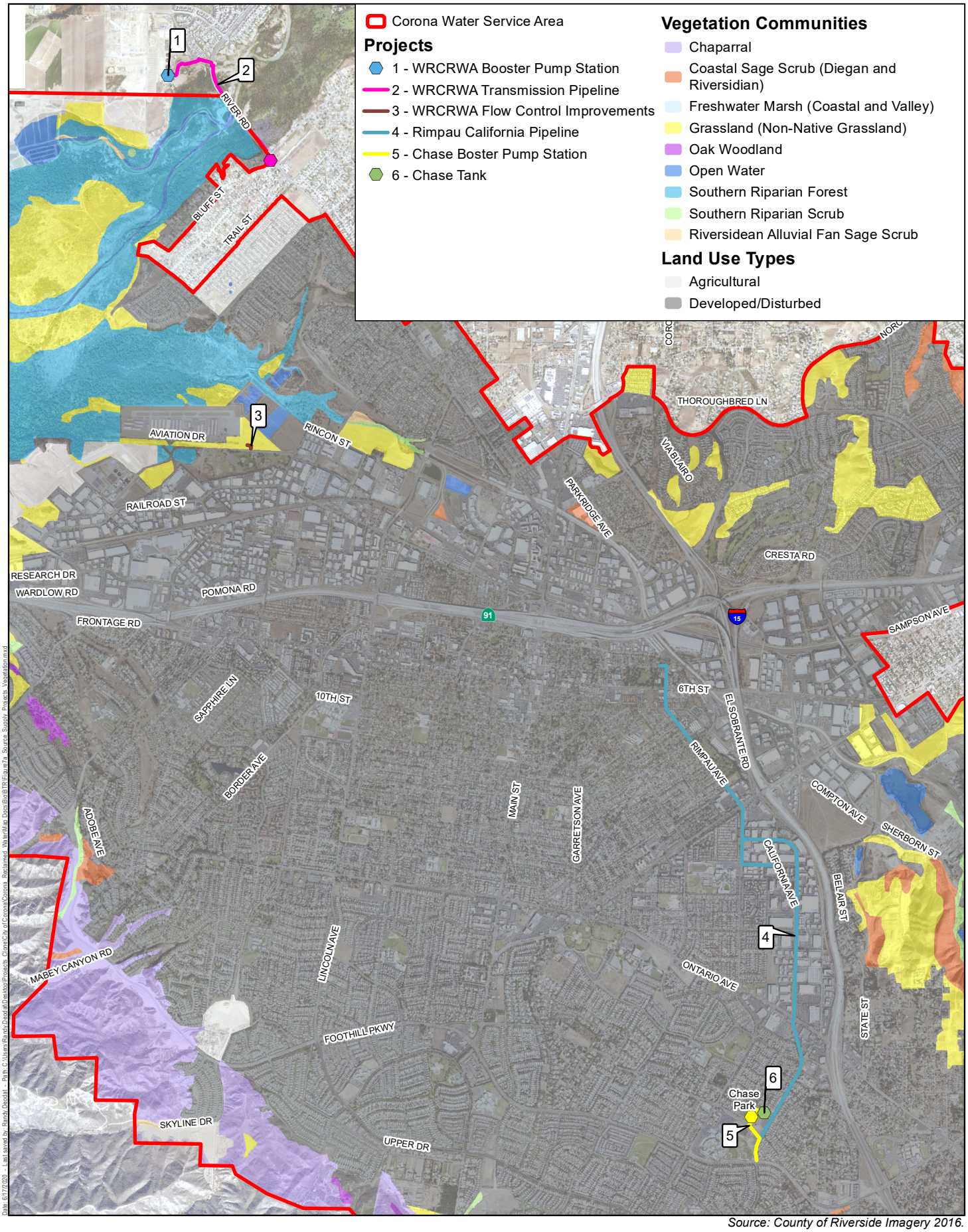
Harris & Associates

Figure 6

Vegetation Communities - Overview

City of Corona 2018 Reclaimed Water Master Plan

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Source: County of Riverside Imagery 2016.

Harris & Associates

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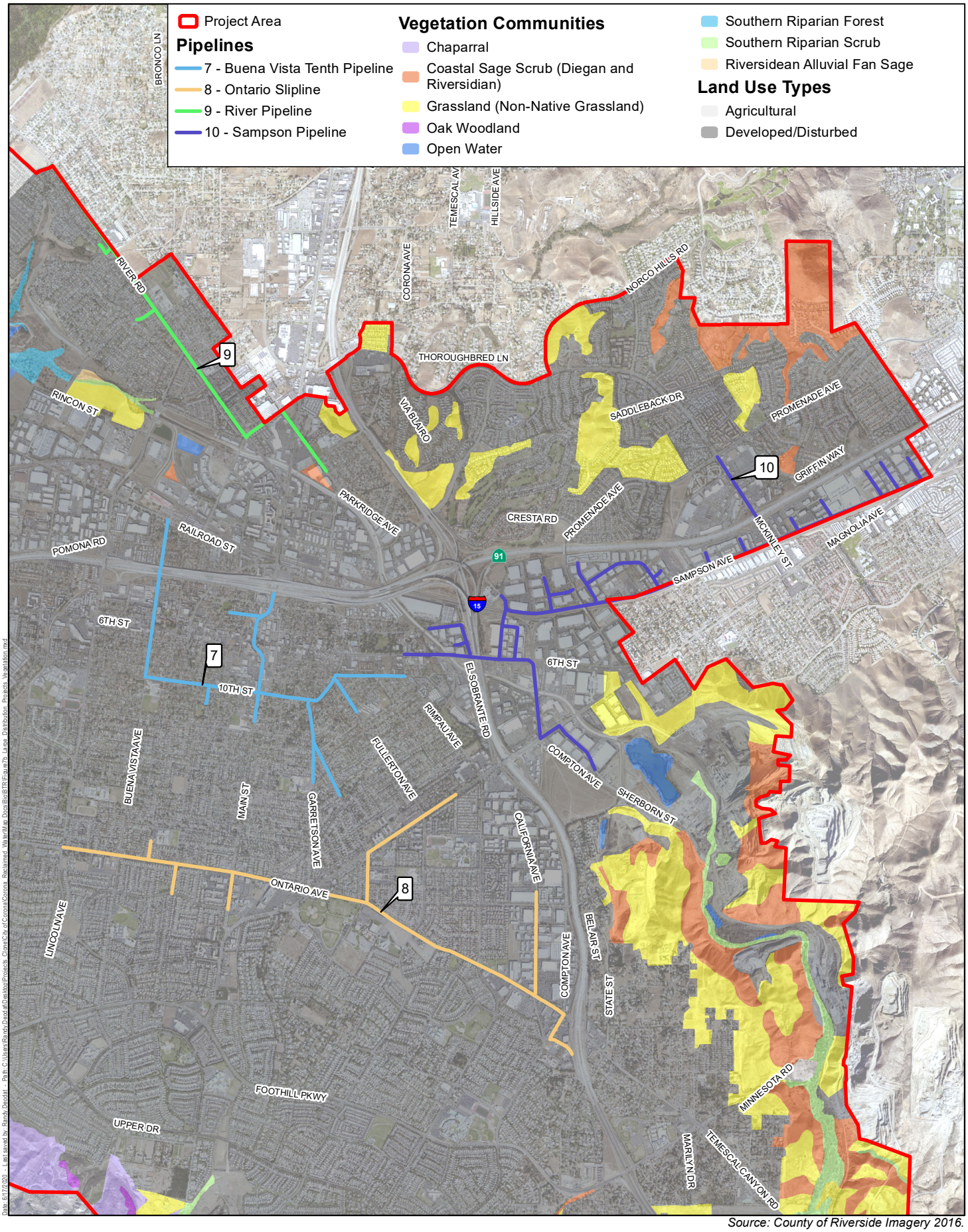
Feet

Figure 7a

Vegetation Communities, Source of Supply Projects

City of Corona 2018 Reclaimed Water Master Plan

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Source: County of Riverside Imagery 2016.

Harris & Associates

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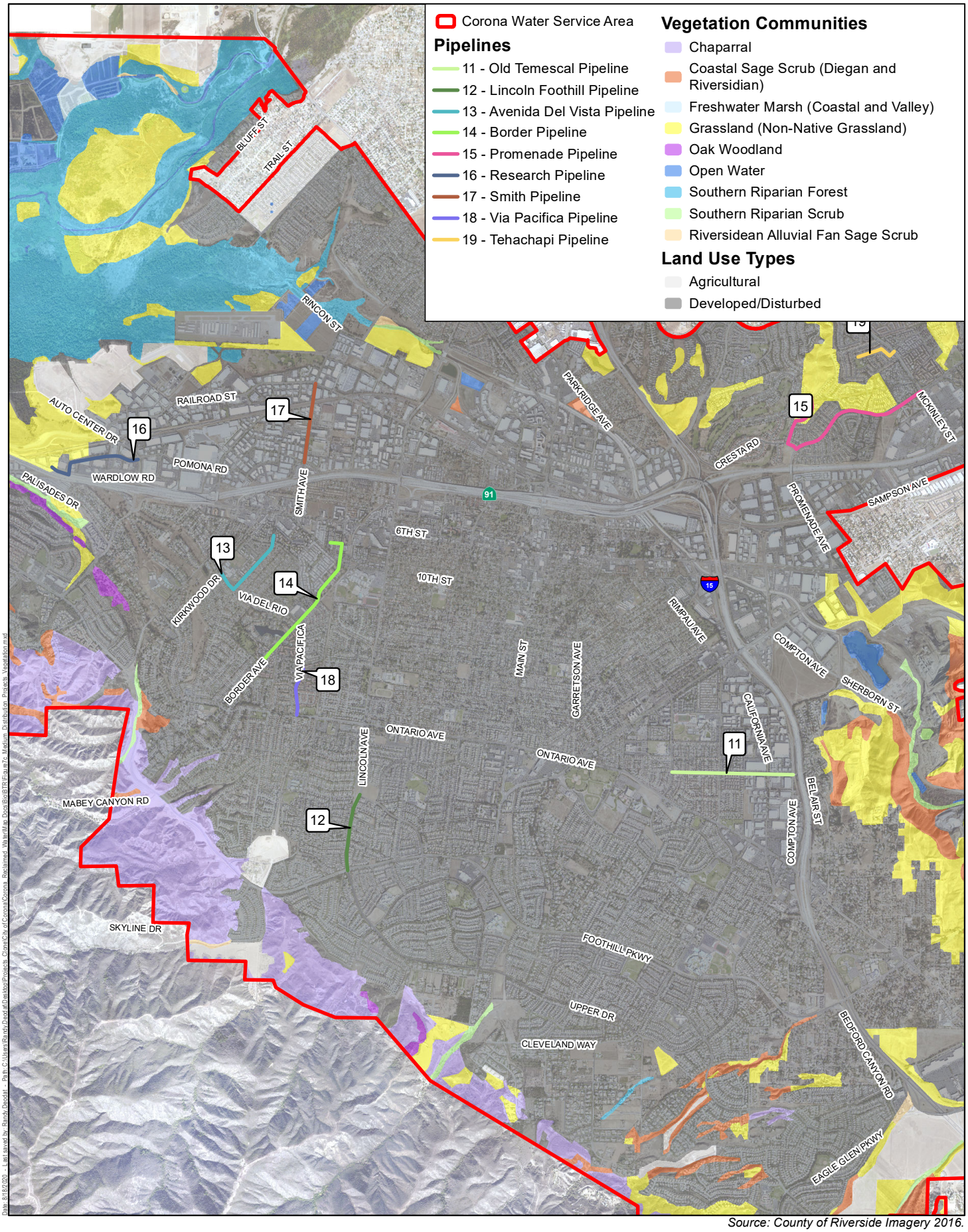
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Figure 7b

Vegetation Communities, Large Distribution Pipelines

City of Corona 2018 Reclaimed Water Master Plan

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Source: County of Riverside Imagery 2016.

Harris & Associates

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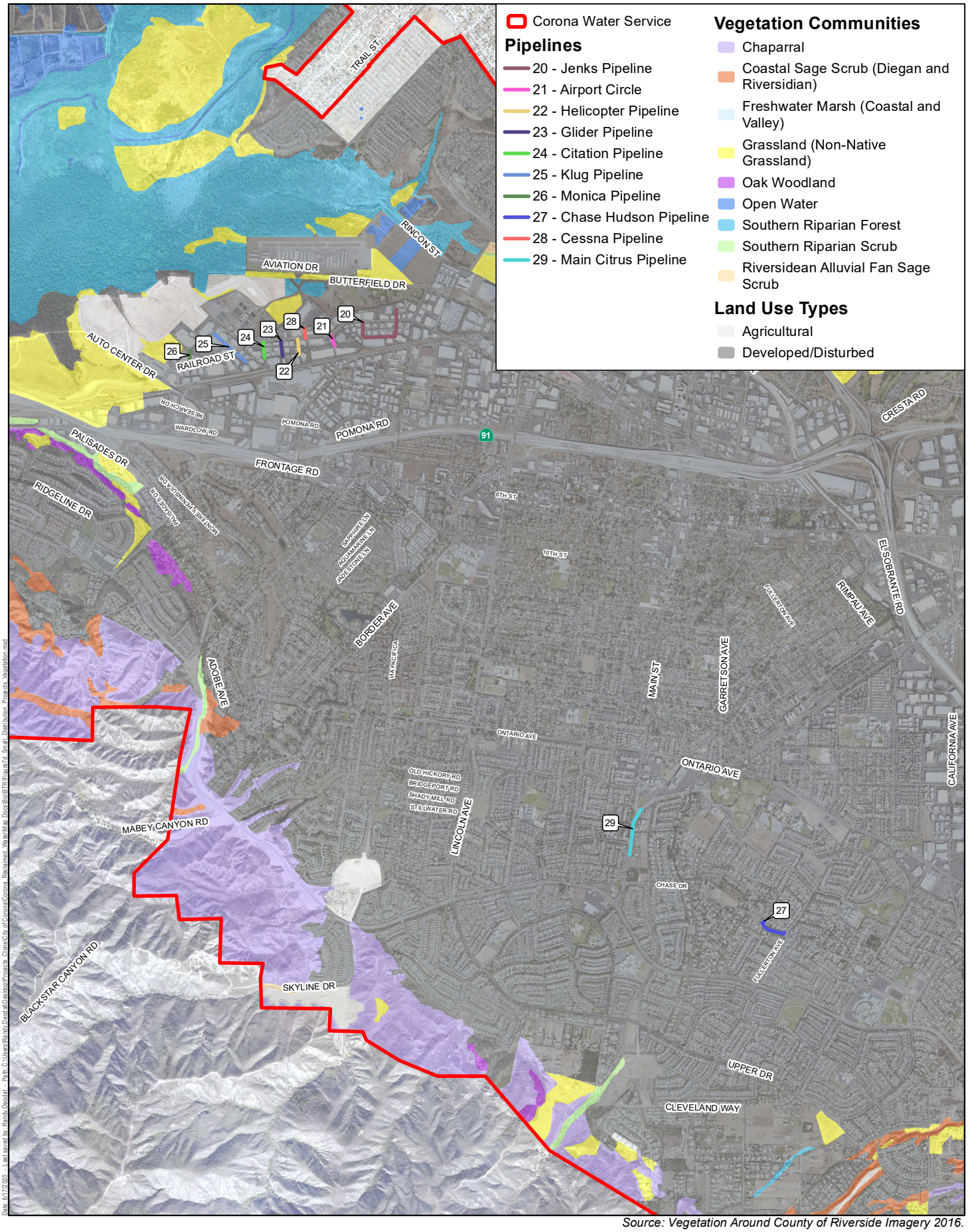
Feet

Figure 7c

Vegetation Communities, Medium Distribution Pipelines

City of Corona 2018 Reclaimed Water Master Plan

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Source: Vegetation Around County of Riverside Imagery 2016.

Harris & Associates

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Feet

Figure 7d

Vegetation Communities, Small Distribution Pipelines

City of Corona 2018 Reclaimed Water Master Plan

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Directly and indirectly, non-native grasslands provide foraging habitat for raptors and may be succeeded naturally by coastal sage scrub or other native habitats over time. For these reasons, non-native grassland is considered sensitive by the CDFW.

Plant species in the water service area that are documented in this vegetation community include ripgut brome, cheatgrass (*Bromus tectorum*), red brome, wild oat (*Avena fatua*), Mediterranean grass (*Schismus barbatus*), shortpod mustard (*Hirschfeldia incana*), Russian thistle (*Salsola tragus*), and common sunflower (*Helianthus annuus*).

Three projects, Western Riverside County Regional Wastewater Authority (WRCRWA) Flood Control Improvements; Promenade Pipeline; and Research Pipeline, are in or adjacent to undeveloped non-native grassland (Figures 7a and 7c).

3.1.5 Oak Woodland

Oak woodland is dominated by Engelmann oak (*Quercus engelmannii*), coast live oak (*Quercus agrifolia*), canyon live oak (*Quercus chrysolepis*), interior live oak (*Quercus wislizenii*), and black oak (*Quercus kelloggii*) in the canopy, which may be continuous to intermittent or savannah-like.

Oak woodland in the water service area is dominated by coast live oak woodland and occurs in the southwestern portion of the water service area on the eastern side of the Santa Ana Mountains (Figure 6).

3.1.6 Open Water

Open water in the water service area consists of the Prado Flood Control Basin, Santa Ana River, and other drainages and includes non-vegetated channel and ponds (Holland 1986). Non-vegetated channel consists of predominantly unvegetated sandy, gravelly, or rocky channels. Variable water lines inhibit the growth of vegetation, although some weedy species of grass may grow along the outer edges of the channel. Vegetation may exist here but is usually less than 10 percent total cover.

The majority of open water occurs in the northern portion of the water service area (Figure 6).

3.1.7 Riversidian Alluvial Fan Sage Scrub

Riversidian alluvial fan sage scrub grows on well-drained, sandy, and rocky alluvial soils deposited by streams that experience periodic flooding along the base of the San Gabriel, San Bernardino, and San Jacinto Mountains. This community is typically dominated by scale-broom (*Lepidospartum squamatum*), which is considered an indicator species. Species in this community consist of a mix of riparian species including drought deciduous subshrubs and large, evergreen, woody shrubs that adapted to intense, periodic flooding events. Due to periodic flooding and erosion, pioneer, intermediate, and mature stages of alluvial fan sage scrub vegetation communities are often distinguished. These stages vary from sparse vegetation and low-diversity to dense

subshrubs and evergreen woody shrubs. Species associated with this community include California buckwheat, coastal sagebrush, brittlebush (*Encelia farinosa*), white sage, California sycamore (*Platanus racemosa*), deerweed (*Acmispon glaber*), and mulefat (*Baccharis salicifolia*).

Riversidian alluvial fan sage scrub occurs in the northern and southwestern portions of the water service area at the edges of the Santa Ana River and Temescal Wash riparian corridors (Figures 6, 7a, and 7c).

3.1.8 Southern Riparian Forest

Southern riparian forest is a general vegetation description in the Holland vegetation classification code that includes three elements: southern coast live oak riparian forest, southern arroyo willow riparian forest, and southern cottonwood-willow riparian forest. Southern riparian forest occurs along streams in canyons and valleys. Species that dominate each community vary but are typically coast live oak, willows, or a combination of cottonwoods and willows.

In the water service area, riparian forest consists primarily of native southern cottonwood-willow riparian forest with patches of giant reed (*Arundo donax*).

Southern cottonwood-willow riparian forest is a tall, open, broad-leaved, winter-deciduous riparian forest found along perennial wet streams. This community is dominated by Fremont cottonwood (*Populus fremontii*), black cottonwood (*Populus trichocarpa*), and several tree willow species (*Salix* spp.) and contains an understory of shrubby willows. This community is primarily found in subirrigated and frequently overflowed lands, which provide the moist, bare mineral soils required for the germination and establishment of the dominant species. Other plant species associated with this community include California mugwort (*Artemisia douglasiana*), mulefat, California sycamore, Goodding's black willow (*Salix gooddingii*), sandbar willow (*Salix exigua* var. *hindsiana*), Pacific willow (*Salix lasiandra*), arroyo willow (*Salix lasiolepis*), and stinging nettle (*Urtica dioica*).

Southern riparian forest occurs in the northern portion of the water service area in the Santa Ana River floodplain. As described in the 2016 Proposition 1 IS/MND prepared for the WRCRWA Transmission Pipeline, the source of supply project would be constructed in River Road and surrounded upstream and downstream by southern cottonwood-willow riparian forest along the Santa Ana River (Figure 7a). The source of supply project completed separate California Environmental Quality Act (CEQA) review and obtained site-specific permits and is not discussed further in this report.

3.1.9 Southern Riparian Scrub

Southern riparian scrub is a dense riparian community found along major river systems where flood scour occurs and can also be found in smaller drainages influenced by urban and agricultural

runoff. This community is characterized by small trees or shrubs, such as willows, but lacks taller riparian trees. Species typically associated with southern riparian scrub include arroyo willow and other willow species and desert broom (*Baccharis sarothroides*). The riparian scrub in the water service area consists of mulefat scrub and southern willow scrub.

This community requires repeated flooding events to prevent succession to southern riparian forest. Species associated with this community include sandbar willow, black willow, red willow (*Salix laevigata*), arroyo willow, and mulefat.

Southern riparian scrub is considered sensitive and declining by the USFWS and CDFW. Southern riparian scrub may be regulated by the CDFW pursuant to Sections 1600 et seq. of the California Fish and Game (CFG) Code, the RWQCB pursuant to Section 401 of the Clean Water Act (CWA) or the Porter-Cologne Water Quality Control Act (Porter-Cologne Act), or the USACE pursuant to Section 404 of the CWA (33 USC 1344) if adjacent to waters of the state or United States.

In Southern California, southern riparian scrub has been impacted by filling, draining, clearing of vegetation, water diversion projects, impoundment projects, channelization, increased sediment loading, lowering of water tables, human recreational activities, gravel mining, proliferation of exotic species, grazing, and urban development (Bowler 1990).

Southern riparian scrub occurs along streams in the western and southeastern portions of the water service area (Figure 6).

3.1.10 Agricultural and Developed/Disturbed Land Uses

3.1.10.1 Agricultural Land

Agricultural land includes areas occupied by dairies and livestock feed yards or areas that have been tilled for use as croplands or groves and orchards. Agricultural land in the water service area occurs primarily in the southwestern portion of the City, and grazing land occurs east of Interstate 15 in the southeastern portion of the water service area.

3.1.10.2 Developed/Disturbed Land

Developed/disturbed land includes areas of existing residential, commercial, and industrial development (locations of existing manufactured structures), roadways, parking lots, pedestrian paths, horticultural open spaces, landscape buffers and courtyards, plazas, gardens, recreation fields, and areas dominated by non-native (exotic) vegetation. Developed/disturbed land occupies the majority of the water service area and is not considered sensitive. The majority of the projects would be in developed/disturbed land (Figures 6 and 7a through 7c; Table 3).

Table 3. 2018 Reclaimed Water Master Plan Project Vegetation Communities and Land Use Types

Number	Project	Vegetation Community/Land Use Type
Source of Supply Projects		
1	WRCRWA Booster Pump Station	Developed/disturbed
2	**WRCRWA Transmission Pipeline**	**Southern cottonwood-willow riparian forest; developed/disturbed**
3	**WRCRWA Flow Control Improvements**	**Non-native grassland**
4	Rimpau California Pipeline	Developed/disturbed
5	Chase Booster Pump Station	Developed/disturbed
6	Chase Tank	Developed/disturbed
Large Distribution Pipelines		
7	Buena Vista Tenth Pipeline	Developed/disturbed
8	Ontario Slipline	Developed/disturbed
9	River Pipeline	Developed/disturbed
10	Sampson Pipeline	Developed/disturbed
Medium Distribution Pipelines		
11	Old Temescal Pipeline	Developed/disturbed
12	Lincoln Foothill Pipeline	Developed/disturbed
13	Avenida Del Vista Pipeline	Developed/disturbed
14	Border Pipeline	Developed/disturbed
15	**Promenade Pipeline**	**Non-native grassland; developed/disturbed**
16	**Research Pipeline**	**Non-native grassland; developed/disturbed**
17	Smith Pipeline	Developed/disturbed
18	Via Pacifica Pipeline	Developed/disturbed
19	Tehachapi Pipeline	Developed/disturbed
Small Distribution Pipelines		
20	Jenks Pipeline	Developed/disturbed
21	Airport Circle Pipeline	Developed/disturbed
22	Helicopter Pipeline	Developed/disturbed
23	Glider Pipeline	Developed/disturbed
24	Citation Pipeline	Developed/disturbed
25	Klug Pipeline	Developed/disturbed
26	Monica Pipeline	Developed/disturbed
27	Chase Hudson Pipeline	Developed/disturbed
28	Cessna Pipeline	Developed/disturbed
29	Main Citrus Pipeline	Developed/disturbed

Notes: WRCRWA = Western Riverside County Regional Wastewater Authority

Bold = 2018 RWMP projects that contain sensitive vegetation communities

3.2 Jurisdictional Wetlands and Waters

Aquatic resources jurisdictional delineations were not conducted as part of the site visit. However, wetlands and waters potentially subject to the regulatory jurisdiction of the USACE pursuant to Section 404 of the CWA (33 USC 1344), RWQCB pursuant to Section 401 of the CWA or the Porter-Cologne Act, and the CDFW pursuant to Sections 1600 et seq. of the CFG Code occur in the water service area. Wetland vegetation communities (i.e., freshwater marsh, open water, southern riparian forest, and southern riparian scrub) occur in the water service area and may fall under the regulatory jurisdiction of the USACE, RWQCB, or CDFW (Figure 6).

Non-wetland waters including non-vegetated stream channels, erosional features, gullies, and concrete-lined channels occur in the water service area (Figure 6). These features may fall under the regulatory jurisdiction of the USACE, RWQCB, or CDFW.

As described in the 2016 Proposition 1 IS/MND prepared for the WRCRWA Transmission Pipeline, the project would be constructed in River Road but would be surrounded upstream and downstream by southern cottonwood-willow riparian forest and the Santa Ana River (Figure 7a). This project has completed separate CEQA review and obtained site-specific permits and is not discussed further in this report.

3.3 Plant Species

The 25 projects in developed/disturbed land are primarily surrounded by landscaping (non-native ornamental vegetation) and roadside vegetation dominated by non-native annual herbs and non-native grasses. The WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline projects are proposed in undeveloped, non-native grassland vegetation. Dominant non-native grass species in the water service area consist of ripgut brome and red brome. Landscaped areas and non-native roadside vegetation consist of tree, scrubs, and grasses that could support nesting bird species.

3.4 Animal Species

In total, 48 animals species were observed during the site visit (2 invertebrate/insect, 2 reptile, 40 bird, and 4 mammal). Appendix A presents the list of animal species observed. Common bird species including American crow (*Corvus brachyrhynchos*), Anna's hummingbird (*Calypte anna*), house finch (*Haemorhous mexicanus*), and mourning dove (*Zenaida macroura*) were observed in the developed/disturbed land during the site visit. Raptor species observed include red-tailed hawk (*Buteo jamaicensis*) and American kestrel (*Falco sparverius*). Four common mammal species, California ground squirrel (*Spermophilus beecheyi*), coyote (*Canis latrans*), desert cottontail (*Sylvilagus audubonii*), and mule deer (*Odocoileus hemionus*), and two common reptile species, western fence lizard (*Sceloporus occidentalis*), and western side-blotched lizard (*Uta stansburiana elegans*), were observed.

3.5 Sensitive Plant and Animal Species

This section includes sensitive plant and animal species, including critical habitat and nesting birds, as defined by the CDFW, City, California Native Plant Society (CNPS), USFWS, and Western Riverside County MSHCP (CDFW 2020a, 2020b, 2020c; City of Corona 2018; CNPS 2020; USFWS 2020a, 2020c; County of Riverside 2003).

3.5.1 Sensitive Plant Species

Sensitive plant species are considered uncommon or limited in that they (1) are endemic to Western Riverside County, (2) are a local representative of a species or association of species not otherwise found in the region, or (3) are severely depleted within their ranges or in the region. High-interest plants include those that are listed as threatened or endangered by the USFWS or CDFW and those afforded a California Rare Plant Rank (CRPR) designation of 1 or 2 by the CNPS, although species with lower CRPR ranks (i.e., CRPR 3 and 4 species) were also identified. CRPR 4 species are considered CDFW watch list (WL) species (CDFW 2020a, 2020b, 2020c; CNPS 2020) and are not afforded special status or recognition by the USFWS or CDFW but may be considered sensitive by local jurisdictions. Consistent with the CDFW, the City does not consider CRPR 3 or 4 species to be sensitive.

Status codes in Section 3.5.1.1 are defined by the CNPS CRPR system and described below (CNPS 2020):

- CRPR 1A plants are presumed extirpated in California and either rare or extinct elsewhere.
- CRPR 1B plants are rare, threatened, or endangered in California and elsewhere.
- CRPR 2A plants are presumed extirpated in California but common elsewhere.
- CRPR 2B plants are rare, threatened, or endangered in California but more common elsewhere.
- CRPR 3 plants lack the necessary information needed to assign them to one of the other ranks or to reject them.
- CRPR 4 plants are of limited distribution or infrequent throughout a broader area in California, and their status requires more regular monitoring.

The CNPS ranks at each level also include a threat rank and are determined as follows:

- **0.1:** Seriously threatened in California (over 80 percent of occurrences threatened/high degree and immediacy of threat)
- **0.2:** Moderately threatened in California (20–80 percent occurrences threatened/moderate degree and immediacy of threat)
- **0.3:** Not very threatened in California (less than 20 percent of occurrences threatened/low degree and immediacy of threat or no current threats known)

3.5.1.1 Sensitive Plant Species Documented in the Water Service Area

Table 4 presents the three sensitive plant species documented in the water service area.

Table 4. Sensitive Plant Species Documented in the Water Service Area

Scientific Name	Common Name	Status Regional/CRPR
Abronia villosa var. aurita[1]	Chaparral sand-verbena	MSHCP/1B.1
Calochortus weedii var. *intermedius*	Intermediate mariposa lily	MSHCP/1B.2
Dudleya multicaulis	Many-stemmed dudleya	MSHCP/1B.2

Sources: Calflora 2020; CDFW 2020a, 2020c; City of Corona 2018; CNPS 2020.

Notes: CRPR = California Rare Plant Rank; MSHCP = Multiple Species Habitat Conservation Plan

CRPR: 1B = rare, threatened, or endangered in California and elsewhere;.1 = seriously threatened in California (over 80 percent of occurrences threatened/high degree and immediacy of threat);.2 = moderately threatened in California (20–80 percent occurrences threatened/moderate degree and immediacy of threat)

[1] Last observed in the water service area in 1934 (occurs in the Santa Ana River floodplain east and west of the water service area).

These three sensitive plant species are discussed in more detail below.

California Rare Plant Rank 1 Plant Species

Three CRPR 1 plant species were documented in the water service area. The three species are described below.

Chaparral Sand-Verbena (Abronia villosa var. aurita)

- **Status:**[1] MSHCP/List 1B.1
- **Distribution:** Southern California, Arizona, and Baja California, Mexico
- **Habitat:** Chaparral, coastal sage scrub, and desert dunes
- **Occurrence in Water Service Area:** Documented in the City before it was developed; likely extirpated
- **Year Documented:** 1934

Intermediate Mariposa Lily (Calochortus weedii var. intermedius)

- **Status:** MSHCP/List 1B.2
- **Distribution:** Southern California
- **Habitat:** Chaparral, coastal sage scrub, and grasslands
- **Occurrence in Water Service Area:** Riparian habitat adjacent to the Santa Ana River in the northwestern portion of the water service area
- **Year Documented:** 2019

Multi-Stemmed Dudleya (Dudleya multicaulis)

- **Status:** MSHCP/List 1B.2
- **Distribution:** Southern California
- **Habitat:** Chaparral, coastal sage scrub, and grasslands

[1] Regional/CRPR

- **Occurrence in Water Service Area:** Riparian habitat adjacent to the Santa Ana River in the northwestern portion of the water service area
- **Year Documented:** 2019

3.5.2 Sensitive Animal Species

Sensitive animal species include those that have been afforded special status or recognition by the USFWS, CDFW, or Western Riverside County MSHCP. In general, the principle reason an individual taxon (species or subspecies) is given such recognition is the documented or perceived decline or limitations of its population size or geographical extent or distribution resulting in most cases from habitat loss.

3.5.2.1 Sensitive Animal Species Documented in the Water Service Area

In total, 45 sensitive animal species (2 invertebrate, 1 amphibian, 6 reptile, 2 fish, 28 bird, and 6 mammal) have been documented in the water service area (Table 5). Four sensitive bird species, California horned lark (*Eremophila alpestris actia*), least Bell's vireo (*Vireo belli pusillus*), turkey vulture (*Cathartes aura*), and yellow-breasted chat (*Icteria virens*), were observed during the site visit. Coyote tracks were observed during the site visit.

Table 5. Sensitive Animal Species Documented in the Water Service Area

Species		Status1
Common Name	**Scientific Name**	**Regional/State/Federal**
Invertebrates		
Crotch bumble bee	Bombus crotchii	None/CCE/None
Monarch butterfly	Danaus plexippus	None/None/FC
Fish		
Arroyo chub	Gila orcuttii	MSHCP/SSC/None
Santa Ana sucker	Catostomus santaanae	MSHCP/SSC/FT
Amphibian		
Coast range newt	Taricha torosa	MSHCP/SSC/None
Reptiles		
American peregrine falcon	Falco peregrinus anatum	MSHCP/CFP/Delisted
Bald eagle	Haliaeetus leucocephalus	MSHCP/CFP/BGEPA
Belding's orange-throated whiptail	Cnemidophorus hyperythrus beldingi	MSHCP/WL/None
Bell's sage sparrow	Artemisiospiza belli belli	MSHCP/WL/None
Black-crowned night-heron	Nycticorax nycticorax	MSHCP/None/None
Blainville's (coast) horned lizard	Phrynosoma blainvillii	MSHCP/SSC/None
Burrowing owl	Athene cunicularia	MSHCP/SSC/None
California horned lark	Eremophila alpestris actia	MSHCP/WL/None
California red-sided garter snake	Thamnophis sirtalis infernalis	MSHCP/SSC/None
Coastal California gnatcatcher	Polioptila californica	MSHCP/SSC/FT

Table 5. Sensitive Animal Species Documented in the Water Service Area

Species		Status1
Common Name	**Scientific Name**	**Regional/State/Federal**
Coastal western whiptail	Aspidoscelis tigris stejnegeri	MSHCP/SSC/None
Cooper's hawk	Accipiter cooperii	MSHCP/None/None
Double-crested cormorant	Phalacrocorax auritus	MSHCP/WL/None
Golden eagle	Aquila chrysaetos	MSHCP/SSC/BGEPA
Great blue heron	Ardea herodias	MSHCP/None/None
Least Bell's vireo	Vireo belli pusillus	MSHCP/CE/FE
Least bittern	Ixobrychus exilis	None/SSC/None
Loggerhead shrike	Lanius ludovicianus	MSHCP/SSC/None
Merlin	Falco columbarius	MSHCP/WL/None
Northern harrier	Circus cyaneus	MSHCP/SSC/None
Osprey	Pandion haliaetus	MSHCP/None/None
Red-diamond rattlesnake	Crotalus ruber	MSHCP/SSC/None
Sharp-shinned hawk	Accipiter striatus	MSHCP/None/None
Southwestern willow flycatcher	Empidonax traillii extimus	MSHCP/CE/FE
Swainson's hawk	Buteo swainsoni	MSHCP/CT/None
Tree swallow	Tachycineta bicolor	MSHCP/None/None
Tricolored blackbird	Agelaius tricolor	MSHCP/CT/None
Turkey vulture	Cathartes aura	MSHCP/None/None
Western pond turtle	Clemmys [marmorata] pallida	MSHCP/SSC/None
Western yellow-billed cuckoo	Coccyzus americanus occidentalis	MSHCP/CE/FT
White-faced ibis	Plegadis chihi	MSHCP/SSC/None
White-tailed kite	Elanus leucurus	MSHCP/SSC/None
Yellow warbler	Setophaga petechia	MSHCP/SSC/None
Yellow-breasted chat	Icteria virens	MSHCP/SSC/None
Mammals		
Bobcat	Lynx rufus	MSHCP/None/None
Coyote	Canis latrans	MSHCP/None/None
Northwestern San Diego pocket mouse	Chaetodipus fallax fallax	MSHCP/SSC/None
Pocket free-tailed bat	Nyctinomops femorosaccus	None/SSC/None
Stephens' kangaroo rat	Dipodomys stephensi	MSHCP/CT/FE
Western yellow bat	Lasiurus xanthinus	None/SSC/None

Sources: CaliforniaHerps.com 2020; CDFW 2020a, 2020b; City of Corona 2018; Cornell Lab of Ornithology 2020a, 2020b; iNaturalist 2020.

Notes: BGEPA = Bald and Golden Eagle Protection Act; CCE = California candidate endangered; CE = California endangered; CFP= California fully protected; CT = California threatened; FC = federal candidate for listing; FE = federally endangered; FT= federally threatened; MSHCP = Western Riverside Multiple Species Habitat Conservation Plan; SSC = CDFW species of special concern; WL = CDFW watch list

Invertebrates/Insects

Crotch's Bumble Bee (Bombus crotchii)

- **Status:**[2] MSHCP/California candidate endangered species (CCE)/None
- **Distribution:** California, Nevada, and Baja California, Mexico
- **Habitat:** Chaparral, grassland, and sage scrub
- **Occurrence in Water Service Area:** Historic record in the developed portion of the City
- **Year Documented:** 1933

Monarch (Danaus plexippus)

- **Status:** MSHCP/None/Candidate
- **Distribution:** Southern Canada, United States, Mexico, Central American, northern South America, parts of Australia, and western Europe
- **Habitat:** Host plant is milkweed (*Asclepias* spp.)
- **Occurrence in Water Service Area:** Forages and nectars on ornamental flowers throughout the water service area
- **Year Documented:** 2020

Fish

Arroyo Chub (Gila orcuttii)

- **Status:** MSHCP/California fully protected (CFP)/None
- **Distribution:** Coastal Southern California
- **Habitat:** Streams and rivers
- **Occurrence in Water Service Area:** Santa Ana River in the northern portion of the water service area
- **Year Documented:** 2013

Santa Ana Sucker (Catostomus santaanae)

- **Status:** MSHCP/CFP/FT
- **Distribution:** Southern California
- **Habitat:** Streams and rivers
- **Occurrence in Water Service Area:** Santa Ana River in the northern portion of the water service area
- **Year Documented:** 2017

[2] Status for sensitive animal species is organized as follows: regional/state/federal.

Amphibians

Coast Range Newt (Taricha torosa)

- **Status:** MSHCP/Species of special concern (SSC)/None
- **Distribution:** California
- **Habitat:** Aquatic habitats
- **Occurrence in Water Service Area:** Riparian forest, riparian scrub, and non-vegetated channel associated with the Santa Ana River in the northern portion of the water service area
- **Year Documented:** 1999

Reptiles

Belding's Orange-Throated Whiptail (Aspidoscelis hyperythra beldingi)

- **Status:** MSHCP/SSC/None
- **Distribution:** Southern California and Baja California, Mexico
- **Habitat:** Chaparral, grassland, riparian scrub, and sage scrub
- **Occurrence in Water Service Area:** Undeveloped scrub areas on the edges of the Santa Ana River riparian corridor in the northern portion of the water service area
- **Year Documented:** 2015

Blainville's (Coast) Horned Lizard (Phrynosoma blainvillii)

- **Status:** MSHCP/SSC/None
- **Distribution:** California and Baja California, Mexico
- **Habitat:** Chaparral, grassland, riparian scrub, and sage scrub
- **Occurrence in Water Service Area:** Riparian scrub southeastern portion of the water service area
- **Year Documented:** 1990

California Red-Sided Garter Snake (Thamnophis sirtalis infernalis)

- **Status:** MSHCP/SSC/None
- **Distribution:** Southern California and Baja California, Mexico
- **Habitat:** Chaparral, grassland, riparian scrub, and sage scrub
- **Occurrence in Water Service Area:** Documented in the Prado wetlands in the northwestern portion of the water service area
- **Year Documented:** 2016

Coastal Western Whiptail (Aspidoscelis tigris stejnegeri)

- **Status:** MSHCP/SSC/None
- **Distribution:** Southern California and Baja California, Mexico

- **Habitat:** Chaparral, grassland, woodland, riparian scrub, and sage scrub
- **Occurrence in Water Service Area:** Undeveloped scrub areas on the edges of the Santa Ana River riparian corridor in the northern portion of the water service area
- **Year Documented:** 2018

Red-Diamond Rattlesnake (Crotalus ruber)

- **Status:** MSHCP/SSC/None
- **Distribution:** Southern California and Baja California, Mexico
- **Habitat:** Chaparral, grassland, riparian scrub, and sage scrub
- **Occurrence in Water Service Area:** Three miles west of Lake Mathews in the southeastern portion of the water service area
- **Year Documented:** 1992

Western Pond Turtle (Clemmys [marmorata] pallida)

- **Status:** MSHCP/SSC/None
- **Distribution:** California and Baja California, Mexico
- **Habitat:** Surface water surrounded by vegetation
- **Occurrence in Water Service Area:** Santa Ana River corridor in the northern portion of the water service area
- **Year Documented:** 2011

Birds

American Peregrine Falcon (Falco peregrinus anatum)

- **Status:** MSHCP/CFP/None
- **Distribution:** North America
- **Habitat:** Large undeveloped areas near cliffs or tall buildings for nesting
- **Occurrence in Water Service Area:** Documented north of the Santa Ana River in the northwestern portion of the water service area
- **Year Documented:** 2014

Bald Eagle (Haliaeetus leucocephalus)

- **Status:** MSHCP/CFP/Bald and Golden Eagle Protection Act (BGEPA)
- **Distribution:** North America
- **Habitat:** Forests near surface water
- **Occurrence in Water Service Area:** Documented flying over the Santa Ana River at River Road in the northwestern portion of the water service area
- **Year Documented:** 2018

Bell's Sage Sparrow (Artemisiospiza belli belli)

- **Status:** MSHCP/WL/None
- **Distribution:** Southwestern United States, and northern Mexico
- **Habitat:** Sage scrub
- **Occurrence in Water Service Area:** Documented in a residential neighborhood in the eastern portion of the water service area
- **Year Documented:** 2019

Black-Crowned Night-Heron (Nycticorax nycticorax)

- **Status:** MSHCP/None/None
- **Distribution:** North America, South American, Asia, Africa, and Europe
- **Habitat:** Riparian
- **Occurrence in Water Service Area:** Documented in the Santa Ana River corridor in the northwestern portion of the water service area
- **Year Documented:** 2016

Burrowing Owl (Athene cunicularia)

- **Status:** MSHCP/SSC/None
- **Distribution:** Throughout the United States, Mexico, Central America, South America, and southern Canada
- **Habitat:** Grasslands
- **Occurrence in Water Service Area:** Documented at Naval Weapons Station Seal Beach – Detention Norco in the central portion of the water service area
- **Year Documented:** 2012

California Horned Lark (Eremophila alpestris actia)

- **Status:** MSHCP/SSC/None
- **Distribution:** California
- **Habitat:** Agriculture, grassland, and opening in sage scrub
- **Occurrence in Water Service Area:** Documented on an undeveloped lot in the southern portion of the water service area
- **Year Documented:** 2020

Coastal California Gnatcatcher (Polioptila californica californica)

- **Status:** MSHCP/SSC/FT
- **Distribution:** Southern California and Baja California, Mexico
- **Habitat:** Coastal sage scrub

- **Occurrence in Water Service Area:** Documented in the northeastern portion of the water service area, east of River Road in sage scrub adjacent to the Santa Ana River riparian corridor
- **Year Documented:** 2012

Cooper's Hawk (Accipiter cooperii)

- **Status:** MSHCP/WL/None
- **Distribution:** Throughout the United States, Mexico, Central America, and southern Canada
- **Habitat:** Riparian and wooded habitat
- **Occurrence in Water Service Area:** Riparian and wooded habitat associated with the Santa Ana River floodplain
- **Year Documented:** 2020

Double-Crested Cormorant (Phalacrocorax auritus)

- **Status:** MSHCP/WL/None
- **Distribution:** North America
- **Habitat:** Open water
- **Occurrence in Water Service Area:** Riparian forest habitat in the Santa Ana River corridor in the northwestern portion of the water service area
- **Year Documented:** 2020

Great Blue Heron (Audea herodias)

- **Status:** MSHCP/None/None
- **Distribution:** North America
- **Habitat:** Riparian forest near surface water
- **Occurrence in Water Service Area:** Riparian forest habitat in the Santa Ana River corridor in the northwestern portion of the water service area
- **Year Documented:** 2020

Golden Eagle (Athene cunicularia)

- **Status:** MSHCP/None/BGEPA
- **Distribution:** Throughout the United States, Mexico, Canada, Europe, and parts of Asia
- **Habitat:** Forests, grasslands, and shrublands; needs large undeveloped area for foraging and cliffs for nesting
- **Occurrence in Water Service Area:** Flying over the Santa Ana River in the northwestern portion of the water service area
- **Year Documented:** 2015

Least Bell's Vireo (Vireo belli pusillus)

- **Status:** MSHCP/California endangered (CE)/FE
- **Distribution:** Nesting – California and northern Baja California, Mexico; wintering – southern Baja California, Mexico
- **Habitat:** Riparian forest and riparian scrub
- **Occurrence in Water Service Area:** Riparian habitat adjacent to the Santa Ana River; documented in riparian forest on the northern side of the Santa Ana River west of River Road in the northwestern portion of the water service area
- **Year Documented:** 2020

Least Bittern (Ixobrychus exilis)

- **Status:** MSHCP/SSC/None
- **Distribution:** Throughout the United States, Mexico, Central America, northern South America, and southern Canada
- **Habitat:** Freshwater marsh
- **Occurrence in Water Service Area:** Coastal and valley freshwater marsh in the Santa Ana River floodplain in the northwestern portion of the water service area
- **Year Documented:** 2020

Loggerhead Shrike (Lanius ludovicianus)

- **Status:** None/SSC/None
- **Distribution:** Throughout the United States, Mexico, and southern Canada
- **Habitat:** Grasslands and open scrub habitat
- **Occurrence in Water Service Area:** Southwest of the Corona Municipal Airport in the western portion of the water service area
- **Year Documented:** 2019

Merlin (Falco columbarius)

- **Status:** MSHCP/WL/None
- **Distribution:** Throughout North America, Europe, and northern South America and sporadic in Asia
- **Habitat:** Grasslands and open scrub habitat
- **Occurrence in Water Service Area:** Documented in the northern portion of the water service area
- **Year Documented:** 2019

Northern Harrier (Circus cyaneus)

- **Status:** MSHCP/SSC/None
- **Distribution:** Throughout North America

- **Habitat:** Uplands; forages over grasslands and open areas and nests on ledges
- **Occurrence in Water Service Area:** Documented in the southeastern portion of the water service area
- **Year Documented:** 2018

Osprey (Pandion haliaetus)

- **Status:** MSHCP/WL/None
- **Distribution:** North America, South American, Asia, Africa, Australia, and Europe
- **Habitat:** Trees near surface water
- **Occurrence in Water Service Area:** Riparian forest habitat in the Santa Ana River corridor in the northwestern portion of the water service area
- **Year Documented:** 2019

Sharp-Shinned Hawk (Accipiter striatus)

- **Status:** MSHCP/WL/None
- **Distribution:** Nesting – North America and South America
- **Habitat:** Forests and woodlands
- **Occurrence in Water Service Area:** Flying over a developed area in the central portion of the water service area
- **Year Documented:** 2019

Southwestern Willow Flycatcher (Empidonax traillii extimus)

- **Status:** MSHCP/CE/FE
- **Distribution:** Nesting – Southwestern United States; wintering – Central American and northern South America
- **Habitat:** Riparian forest near surface water
- **Occurrence in Water Service Area:** Riparian forest habitat in the Santa Ana River corridor in the northwestern portion of the water service area
- **Year Documented:** 2015

Swainson's Hawk (Buteo swainsoni)

- **Status:** MSHCP/CT/None
- **Distribution:** Western North America and portions of South America
- **Habitat:** Agriculture and grasslands
- **Occurrence in Water Service Area:** Documented flying over the Santa Ana River corridor in the northern portion of the water service area
- **Year Documented:** 2018

Tree Swallow (Tachycineta bicolor)

- **Status:** MSHCP/None/None
- **Distribution:** North America
- **Habitat:** Trees near surface water
- **Occurrence in Water Service Area:** Documented in the Santa Ana River corridor in the northwestern portion of the water service area
- **Year Documented:** 2020

Tricolored Blackbird (Agelaius tricolor)

- **Status:** MSHCP/CT/None
- **Distribution:** Western United States and Baja California, Mexico
- **Habitat:** Freshwater marsh
- **Occurrence in Water Service Area:** Documented in the Santa Ana River corridor in the northern portion of the water service area
- **Year Documented:** 2015

Turkey Vulture (Cathartes aura)

- **Status:** MSHCP/None/None
- **Distribution:** North America and South America
- **Habitat:** Riparian, scrub, grasslands, agriculture, and disturbed
- **Occurrence in Water Service Area:** Soaring over the water service area
- **Year Documented:** 2020

Western Yellow-Billed Cuckoo (Coccyzus americanus occidentalis)

- **Status:** MSHCP/CE/FT
- **Distribution:** California
- **Habitat:** Riparian forest
- **Occurrence in Water Service Area:** Riparian forest habitat in the Santa Ana River corridor in the northwestern portion of the water service area
- **Year Documented:** 2011

White-Faced Ibis (Plegadis chihi)

- **Status:** MSHCP/WL/None
- **Distribution:** United States, southern Canada, Mexico, Central American, and South America
- **Habitat:** Freshwater wetlands and marshes
- **Occurrence in Water Service Area:** Marsh and wetland habitat in the Santa Ana River corridor in the northwestern portion of the water service area
- **Year Documented:** 2019

White-Tailed Kite (Elanus leucurus)

- **Status:** MSHCP/CFP/None
- **Distribution:** United States, Mexico, Central American, and South America
- **Habitat:** Nesting – woodlands; foraging – grasslands and agriculture land
- **Occurrence in Water Service Area:** Documented in the Santa Ana River corridor in the northern portion of the water service area and flying over developed areas
- **Year Documented:** 2019

Yellow-Breasted Chat (Icteria virens)

- **Status:** MSHCP/SSC/None
- **Distribution:** Throughout the United States, Mexico, Central America, and southern Canada
- **Habitat:** Riparian forest and riparian scrub
- **Occurrence in Water Service Area:** Riparian forest habitat north of the Santa Ana River and west of River Road in the northern portion of the water service area
- **Year Documented:** 2020

Yellow Warbler (Setophaga petechia)

- **Status:** MSHCP/SSC/None
- **Distribution:** Breeding – United States and Canada; winter: Mexico, Central, and South America
- **Habitat:** Riparian forest, riparian scrub, and montane scrub
- **Occurrence in Water Service Area:** Riparian habitat adjacent to the Santa Ana River in the northern portion of the water service area
- **Year Documented:** 2019

Mammals

Bobcat (Lynx rufus)

- **Status:** MSHCP/None/None
- **Distribution:** United States, northern Mexico, and southern Canada
- **Habitat:** Chaparral, forest, grassland, riparian, and sage scrub
- **Occurrence in Water Service Area:** Riparian and disturbed habitat north of the Santa Ana River and west of River Road in the northern portion of the water service area
- **Year Documented:** 2017

Coyote (Canis latrans)

- **Status:** MSHCP/None/None
- **Distribution:** United States, Mexico, and Canada
- **Habitat:** Riparian, chaparral, grassland, and sage scrub

- **Occurrence in Water Service Area:** Riparian habitat in the northwestern portion of the water service area
- **Year Documented:** 2020

Northwestern San Diego Pocket Mouse (Chaetodipus fallax fallax)

- **Status:** MSHCP/SSC/None
- **Distribution:** Southern California and Mexico
- **Habitat:** Chaparral, desert scrub, grassland, forests, riparian scrub, and sage scrub; requires low-growing vegetation or rocky outcroppings and sandy soils for burrowing
- **Occurrence in Water Service Area:** Northern portion of the water service area
- **Year Documented:** 2001

Pocket Free-Tailed Bat (Lasiurus xanthinus)

- **Status:** MSHCP/SSC/None
- **Distribution:** Southern California, southern Arizona, southern New Mexico, southwestern Texas, and western Mexico
- **Habitat:** Desert scrub, desert wash, Joshua tree scrub, riparian forest, riparian scrub, palm oasis, and pinyon-juniper woodlands
- **Occurrence in Water Service Area:** City of Corona
- **Year Documented:** 1986

Stephens' Kangaroo Rat (Dipodomys stephensi)

- **Status:** MSHCP/ST/FE
- **Distribution:** Southern California
- **Habitat:** Open chaparral, open grassland, and open sage scrub; prefers open habitats with less than 50 percent vegetative cover; requires soft, well-drained substrate for building burrows and is typically found in areas with sandy soil
- **Occurrence in Water Service Area:** City of Corona
- **Year Documented:** 1993

Western Yellow Bat (Lasiurus xanthinus)

- **Status:** MSHCP/SSC/None
- **Distribution:** California
- **Habitat:** Desert wash, palm oasis, and riparian; needs access to water for foraging
- **Occurrence in Water Service Area:** Riparian habitat adjacent to the Santa Ana River in the northern portion of the water service area
- **Year Documented:** 1999

3.5.3 Critical Habitat

The USFWS designates critical habitat for listed endangered or threatened species of plants and animals. Critical habitat is defined in the federal Endangered Species Act (FESA) as habitat deemed essential to the survival of a federally listed species.

Four animal species designated as federally endangered (FE) or federally threatened (FT) have designated critical habitat mapped in the water service area (Figure 8, Critical Habitat) (USFWS 2020c). The four species are listed below:

- Bird species
  - Coastal California gnatcatcher (*Polioptila californica californica*) (FT)
  - Least Bell's vireo (FE)
  - Southwestern willow flycatcher (*Empidonax traillii extimus*) (FE)
- Fish species
  - Santa Ana sucker (*Catostomus santaanae*) (FT)

3.5.4 Nesting Birds

The water service area contains nesting habitat for several bird species, including raptors, protected under the CFG Code and Migratory Bird Treaty Act (MBTA). The highest quality habitat for nesting birds in the water service area is the Santa Ana River riparian corridor in the northern portion of the area. The projects proposed in developed/disturbed land and the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline projects proposed in undeveloped, non-native grassland vegetation are adjacent to trees and shrubs that provide potential nesting habitat.

3.6 Wildlife Corridors and Linkages

Wildlife corridors and linkages are defined by the CDFW as areas that connect suitable animal habitat areas in a region otherwise fragmented by rugged terrain, changes in vegetation, or human disturbance (CDFW 2014). Natural features such as canyon drainages, ridgelines, or undeveloped areas with vegetation can provide corridors for animals. Wildlife corridors are important because they provide access to food, water, and mates; allow dispersal of individuals away from high population densities; and facilitate the exchange of genetic material between populations.

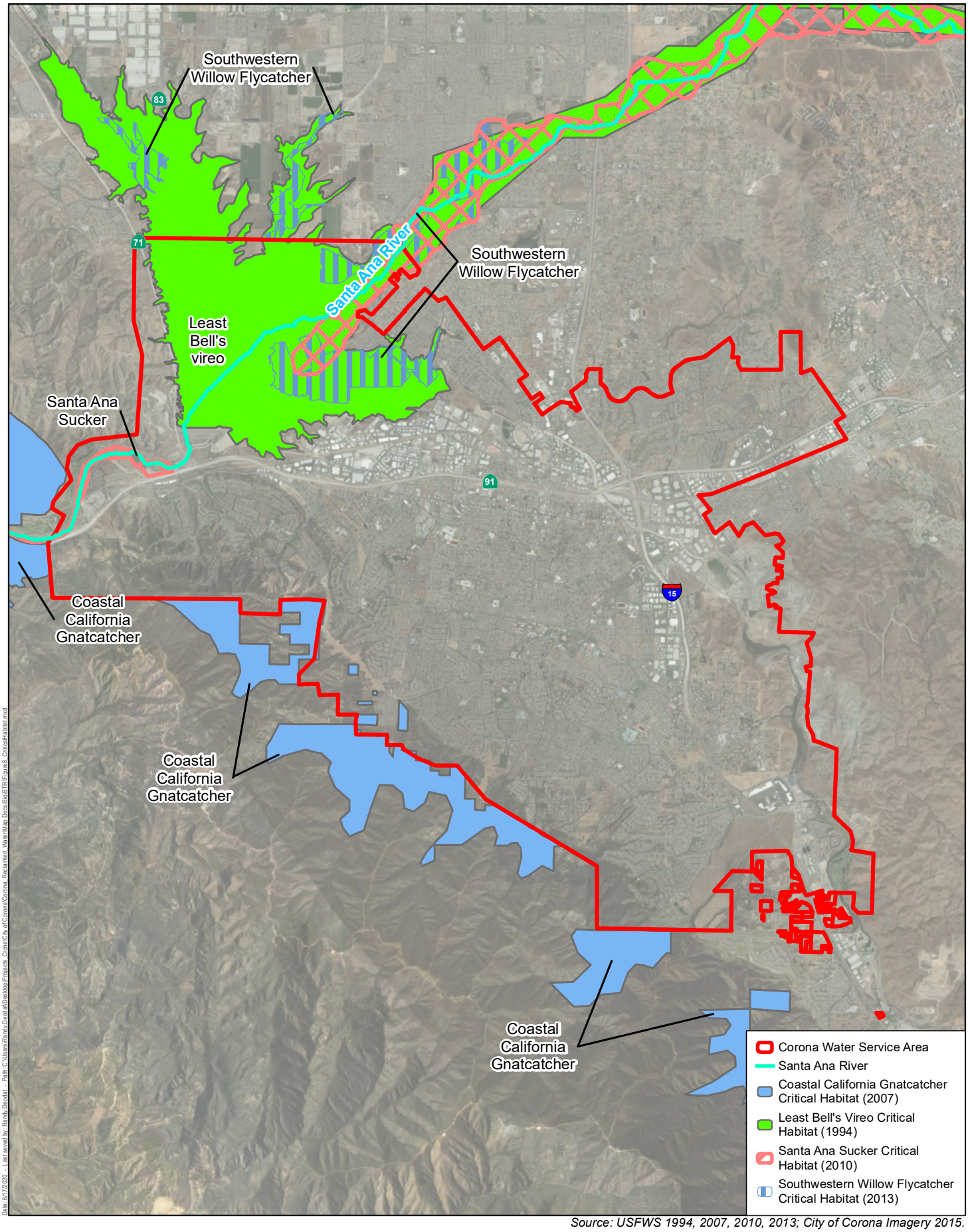
The Santa Ana River and surrounding riparian vegetation is an important wildlife corridor in the Counties of Riverside and Orange. The Santa Ana Mountains on the western side of the water service area are also an important wildlife corridor (County of Riverside 2003).

During the site visit, the biologists assessed areas identified in the Western Riverside County MSHCP in the water service area for potential wildlife corridor functions. Potential wildlife

corridors can include streams, riparian areas, and culverts under roadways. Habitat characteristics considered included topography, habitat quality, and adjacent land uses. In addition to reviewing the water service area for presence of continuous corridors, biologists also reviewed the water service area where critical habitat has been identified for potential dispersal corridors for coastal California gnatcatcher, least Bell's vireo, and southwestern willow flycatcher based on habitat type and quality, size of habitat patches, and distance separating habitat patches (Figure 8). The Santa Ana River and associated floodplain occupy the land in the northern portion of the water service area. The Santa Ana River functions to facilitate amphibian, bird, and large mammal movement in the local area. The river provides habitat for both common and sensitive species, including least Bell's vireo and southwestern willow flycatcher.

The northern portion of the water service area is likely to be used as a wildlife corridor because of its proximity to the Santa Ana River and associated riparian corridor and open hills and mountains to the southwest and the presence of native vegetation communities. Although the presence of dense urban development throughout the water service area is likely to impede animal movement outside of the Santa Ana River corridor, the northern portion of the water service area has been designated as an important habitat connectivity area along the Santa Ana River.

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Source: USFWS 1994, 2007, 2010, 2013; City of Corona Imagery 2015.

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Miles

Figure 8

Critical Habitat

City of Corona 2018 Reclaimed Water Master Plan

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Section 4 Regional Context and Applicable Regulations

Biological resources in the water service area are subject to regulatory administration by the federal government and State of California. The federal government administers nonmarine plant- and animal-related issues through the USFWS, while waters of the United States issues are administered by the USACE. California law relating to wetland, water-related, and animal issues is administered by the CDFW. Under CEQA, impacts associated with a proposed project or program are assessed with regard to significance criteria determined by the CEQA lead agency, which, for the project, is the City, pursuant to CEQA Guidelines. Biological resources-related laws and regulations that apply to the project include FESA, the MBTA, the CWA, CEQA, the California Endangered Species Act (CESA), and the CFG Code.

4.1 Federal Regulations

4.1.1 Federal Clean Water Act (U.S. Code, Title 33, Sections 1251 through 1376)

The CWA provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters. Section 401 requires a project operator to obtain a federal license or permit that allows activities resulting in a discharge to waters of the United States to obtain state certification, thereby ensuring that the discharge will comply with provisions of the CWA. The RWQCB administers the certification program in California. Section 402 establishes a permitting system for the discharge of any pollutant (except dredged or fill material) into waters of the United States. Section 404 establishes a permit program administered by the USACE that regulates the discharge of dredged or fill material into waters of the United States, including wetlands. The USACE implementing regulations are found at the Code of Federal Regulations, Title 33, Parts 320 and 330. Guidelines for implementation are referred to as the "Section 404(b)(1) Guidelines," which were developed by the U.S. Environmental Protection Agency in conjunction with the USACE (40 CFR 230). These guidelines allow the discharge of dredged or fill material into the aquatic system only if there is no practicable alternative that would have less adverse impacts.

4.1.2 Federal Endangered Species Act (U.S. Code, Title 16, Sections 1531 through 1543)

FESA and subsequent amendments provide guidance for the conservation of endangered and threatened species and the ecosystems on which they depend. In addition, FESA defines species as threatened or endangered and provides regulatory protection for listed species. FESA also provides a program for the conservation and recovery of threatened and endangered species and the conservation of designated critical habitat that the USFWS determines to be required for the survival and recovery of these listed species.

Section 7 of FESA requires federal agencies, in consultation with the Secretary of the Interior or the Secretary of Commerce, to ensure that actions the federal agencies authorize, fund, or carry

out are not likely to jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of critical habitat for these species. The USFWS and National Marine Fisheries Service share responsibilities for administering FESA. Regulations governing interagency cooperation under Section 7 are found in California Code of Regulations, Title 50, Part 402. The opinion issued at the conclusion of consultation will include a statement authorizing "take" (e.g., to harass, harm, pursue, hunt, wound, kill) that may occur incidentally to an otherwise legal activity.

Section 9 lists those actions that are prohibited under FESA. Although take of a listed species is prohibited, it is allowed when it is incidental to an otherwise legal activity. Section 9 prohibits take of listed species of fish, wildlife, and plants without special exemption. The definition of "harm" includes significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns related to breeding, feeding, or shelter. "Harass" is defined as actions that create the likelihood of injury to listed species by significantly disrupting normal behavioral patterns related to breeding, feeding, and shelter.

Section 10 provides a means whereby a nonfederal action with the potential to result in take of a listed species can be allowed under an incidental take permit. Application procedures are found in the Code of Federal Regulations, Title 50, Parts 13 and 17, for species under the jurisdiction of the USFWS and the Code of Federal Regulations, Title 50, Parts 217, 220, and 222, for species under the jurisdiction of the National Marine Fisheries Service.

4.1.3 Migratory Bird Treaty Act (U.S. Code, Title 16, Sections 703 through 711)

The MBTA is the domestic law that affirms or implements a commitment by the United States to four international conventions (with Canada, Mexico, Japan, and Russia) for the protection of a shared migratory bird resource. The MBTA makes it unlawful at any time, by any means, or in any manner to pursue, hunt, take, capture, or kill migratory birds. The act also applies to the removal of nests occupied by migratory birds during the nesting season. The MBTA makes it unlawful to take, pursue, molest, or disturb these species, their nests, or their eggs anywhere in the United States.

4.1.4 Wetlands and Other Waters of the United States

Aquatic resources, including riparian areas, wetlands, and certain aquatic vegetation communities, are considered sensitive biological resources and can fall under the jurisdiction of several regulatory agencies. The USACE exerts jurisdiction over waters of the United States, including waters that are subject to the ebb and flow of the tide; wetlands and other waters such as lakes, rivers, streams (including intermittent or ephemeral streams), mudflats, sandflats, sloughs, prairie potholes, vernal pools, wet meadows, playa lakes, or natural ponds; and tributaries of the previously mentioned features. The extent of waters of the United States is generally defined as

the portion that falls within the limits of the ordinary high water mark. Typically, the ordinary high water mark corresponds to the 5- to 7-year flood event.

Wetlands, including swamps, bogs, seasonal wetlands, seeps, marshes, and similar areas, are defined by the USACE as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3[b]; 40 CFR 230.3[t]). Indicators of three wetland parameters (i.e., hydric soils, hydrophytic vegetation, and wetlands hydrology), as determined by field investigation, must be present for a site to be classified as a wetland by the USACE (USACE 1987).

4.2 State of California Regulations

4.2.1 California Endangered Species Act (California Fish and Game Code, Sections 2050 et seq.)

CESA establishes the policy of the state to conserve, protect, restore, and enhance threatened or endangered species and their habitats. CESA mandates that state agencies should not approve projects that would jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. There are no state agency consultation procedures under CESA. For projects that would affect a listed species under both CESA and FESA, compliance with FESA would satisfy CESA if the CDFW determines that the federal incidental take authorization is consistent with CESA under CFG Code, Section 2080.1. For projects that would result in take of a species only listed under CESA, the project operator would need to apply for a take permit under Section 2081(b).

4.2.2 California Environmental Quality Act Guidelines, Section 15380

Although threatened and endangered species are protected by specific federal and state statutes, CEQA Guidelines, Section 15380(b), provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definition in FESA and Sections 2050 through 2059.26 of the CFG Code dealing with rare or endangered plants or animals. This section was included in CEQA primarily to deal with situations in which a public agency is reviewing a project that may have a significant effect on, for example, a candidate species that has not been listed by either the USFWS or CDFW. Thus, CEQA provides an agency with the ability to protect a species from the potential impacts of a project until the respective government agencies have an opportunity to designate the species as protected, if warranted. CEQA also calls for the protection of other locally or regionally significant resources, including natural communities. Although natural communities do not currently have legal protection of any kind, CEQA calls for an assessment of whether any such resources would be affected and requires findings of significance if there would be substantial losses. Natural communities listed as sensitive by the

California Natural Diversity Database are considered by the CDFW to be significant resources and fall under the CEQA Guidelines to address impacts. Local planning documents, such as General Plans, often identify these resources as well.

4.2.3 California Fish and Game Code, Section 1602

Under this section of the California Fish and Game Code, the project operator is required to notify the CDFW before the start of any project that would divert, obstruct, or change the natural flow, bed, channel, or bank of any river, stream, or lake. Pursuant to the code, a "stream" is defined as a body of water that flows at least periodically, or intermittently, through a bed or channel that has banks and supports fish or other aquatic life. Based on this definition, a watercourse with surface or subsurface flows that supports or has supported riparian vegetation is a stream and is subject to CDFW jurisdiction. Altered or artificial watercourses valuable to fish and animals are subject to CDFW jurisdiction. The CDFW also has jurisdiction over dry washes that carry water during storm events.

Preliminary notification and project review generally occur during the environmental process. When an existing fish or animal resource may be substantially adversely affected, the CDFW is required to propose reasonable project changes to protect the resource. These modifications are formalized in a streambed alteration agreement, which becomes part of the plans, specifications, and bid documents for the project.

4.2.4 California Fish and Game Code, Sections 2080 and 2081

Section 2080 of the CFG Code states that "no person shall import into this state [California], export out of this state, or take, possess, purchase, or sell within this state, any species, or any part or product thereof, that the Commission [California Fish and Game Commission] determines to be an endangered species or threatened species, or attempt any of those acts, except as otherwise provided in this chapter, or the Native Plant Protection Act, or the California Desert Native Plants Act." Pursuant to Section 2081 of the code, the CDFW may authorize individuals or public agencies to import, export, take, or possess state-listed endangered, threatened, or candidate species. These otherwise prohibited acts may be authorized through permits or memoranda of understanding if the take is incidental to an otherwise lawful activity, impacts of the authorized take are minimized and fully mitigated, the permit is consistent with any regulations adopted pursuant to any recovery plan for the species, and the project operator ensures adequate funding to implement the measures required by the CDFW. The CDFW makes this determination based on available scientific information and considers the ability of the species to survive and reproduce.

4.2.5 California Fish and Game Code, Sections 3503, 3503.5, 3513, and 3800

Section 3503 of the CFG Code states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 specifically states that it is unlawful to take, possess, or destroy any raptor (i.e., species in the orders Falconiformes and Strigiformes), including nests or

eggs. Typical violations of this code include destruction of active nests resulting from removal of vegetation in which the nests are located. Violation of Section 3503.5 could also include failure of active raptor nests resulting from disturbance of nesting pairs by nearby project construction. This statute does not provide for the issuance of any type of incidental take permit.

Section 3513 of the CFG Code upholds the MBTA by prohibiting any take or possession of birds that are designated by the MBTA as migratory nongame birds except as allowed by federal rules and regulations promulgated pursuant to the MBTA.

Section 3800 of the CFG Code affords protection to nongame birds, which are birds occurring naturally in California that are not resident game birds, migratory game birds, or fully protected birds.

4.2.6 California Fish and Game Code, Sections 3511, 4700, 5050, and 5515

California fully protected species are described in Sections 3511, 4700, 5050, and 5515 of the CFG Code. These statutes prohibit take or possession of fully protected species. The CDFW is unable to authorize incidental take of fully protected species when activities are proposed in areas inhabited by these species.

4.2.7 California Wetland Definition

Unlike the federal government, California has adopted the Cowardin et al. (1992) definition of "wetlands." For this classification, wetlands must have one or more of the following three attributes: (1) at least periodically, the land supports predominantly hydrophytes (at least 50 percent of the aerial vegetative cover); (2) the substrate is predominantly undrained hydric soil; and (3) the substrate is non-soil and saturated with water or covered by shallow water at some time during the growing season of each year.

Under normal circumstances, the federal definition of wetlands requires all three wetland identification parameters to be met, whereas the Cowardin et al. (1992) definition requires the presence of at least one of these parameters. For this reason, identification of wetlands by state agencies consists of the union of all areas that are periodically inundated or saturated or in which at least seasonal dominance by hydrophytes may be documented or in which hydric soils are present.

4.2.8 Native Plant Protection Act (California Fish and Game Code, Sections 1900 through 1913)

California's Native Plant Protection Act requires state agencies to use their authority to carry out programs to conserve endangered and rare native plants. Provisions of the act prohibit the take of listed plants from the wild and require notification to the CDFW at least 10 days in advance of any change in land use. This allows the CDFW to salvage listed plant species that would otherwise be destroyed. The project operator is required to conduct botanical inventories and consult with the

CDFW during project planning to comply with the provisions of this act and sections of CEQA that apply to rare or endangered plants.

4.2.9 Natural Community Conservation Planning Act

The Natural Community Conservation Planning (NCCP) program is a cooperative effort to protect habitats and species. It began under the state's NCCP Act of 1991, legislation that is broader in its orientation and objectives than CESA or FESA. These laws are designed to identify and protect individual species that have already declined significantly in number. The act and the associated Southern California Coastal Sage Scrub NCCP Process Guidelines (1993), Southern California Coastal Sage Scrub NCCP Conservation Guidelines (1993), and NCCP General Process Guidelines (1998) have been superseded by the NCCP Act of 2003, which was subsequently amended in 2003, 2011, 2012, and 2016.

The primary objective of the NCCP program is to conserve natural communities at the ecosystem level while accommodating compatible land use. The program seeks to anticipate and prevent the controversies and gridlock caused by species' listings by focusing on the long-term stability of animal and vegetation communities and including key interests in the process.

This voluntary program allows the state to enter into planning agreements with landowners, local governments, and other stakeholders to prepare plans that identify the most important areas for a threatened or endangered species, and the areas that may be less important. These NCCP plans may become the basis for a state permit to take threatened and endangered species in exchange for conserving their habitat. The CDFW and USFWS worked to combine the NCCP program with the federal Habitat Conservation Plan (HCP) process to provide take permits for state and federally listed species. Under the NCCP Act, local governments, such as the City, can take the lead in developing these NCCP plans and become the recipients of state and federal take permits.

4.2.10 Porter-Cologne Water Quality Control Act

The State Water Resources Control Board works in coordination with the nine RWQCBs to preserve, protect, enhance, and restore water quality. Each RWQCB makes decisions related to water quality for its region and may approve, with or without conditions, or deny projects that could affect waters of the state. Their authority comes from the CWA and the state's Porter-Cologne Act. The Porter-Cologne Act broadly defines waters of the state as "any surface water or groundwater, including saline waters, within the boundaries of the state" (California Water Code, Section 13050[e]). Because the Porter-Cologne Act applies to any water, whereas the CWA applies only to certain waters, California's jurisdictional reach overlaps and may exceed the boundaries of waters of the United States. For example, Water Quality Order No. 2004-0004-DWQ states that "shallow" waters of the state include headwaters, wetlands, and riparian areas. Moreover, in practice, the RWQCBs claim jurisdiction over riparian areas. Where riparian habitat is not present, which may be the case in headwaters, jurisdiction is taken to the top of bank.

Under the Porter-Cologne Act, the State Water Resources Control Board and the nine RWQCBs also have the responsibility of granting CWA National Pollutant Discharge Elimination System permits and waste discharge requirements for certain point-source and nonpoint-source discharges to waters. These regulations limit impacts on aquatic and riparian habitats from a variety of urban sources.

4.3 Local Regulations

4.3.1 City of Corona 2020–2040 General Plan

The following goals and policies in the City of Corona 2020–2040 General Plan (City of Corona 2020b) as it relates to biological resources.

Environmental Resources Element

Goal ER-4. Proper management of floodplain and riparian areas for their importance to wildlife habitat, unique and sensitive plant life, water recharge, and public health and safety.

Policy ER-4.1. Require urban uses to have a sufficient distance from a floodway boundary to ensure adequate protection of life, property, and habitat values.

Policy ER-4.2. Avoid altering floodways or channelization wherever possible; however, limit alterations to those that meet the following criteria:

- Alterations necessary for the protection of public health and safety only after all other options are exhausted
- Alterations essential to public service projects where no other feasible construction method or alternative project location exists
- Projects where the primary function is the improvement of fish and wildlife habitats

Policy ER-4.3. Design alterations and improvements to floodways so that they avoid adverse environmental effects to the maximum extent feasible, considering the following environmental factors:

- Stream scour
- Erosion protection and sedimentation
- Wildlife habitat and linkages
- Groundwater recharge capability
- Adjacent property
- Natural designs (e.g., soft riparian bottoms and gentle bank slopes, and landscaping with native plants)

Policy ER-4.4. Preserve and enhance existing native riparian habitat and prevent obstruction of natural watercourses to the extent feasible in new private and public developments or implement on-site replacement as mitigation.

Policy ER-4.5. Allow variances from city development standards on land area restricted from development due to its retention as a natural floodway, floodplain, or watercourse to encourage the preservation of natural watercourses without creating undue hardship on property owners.

Goal ER-5. Preservation and protection of natural and man-made wetlands from development impacts for their importance to wildlife habitat, unique and sensitive plant life, water recharge, and scenic value.

Policy ER-5.1. Prohibit encroachment of development into wetlands; provide buffer zones, setbacks, or other effective techniques in project siting and design to minimize direct and indirect effects to wetland habitats.

Policy ER-5.2. During the development review process, ensure compliance with the Clean Water Act's Section 404 in terms of wetlands mitigation policies and policies concerning fill material in jurisdictional wetlands.

Policy ER-5.3. Ensure compliance with habitat mitigation plans accepted by the applicable state and federal regulatory agencies that meet established ratios for wetland enhancement/restoration and on-/off-site compensation for the loss of wetland functions and values.

Policy ER-5.4. Consider wetlands for use as natural water treatment areas that will result in improvement of water quality.

Policy ER-5.5. Prohibit the planting of invasive, nonnative species in areas that would encroach and affect watercourses, their banks, and riparian areas.

Goal ER-6. Protection, enhancement, and sustaining of significant plant and wildlife species and habitat that exists in Corona and its Planning Area, for the long-term benefit of the natural environment and Corona residents and visitors.

Policy ER-6.1. Support the rehabilitation and enhancement the biological diversity and integrity of the City's natural resources through such means as vegetation restoration, control of alien plants and animals, landscape buffering, and natural watercourse channel restoration.

Policy ER-6.2. Preserve the wildlife and plant species and habitats listed in Tables 4-12 and 4-13 of the Technical Background Report for the General Plan and EIR [Environmental Impact Report] and those that may be considered by the City of Corona in the future.

Policy ER-6.3. Ensure that new developments and circulation improvements demonstrate compliance with state and federal regulations concerning the status, location, and condition of significant and sensitive biological species and habitats and riparian and riverine corridors. Biological surveys, as required and defined by the Western Riverside County Multiple Species

Habitat Conservation Plan, should identify potential impacts on biological resources and include mitigation measures to protect/replace resources in like kind.

Policy ER-6.4. Ensure that new developments through the development review process adhere to the Western Riverside County Multiple Species Habitat Conservation Plan, the Stephens' Kangaroo Rat Habitat Conservation Plan, and other habitat plans as appropriate to conserve biological diversity through protection of natural communities.

Policy ER-6.5. Preserve wildlife habitat of significant natural open space areas, including expanding habitat ranges, movement corridors, and nesting sites by adhering to and implementing the core biological linkages identified in the MSHCP for parts of the Temescal Canyon Area Plan in the City. Any proposed recreational use of those areas such as trails shall be designed to not interfere with the preservation efforts established in the MSHCP.

Goal ER-7. Adequate protection of biological resources and increased public awareness of their value to the community.

Policy ER-7.1. Require that public and private construction activities be conducted in a manner to minimize adverse impacts on natural resources and biological resources in proximity to MSHCP conservation areas and adhere to the MSHCP Guidelines pertaining to Urban/Wildlife Interface for drainage, toxics, lighting, noise, invasive barriers and grading [MSHCP Section 6.1.4].

Policy ER-7.2. Allow for publicly accessible sites that facilitate observation of natural resources in Corona and its sphere without compromising environmental quality.

Policy ER-7.3. Promote education programs and materials prepared by the Western Riverside County Regional Conservation Authority, Riverside-Corona Resource Conservation District, and other entities that promote awareness of biological resources conservation.

Goal ER-8. Protection of forest and vegetation resources in the City of Corona.

Policy ER-8.1. Cooperate with federal and state agencies to achieve the sustainable conservation of forest lands as a means of providing open space and protecting natural resources and MSHCP habitat.

Policy ER-8.2. Support conservation programs to reforest privately held forest lands.

Policy ER-8.3. Work with Riverside County to update the Vegetation Map for Corona and the SOI [sphere of influence] areas in cooperation with the California Department of Fish and Wildlife, the Natural Diversity Data Base, the United States Forest Service, and other knowledgeable agencies.

Policy ER-8.4. Maintain and conserve superior examples of native trees (including oak trees), natural vegetation, stands of established trees, and other features for aesthetic and water conservation purposes.

Policy ER-8.5. Conserve the oak tree resources in the City to the extent feasible.

Goal ER-9. Protection of regional washes and waterways and their use for recreational and open space purposes such as trails, habitat preservation, and groundwater recharge.

Policy ER-9.1. Protect sensitive biological resources in the Temescal Canyon Area Plan through adherence to policies in the Western Riverside County MSHCP.

Policy ER-9.2. Conserve existing wetlands and wetland functions and values in the Temescal Canyon Wash, Prado Basin, and the Santa Ana River with a focus on conservation of existing riparian, woodland, coastal sage scrub, alluvial fan scrub, and open water habitats.

Policy ER-9.3. Conserve existing known populations of least Bell's vireo and southwestern willow flycatcher within the Temescal Canyon Area Plan including locations at Prado Basin, Santa Ana River, and Temescal Wash. Maintain existing breeding habitat for these species at Prado Basin, Santa Ana River, and Temescal Wash where applicable to a particular project and location.

Policy ER-9.4. Conserve and manage suitable habitat for species known to exist in the Temescal Canyon Area Plan of Western Riverside County's Multiple Species Habitat Conservation Plan.

Policy ER-9.5. Conserve clay soils supporting sensitive plant species known to occur in the Temescal Canyon area, including Munz's onion, Palmer's grappling hook, small-flowered morning glory, long-spined spineflower, thread-leaved brodiaea, small-flowered microseris, and many-stemmed dudleya.

Policy ER-9.6. Conserve sandy soils co-occurring with chaparral supporting Palomar monkeyflower, known to occur in the Temescal Canyon area.

Policy ER-9.7. Conserve locations supporting California muhly, heart-lived pitcher sage, Hall's monardella, and other sensitive plant species that may occur in a wide variety of habitat types within the Temescal Canyon Area Plan.

Policy ER-9.8. Provide for and maintain connection(s) from the Cleveland National Forest to Prado Basin and the Santa Ana River within Temescal Canyon, providing opportunities for offsite connections to Chino Hills State Park.

Policy ER-9.9. Conserve upland habitat adjacent to Temescal Wash to augment existing upland habitat conservation in the Lake Matthews/Estelle Mountain Reserve areas and provide for contiguous connection of upland habitat blocks from the existing reserve to Temescal Wash.

Habitat conservation should focus on blocks of existing upland habitat east of Temescal Wash connecting to Lake Matthews/Estelle Mountain Reserve.

Policy ER-9.10. Conserve floodplain areas supporting sensitive plant species known to occur in Temescal Canyon, including Parry's spineflower, peninsular spineflower, and smooth tarplant, and Coulter's matilija poppy.

Policy ER-9.11. Conserve rocky soils co-occurring with coastal sage scrub, peninsular jumper, or chaparral supporting Payson's jewelflower, known to occur in the Temescal Canyon area.

Policy ER-9.12. Provide for and maintain a continuous linkage along Temescal Wash from the southern boundary of the Temescal Canyon area to the Santa Ana River.

4.3.2 Western Riverside County Multiple Species Habitat Conservation Plan

The Western Riverside County MSHCP is a comprehensive, multi-jurisdictional plan that addresses biological and ecological diversity by conserving species and associated habitats while allowing approval of development in Western Riverside County (County of Riverside 2003). It is administered by the Western Riverside County Regional Conservation Authority.

The MSHCP functions as an HCP pursuant to Section 10(a)(1)(B) of FESA and as an NCCP pursuant to California's NCCP Act. The MSHCP provides a framework for the USFWS and CDFW to grant take authorization (i.e., Incidental Take Permits) for species covered by the MSHCP that are FESA or CESA listed as threatened or endangered; take of these species without a permit would be unlawful.

The MSHCP covers 146 species, not all of which are FESA or CESA listed. However, mitigation for impacts to listed and non-listed species may be required pursuant to CEQA or other regulatory processes, and the MSHCP Conservation Area provides an avenue for this mitigation. Furthermore, should any of the non-listed covered species be subsequently FESA or CESA listed, take authorization may be granted through the MSHCP framework.

The MSHCP was approved and permits were issued by the USFWS and CDFW in 2004. The MSHCP Plan Area encompasses approximately 1.26 million acres (approximately 1,967 square miles) in Western Riverside County and addresses 146 sensitive plant and animal species and the vegetation communities on which they depend. In total, 14 animal species and 11 plant species are designated by the USFWS as federally listed under FESA. Several of these species also have federally designated critical habitat within the MSHCP jurisdiction (USFWS 2020c). The MSHCP encompasses the City and many other city, county, and state entities. It should be noted that the listing status of plants and animals may change over time, with species added or removed from listing. This Biological Resources Technical Report prepared for the project describes the species used to define the original planning subunits.

The MSHCP originally set a target Conservation Area of 500,000 acres for Western Riverside County that included the following: (1) conservation of existing publicly owned lands; (2) voluntary acquisition of privately held lands by the cities, the County, or other involved agencies; (3) voluntary acquisition of privately held lands by state or federal agencies; and (4) contribution from public and private development. The Implementing Agreement for the MSHCP between the City and other appropriate implementing agencies outlined a strategy for assembling the 500,000-acre MSHCP Conservation Area. Local implementing agencies would be responsible for contributing approximately 97,000 acres of Additional Reserve Lands through the development review process. If it is determined that all or a portion of a property is needed for inclusion as Additional Reserve Lands, various incentives may be available to the property owner in lieu of, or in addition to, monetary compensation in exchange for conveyance of property interest, such as development rights.

Approval of the MSHCP and execution of the Implementing Agreement by the USFWS and CDFW allows the agencies to issue take authorizations, including the City. Issue of take authorization to the City would allow implementation of land use decisions consistent with the MSHCP without project-by-project review and permitting by the USFWS and CDFW

Section 5 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a significant impact related to would occur if the project would (CEQA Guidelines, Section 15000 et seq.):

1. Have a substantial adverse effect, either directly or through habitat modifications, on any plant 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
2. Have a substantial adverse effect, either directly or through habitat modifications, on any animal 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
3. 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
4. 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
5. 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
6. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance
7. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

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Section 6 Impacts

This section evaluates potential impacts to biological resources from implementation of the projects identified in the 2018 RWMP. As discussed in Section 1.1, Project Description, the analysis of impacts to biological resources are addressed by project. The proposed improvements and 2018 RWMP projects are presented on Figures 3a through 3d and described in Section 1.1.

6.1 Direct Impacts

Direct impacts to biological resources include temporary and permanent impacts to upland vegetation, wetlands, and non-vegetated channels. Potential direct impacts include temporary and permanent impacts to vegetation that could support sensitive plant species, sensitive animal species, nesting birds, and wildlife corridors and linkages. Potential direct impacts include impacts to water quality. Potential direct impacts also include impacts to local policies and ordinances and regional conservation planning. Direct impacts are presented in the following subsections.

Implementation of the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline could impact sensitive vegetation.

6.1.1 Riparian Habitat or Other Sensitive Vegetation Community

The WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline are proposed in undeveloped non-native grassland vegetation. The WRCRWA Transmission Pipeline is proposed adjacent to undeveloped land, riparian forest, and the Santa Ana River. The WRCRWA Transmission Pipeline was previously evaluated under CEQA in the 2016 Proposition 1 IS/MND (City of Corona 2016). No further analysis of this project is required or provided in this report.

Potentially significant impacts to one sensitive vegetation community, non-native grassland, could result during the implementation of the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites.

Impacts to non-native grassland totaling less than 0.10 acre per construction phase would not be considered significant and would not require mitigation under CEQA because the small size of the impact would not be considered a substantial adverse effect. Exceptions to the previously described thresholds would be for projects impacting habitat occupied by federally or state-listed endangered or threatened species, which would be considered significant regardless of the acreage impacted.

No other direct impacts to sensitive vegetation communities would result from implementation of the remaining projects.

6.1.2 Sensitive Plant Species

Sensitive plant species have been documented in the water service area. Implementation of the projects located in developed/disturbed land would not impact sensitive plant species. Although the likelihood is low, implementation of some projects in undeveloped areas have the potential to impact sensitive plant species. The WRCRWA Booster Pump Station, WRCRWA Transmission Pipeline, WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline projects are proposed on undeveloped sites that may contain sensitive plant species. The WRCRWA Booster Pump Station and WRCRWA Transmission Pipeline projects were previously evaluated under CEQA in the 2016 Proposition 1 IS/MND (City of Corona 2016). No further analysis of these projects is required or provided in this report.

The WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites contain non-native grassland habitat that could support sensitive plant species. Impacts to non-native grassland habitat that could support sensitive plant species on the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites would be potentially significant.

6.1.3 Sensitive Animal Species

In total, 45 sensitive animal species have been documented in the water service area. Sensitive animal species have been documented in undeveloped areas near the WRCRWA Transmission Pipeline, WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites. The undeveloped areas on these project sites may contain sensitive animal species. The majority of sensitive animal species, including least Bell's vireo and tricolored blackbird (Agelaius tricolor), occur in the Santa Ana River floodplain adjacent to the WRCRWA Transmission Pipeline, which was previously evaluated under CEQA in the 2016 Proposition 1 IS/MND (City of Corona 2016). No further analysis of this project is required or provided in this report. None of the other projects identified in the 2018 RWMP have the potential to impact least Bell's vireo or tricolored blackbird. Therefore, impacts would not occur to these species as a result of project implementation.

Non-native grassland vegetation on the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites has the potential to support sensitive animal species. A query requested in the Riverside County Integrated Project Conservation Summary Report Generator found that the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites contain potentially suitable habitat for burrowing owl. Based on habitat requirements and the availability and quality of the habitats on site, it was determined that the burrowing owl is presumed to have a low likelihood of occurring due to the lack of suitable habitat and existing development and disturbance. The conservation goals of the Western Riverside County MSHCP require that burrowing owl remain absent from the project sites. If burrowing owl were found on the

WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites, a potential impact would occur.

6.1.3.1 Nesting Birds

Federal- and state-protected nesting birds have the potential to occur on or adjacent to the projects, including projects in developed/disturbed land. Implementation of the projects would have the potential to impact nesting birds (including raptors) through direct removal of nesting habitat and through disturbance to nesting birds from substantial sources of noise generated at the start of new construction during the nesting season. Construction activities that begin during the raptor nesting season and general bird nesting season (January 15 through September 15) would have the potential to significantly impact nesting birds protected under the MBTA and CFG Code.

6.1.3.2 Critical Habitat

Critical habitat for least Bell's vireo, southwestern willow flycatcher, and Santa Ana sucker primarily occurs in the Santa Ana River floodplain adjacent to the WRCRWA Transmission Pipeline, which was previously evaluated under CEQA in the 2016 Proposition 1 IS/MND (City of Corona 2016) (Figure 8). No further analysis of this project is required or provided in this report. No other projects identified in the 2018 RWMP have the potential to impact critical habitat for least Bell's vireo, southwestern willow flycatcher, or Santa Ana sucker. The majority of the critical habitat for coastal California gnatcatcher occurs outside of the water service area and would not be impacted by implementation of the projects (Figure 8). Therefore, impacts would not occur to these species as a result of project implementation.

6.1.4 Jurisdictional Resources

Implementation of the projects is not expected to impact jurisdictional aquatic resources. The WRCRWA Transmission Pipeline is adjacent to the Santa Ana River and has been designed to avoid riparian habitat and jurisdictional aquatic resources (City of Corona 2016). The WRCRWA Transmission Pipeline was previously evaluated under CEQA in the 2016 Proposition 1 IS/MND (City of Corona 2016). No further analysis of this project is required or provided in this report.

The WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline are proposed on undeveloped land that could support jurisdictional aquatic resources, although unlikely. If the potential for jurisdictional aquatic resources to occur on the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites is identified, impacts to state or federally protected jurisdictional aquatic resources could occur through direct removal, filling, hydrological interruption, or other means. Impacts to jurisdictional aquatic resources could be considered significant under CEQA depending on the type of aquatic resource and the extent of the proposed impact.

6.1.5 Wildlife Corridors and Linkages

As discussed in Section 3.6, Wildlife Corridors and Linkages, important wildlife corridors occur in the northern and western portions the water service area. The Santa Ana Mountains are an important north–south wildlife corridor; however, no projects identified in the 2018 RWMP are proposed in the Santa Ana Mountains. The Santa Ana River floodplain is an important east–west wildlife corridor. The WRCRWA Transmission Pipeline crosses the Santa Ana River, which is a regional wildlife movement corridor; however, the pipeline would be installed in the existing paved road right-of-way and would not impact the Santa Ana River. The WRCRWA Transmission Pipeline was previously evaluated under CEQA in the 2016 Proposition 1 IS/MND (City of Corona 2016). No further analysis of this project is required or provided in this report. No other projects identified in the 2018 RWMP are proposed in the Santa Ana River floodplain.

6.1.6 Local Policies and Ordinances

The project would comply with local policies and ordinances protecting biological resources in the City of Corona 2020–2040 General Plan (City of Corona 2020b). Section 4.3, Local Regulations, outlines the City of Corona 2020–2040 General Plan goals and policies related to biological resources and implementation of the projects.

As discussed in Section 6.1.4, the projects would avoid, or if avoidance is not feasible, fully mitigate potential impacts to jurisdictional aquatic resources, thereby complying with the City of Corona 2020–2040 General Plan Goal ER-4, Policies ER-4.1 through ER-4.5, Goal ER-5, and Policies ER-5.1 through ER-5.5.

As discussed in Sections 6.1.1 through Sections 6.1.3 and 6.3, the projects' potential impacts to sensitive plant animal species, sensitive vegetation communities, and jurisdictional aquatic resources would be potentially significant before incorporation of mitigation. Therefore, with implementation of mitigation measures fully mitigating impacts to sensitive plant animal species, sensitive vegetation communities, and jurisdictional aquatic resources discussed in Section 6.3, Mitigation Measures, the projects would not conflict with the City of Corona 2020–2040 General Plan Goal ER-6 and Policies ER-6.1 through ER-6.5 regarding protection of plant and animal species and sensitive vegetation communities in the City and its Planning Area.

The projects would be consistent with the conservation goals outlined in the Western Riverside County MSHCP. The 2018 RWMP would result in less than significant impacts to biological resources with mitigation incorporated and is therefore compliant with the Western Riverside County MSHCP conservation planning goals and the City of Corona 2020–2040 General Plan Goal ER-7 and Policies ER-7.1 through ER-7.3.

No oak trees were identified on the project sites that would be impacted by implementation of the projects. Therefore, the project is not in conflict with the City of Corona 2020–2040 General Plan

Goal ER-8 and Policies ER-8.1 through ER-8.5 or the Riverside County Oak Tree Management Guidelines (City of Corona 2020; County of Riverside 1993).

The projects do not propose development in the Temescal Canyon Plan Area, in the Santa Ana River, or other regional washes. Therefore, the projects would not conflict with the City of Corona 2020–2040 General Plan Goal ER-9 and Policies ER-9.1 through ER-9.12.

Implementation of the project would not result in conflicts with any local policies or ordinances protecting biological resources.

6.1.7 Regional Conservation Planning

As discussed in Section 4.3, the Western Riverside County MSHCP functions as a comprehensive, multi-jurisdictional plan that addresses biological and ecological diversity by conserving species and associated habitats while allowing approval of development within the County. It is the City's policy to comply with the Western Riverside County MSHCP in its consideration and approval of development projects, including the projects identified in the 2018 RWMP. Further, the City of Corona 2020–2040 General Plan incorporates compliance with the Western Riverside County MSHCP in the goals and policies used to guide development in the City and its Planning Area (City of Corona 2020b). The projects' compliance with the City of Corona 2020–2040 General Plan natural resources goals and policies was previously discussed in Section 6.1.6.

The avoidance, minimization, and mitigation measures proposed in Sections 6.1.1 through 6.1.4 would reduce potentially significant impacts to sensitive plant and animal species, sensitive vegetation communities, and jurisdictional aquatic resources to a less than significant level. Because the projects would not contribute to the loss of sensitive vegetation or sensitive species, the project would comply with the Western Riverside County MSHCP. Therefore, before implementation of mitigation, potentially significant impacts would occur from conflicts with regional conservation plans and mitigation would be required.

6.2 Indirect Impacts

Indirect impacts may occur during the construction of the 2018 RWMP projects and post-construction operations. Potential indirect impacts from implementation of the project includes decreased water quality (e.g., through sedimentation, contaminants, or fuel release), fugitive dust, colonization of invasive plant species, noise, and lighting. The majority (25 of 29) of the projects anticipated in the project would be situated in currently developed (non-sensitive) areas of the water service area. However, the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline projects are planned on non-native grassland habitat that may support sensitive plant species. These three projects have the potential to result in indirect impacts on sensitive vegetation communities and sensitive plants and animals, and such impacts are further discussed below.

6.2.1 Water Quality

Indirect impacts may occur during the construction of the projects and post-construction operations. Potential indirect impacts to sensitive vegetation communities from implementation of the project includes decreased water quality (e.g., through sedimentation, contaminants, or fuel release). The majority (25 of 29) of the projects anticipated in the project would be situated in currently developed (non-sensitive) areas of the water service area. However, the WRCRWA Booster Pump Station, WRCRWA Transmission Pipeline, WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline projects are planned in non-native grassland habitat. As previously discussed, the WRCRWA Booster Pump Station and WRCRWA Transmission Pipeline projects were previously evaluated under CEQA in the 2016 Proposition 1 IS/MND (City of Corona 2016). No further analysis of these projects is required or provided in this report.

Section 3.10, Hydrology and Water Quality, in the 2018 RWMP PEIR analyzes potential water quality impacts from implementation of projects, and concludes that impacts would be less than significant because they would comply with the applicable policies and regulations pertaining to water quality. Therefore, water quality impacts to sensitive vegetation communities would be less than significant.

6.2.2 Fugitive Dust

Fugitive dust produced during construction may disperse onto sensitive vegetation adjacent to the project sites that could support sensitive plant species. The resulting dust cover may reduce native plant productivity, displacing native vegetation, reducing diversity, and affecting animals dependent on the vegetation.

Air quality impacts during construction, including fugitive dust, are analyzed in Section 3.3, Air Quality, in the 2018 RWMP PEIR. The analysis concluded that no significant impacts would result from implementation of the projects. The project would avoid indirect impacts to sensitive plants and animals from fugitive dust by implementing standard air quality control measures and National Pollutant Discharge Elimination System regulations required by construction specifications to effectively reduce fugitive dust during construction. The control measures may include but are not limited to the application of soil stabilizers (water) to disturbed areas, termination of soil disturbance during high wind events, and covering of material stockpiles. Applicable construction best management practices would also be implemented. Therefore, fugitive dust impacts would be less than significant, and no mitigation is required.

6.2.3 Invasive Plant Species

Non-native plants may colonize sites disturbed by demolition and construction and may spread into adjacent native vegetation communities. Some non-native plants are highly invasive and can

disrupt native habitats by reducing native and sensitive species diversity, potentially increase flammability and fire frequency, change ground and surface water levels, and potentially adversely affect native animals that are dependent on native plant species.

Colonization by non-native plant species in the vegetated areas that may support sensitive plant species on the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites would be a potentially significant impact.

6.2.4 Noise

Construction-related noise from clearing, grubbing, and grading may impact sensitive animals. Breeding birds and mammals may temporarily or permanently leave their territories to avoid direct impacts from construction activities, which may lead to reduced reproductive success and increased mortality. Indirect noise impacts would be considered significant for state- or federally listed species and for nesting raptors and birds protected by the CFG Code and MBTA. Nesting raptors may also be affected by noise from construction activity. Construction activity that commences during the nesting season within 500 feet of an active raptor nest would result in a significant impact to sensitive animal species and nesting birds. A Construction Noise Management Plan would be implemented in the projects with Mitigation Measure NOI-1, detailed in Section 3.13, Noise, in the 2018 RWMP PEIR. Implementation of Mitigation Measure NOI-1 would incorporate best management practices into project construction so that noise levels would not be an excessive nuisance to humans and animals. Therefore, indirect noise impacts to sensitive animal species would be less than significant.

6.2.5 Lighting

Nighttime lighting during construction has the potential to spill into native vegetation communities, exposing animal species to an unnatural light regime and potentially altering their behavior patterns, which can result in lower reproductive success, reducing species diversity. In addition, nighttime lighting may provide nocturnal predators with an unnatural advantage over their prey. This may cause an increased loss in native animals that may be significant, especially for sensitive species that may occur. Temporary construction lighting that spills into undeveloped areas would be potentially significant where these areas are not currently affected by lighting. Therefore, indirect impacts from nighttime lighting would have the potential to result in a significant impact to sensitive animal species.

6.3 Mitigation Measures

This section includes mitigation measures necessary to avoid and reduce significant direct and indirect impacts to sensitive vegetation communities, sensitive plant and animal species, nesting birds, and jurisdictional aquatic resources including waters and wetlands.

For reference, Table 6 provides a crosswalk for mitigation measures between this report and Section 3, Biological Resources, in the 2018 RWMP PEIR.

Table 6. Biological Resources Mitigation Measure Equivalency Table for the 2018 Reclaimed Water Master Plan Project

Biological Resources Technical Report	PEIR Section 3.4: Biological Resources
BIO-1: Biological Resources Survey/Habitat Assessment	BIO-11
BIO-2: Permanent Impacts to Non-native Grassland	BIO-2
BIO-3: Temporary Impacts to Non-native Grassland	BIO-3
BIO-4: Sensitive Plant Species Surveys	BIO-1
BIO-5: Invasive Plant Species Prevention	BIO-4
BIO-6: Flagging and Fencing	BIO-5
BIO-7: Contractor Training Program	BIO-6
BIO-8: Biological Monitor	BIO-7
BIO-9: Burrowing Owl Surveys	BIO-8
BIO-10: Preconstruction Nesting Bird Surveys	BIO-9
BIO-11: Night Lighting	BIO-10
BIO-12: Aquatic Resources Delineation	BIO-12
BIO-13: Aquatic Resources Permitting	BIO-13

Notes: PEIR = Program Environmental Impact Report

6.3.1 Sensitive Vegetation Communities

6.3.1.1 Survey Requirements

Implementation of Mitigation Measure BIO-1 would reduce permanent impacts to non-native grassland that could support sensitive plant species on the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites.

BIO-1: **Biological Resources Survey/Habitat Assessment.** For projects proposed in the City of Corona 2018 Reclaimed Water Master Plan on undeveloped land, including the Western Riverside County Regional Wastewater Authority Flow Control Improvements, Promenade Pipeline, and Research Pipeline, a site-specific biological resources survey shall be conducted during the project design phase. The biological resources survey shall be conducted by a qualified biologist and shall include, but not be limited to, the following:

An analysis of available literature and biological databases, such as the California Natural Diversity Database, to determine sensitive biological resources that have been reported historically from the proposed project vicinity.

- A review of current land use and land ownership within the project vicinity.
- An assessment and mapping of vegetation communities present within the proposed project vicinity. If vegetation community mapping has not been conducted on the

site in the previous 3 years, updated vegetation mapping shall be conducted by a qualified biologist as part of the project planning and environmental review process. Vegetation communities shall be mapped according to the Manual of California Vegetation at the alliance level and a crosswalk table with Holland vegetation communities shall be provided.

- A general assessment of the potential for aquatic resources, including wetlands and riparian habitats, to occur onsite.
- An evaluation of potential local and regional wildlife movement corridors.
- If the project sites support vegetation communities that may provide habitat for plant or animal species, a focused habitat assessment conducted by a qualified biologist to determine the potential for sensitive plant or animal species to occur on or adjacent to the project sites.

The results of the biological survey shall be presented in a biological survey letter report.

6.3.1.2 Habitat Mitigation Requirements

Permanent Impacts

Implementation of Mitigation Measure BIO-2, a mitigation ratio of 0.5:1, would be applied following the accepted ratios established by the Western Riverside County MSHCP to reduce potentially significant impacts to sensitive vegetation communities to less than significant. Mitigation Measure BIO-2 would reduce permanent impacts to non-native grassland to a less than significant level.

BIO-2: **Permanent Impacts to Non-Native Grassland.** Permanent impacts to sensitive non-native grassland shall be mitigated through the preservation of habitat, habitat creation, or enhancement, or combination thereof, in the City of Corona or off site through habitat acquisition and preservation or purchase of credits from an approved conservation bank. Mitigation for impacts to non-native grassland shall be in-kind using native grasses. Permanent impacts to sensitive non-native grassland shall be mitigated at a ratio of 0.5:1.

For on-site mitigation, a detailed mitigation plan shall be prepared before the start of construction (not applicable to mitigation met through the purchase of credits from an approved wetland mitigation bank). The Mitigation Plan shall include at a minimum the proposed location of the mitigation areas, site preparation, a plant palette, installation procedures, success criteria, fencing and signage, monitoring requirements, and other details of the habitat restoration effort and shall be prepared by a qualified biologist.

Temporary Impacts

With implementation of Mitigation Measure BIO-3, following the accepted ratios established by the Western Riverside County MSHCP to reduce potentially significant impacts to sensitive vegetation communities to less than significant, temporary impacts to non-native grassland would be restored in place or elsewhere on the project site at a mitigation ratio of 1:1, as described in Mitigation Measure BIO-3. Mitigation Measure BIO-3 would reduce temporary impacts to non-native grassland to a less than significant level.

BIO-3: **Temporary Impacts to Non-Native Grassland.** Temporary impacts to non-native grassland shall be restored in place or elsewhere on the project site at a 1:1 replacement ratio using native grass species.

A Revegetation Plan shall be prepared. The Revegetation Plan shall include site preparation specifications, a plant palette, installation procedures, development of reasonable success criteria, appropriate monitoring and reporting protocols, implementation timelines, and contingency measures in the event of restoration failure. The City of Corona shall provide guidance for and oversight of the Revegetation Plan and implementation.

In the event that non-native grassland vegetation cannot be restored in place or elsewhere on the project site after construction, these impacts would be considered permanent and Mitigation Measure BIO-2 would be implemented.

The 0.5:1 permanent impacts and 1:1 temporary impacts mitigation ratios for the project would follow the accepted ratios established by the Western Riverside County MSHCP to reduce potentially significant impacts to sensitive vegetation communities to less than significant.

6.3.2 Sensitive Plant Species

6.3.2.1 Survey Requirements

Implementation of Mitigation Measure BIO-4 would require sensitive plant species surveys at the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites.

BIO-4: **Sensitive Plant Species Surveys.** If one or more sensitive plant species has the potential to occur on the Western Riverside County Regional Wastewater Authority Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites, focused species surveys shall be conducted before construction to determine the presence and absence of these species to adequately evaluate potential direct or indirect impacts to these species.

Sensitive plant species surveys shall be conducted by a qualified biologist retained by the City of Corona during the appropriate season for to detect species as part of the project design phase. Surveys shall be floristic in nature and include lists of the plants identified in the survey area. Surveys shall be conducted on foot, employing a level of effort sufficient to provide comprehensive coverage. The locations and prevalence (estimated total numbers and percent cover, as applicable) of sensitive plants shall be recorded. The sensitive plant species surveys shall be valid for 3 years.

If site-specific surveys are not required because a survey was conducted within the last 3 years, impact assessment and minimization and mitigation requirements shall be based on the most recent available survey. These requirements shall also include an analysis of the potential for sensitive plant species to occur on site based on existing site conditions and shall be consistent with the most recent U.S. Fish and Wildlife Service and California Department of Fish and Wildlife survey protocols.

If sensitive plant species are observed, they shall be avoided if possible. If species cannot be avoided, impacts shall be mitigated through conservation of habitat that supports the impacted species in accordance with Mitigation Measures BIO-2 and BIO-3.

Construction

The following mitigation measures would minimize construction impacts to sensitive plant species, including the spread of invasive non-native plant species, during the implementation of the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline projects.

BIO-5: **Invasive Plant Species Prevention.** During construction of the Western Riverside County Regional Wastewater Authority Flow Control Improvements, Promenade Pipeline, and Research Pipeline projects, the following measures shall be implemented to minimize the spread of invasive plant species:

- Construction equipment shall be cleaned before coming to the project sites.
- Weed-free straw wattles shall be used for erosion control.

BIO-6: **Flagging and Fencing.** If sensitive biological resources are identified on or adjacent to the Western Riverside County Regional Wastewater Authority Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites, the construction limits shall be clearly identified on construction drawings and flagged on the project site to ensure impacts to sensitive biological resources are avoided or minimized to the extent feasible. Before implementing construction activities, a qualified biologist shall verify that the flagging clearly delineates the construction limits and sensitive resources to be avoided.

BIO-7: **Contractor Training Program.** If sensitive biological resources are known to occur on or adjacent to the Western Riverside County Regional Wastewater Authority Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites, a project-specific contractor training program shall be developed and implemented to educate project contractors on the sensitive biological resources on and adjacent to the project sites and measures being implemented to avoid or minimize impacts to these species. A qualified biologist shall develop and implement the contractor training program.

BIO-8: **Biological Monitor.** If sensitive biological resources are present on or adjacent to the Western Riverside County Regional Wastewater Authority Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites and impacts may occur from implementation of construction activities, a qualified biological monitor may be required during all or a portion of the construction activities to ensure impacts to the sensitive biological resources are avoided or minimized to the extent feasible. The specific biological monitoring requirements shall be evaluated on a project-by-project basis. The qualified biological monitor shall be approved by the City of Corona based on applicable experience with the sensitive biological resources that may be impacted.

6.3.3 Sensitive Animal Species

6.3.3.1 Burrowing Owl

Implementation of Mitigation Measure BIO-9 would require burrowing owl clearance surveys on the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites to reduce potential impacts to burrowing owl to less than significant.

BIO-9: **Burrowing Owl Surveys.** A burrowing owl clearance survey shall be conducted before any ground-disturbing activities in accordance with the California Department of Fish and Wildlife 2012 Staff Report on Burrowing Owl Mitigation. Two preconstruction clearance surveys shall be conducted 14–30 days and 24 hours before ground-disturbing activities to document the continued absence of burrowing owl from the project sites. The burrowing owl surveys shall be valid for 1 year.

6.3.3.2 Nesting Birds

Implementation of Mitigation Measure BIO-10 would reduce potential impacts to nesting birds protected by the CFG Code and MBTA to less than significant.

BIO-10: **Preconstruction Nesting Bird Surveys.** To the extent feasible, grubbing, trimming, or clearing of vegetation from project sites shall not occur during the general bird nesting

season (January 15 through September 15). If grubbing, trimming, or clearing of vegetation cannot feasibly occur outside of the general bird nesting season, a qualified biologist shall perform a preconstruction nesting bird survey at project sites with vegetation supporting nesting birds. Nesting bird surveys shall occur within 10 days before to the start of vegetation clearing or grubbing to determine if active bird nests are present. If no active bird nests are identified on the project site or within a 300-foot buffer of the project site, no further mitigation is necessary. If active nests of bird species covered by the Migratory Bird Treaty Act are detected on the project site during the 10-day preconstruction survey, construction activities should stay outside of a 300-foot buffer around the active nest. For raptor species, this buffer is expanded to 500 feet. It is recommended that a biological monitor be present to delineate the boundaries of the buffer area and to monitor the active nest to ensure that nesting behavior is not adversely affected by the construction activity. Once the young have fledged, and a qualified biologist has determined the nest is inactive, normal construction activities can occur.

6.3.3.3 Construction Lighting

Construction is expected is occur primarily during the daylight hours. However, if night work is needed near sensitive biological resources, implementation of Mitigation Measure BIO-11 shall be implemented at the project sites to reduce potential nighttime lighting impacts to sensitive animal species to less than significant.

BIO-11: **Night Lighting.** If temporary night lighting is necessary during construction adjacent to sensitive vegetation communities, construction contractors shall ensure lights are directed away from sensitive vegetation communities and shielded to minimize temporary lighting of the surrounding habitat and should be of the lowest illumination necessary for human safety.

6.3.4 Jurisdictional Aquatic Resources

In the event that state- or federally protected jurisdictional aquatic resources are identified during implementation of Mitigation Measure BIO-1, the Mitigation Measures BIO-12 and BIO-13 shall be implemented.

BIO-12: **Aquatic Resources Delineation.** If sensitive aquatic resources are identified on the Western Riverside County Regional Wastewater Authority Flow Control Improvements, Promenade Pipeline, and Research Pipeline project sites, a qualified biologist shall conduct an aquatic resources delineation following the methods outlined in the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual and the Regional Supplement to the U.S. Army Corps of Engineers Wetland Delineation Manual: Arid West Region to map the extent of wetlands and non-wetland waters,

determine jurisdiction, and assess potential impacts. The results of the delineation shall be presented in an aquatic resources delineation report and shall be incorporated into the California Environmental Quality Act documents required for approval and permitting of the proposed project.

BIO-13: **Aquatic Resources Permitting.** If the Western Riverside County Regional Wastewater Authority Flow Control Improvements, Promenade Pipeline, and Research Pipeline projects would impact sensitive aquatic resources, permits and authorizations shall be obtained from the U.S. Army Corps Engineers, California Department of Fish and Wildlife, or Regional Water Quality Control Board. The regulatory agency authorizations would include impact avoidance and minimization measures and mitigation measures for unavoidable impacts. Specific avoidance, minimization, and mitigation measures for impacts to jurisdictional resources shall be determined through discussions with the regulatory agencies during the proposed project permitting process and may include monetary contributions to a mitigation bank or habitat creation, restoration, or enhancement.

6.4 Level of Significance After Mitigation

Project implementation would result in potentially significant direct and indirect impacts to sensitive vegetation communities, sensitive plant and animal species, nesting birds, and jurisdictional aquatic resources.

With implementation of Mitigation Measures BIO-1 through BIO-3, impacts to the sensitive vegetation community, non-native grassland, from implementation of the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline projects would be reduced to a less than significant level.

With implementation of Mitigation Measures BIO-2 through BIO-8, impacts to sensitive plant species identified as candidate, sensitive, or special-status species by the CDFW or USFWS from implementation of the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline projects would be reduced to a less than significant level.

With implementation of Mitigation Measures BIO-9 through BIO-11, direct and indirect impacts to sensitive animal species identified as candidate, sensitive, or special-status species by the CDFW or USFWS from implementation of the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline projects would be reduced to a less than significant level.

With implementation of Mitigation Measures BIO-1, BIO-12, and BIO-13, impacts to state or federally protected aquatic resources through direct removal, filling, hydrological interruption, or

other means from implementation of the WRCRWA Flow Control Improvements, Promenade Pipeline, and Research Pipeline projects would be reduced to a less than significant level.

With implementation of Mitigation Measures BIO-1 through BIO-13, impacts from conflicts with the Western Riverside County MSHCP or other regional conservation plans would be less than significant.

With implementation of Mitigation Measures BIO-1 through BIO-13, direct and indirect impacts to sensitive biological resources from implementation of the projects would be less than significant.

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Section 7 Cumulative Impacts and Mitigation

The cumulative impact analysis for biological resources considers RWMP 2018 project development in conjunction with other development projects in the water service area as well as projects covered by the Western Riverside County MSHCP.

7.1 Riparian Habitat or Other Sensitive Natural Community

The geographic context for the analysis of cumulative impacts to riparian habitat or other sensitive natural communities is the area covered by the Western Riverside County MSHCP. A significant cumulative impact would occur if, in combination, cumulative projects would have a substantial adverse impact on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the CDFW or USFWS. All projects, including the 2018 RWMP, approved within the City's jurisdiction are required to be consistent with the City of Corona 2020–2040 General Plan natural resources goals and policies (City of Corona 2020b) and the Western Riverside County MSHCP and to provide mitigation for impacts to riparian habitat and sensitive vegetation communities, as appropriate. The 2018 RWMP, as with other cumulative projects, would be required to meet or exceed the Western Riverside County MSHCP regional conservation requirements. As analyzed in Section 6.3.1, potentially significant project-level impacts to non-native grassland habitat would be reduced to a less than significant level with implementation of Mitigation Measures BIO-1 through BIO-3. Therefore, the project's contribution would not be cumulatively considerable.

7.2 Sensitive Plant Species

The geographic context for the analysis of cumulative impacts to sensitive plant species is the area covered by the Western Riverside County MSHCP. A significant cumulative impact would occur if, in combination, cumulative projects would result in a substantial adverse impact on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by the CDFW or USFWS. All projects, including the 2018 RWMP, approved in the City's jurisdiction are required to be consistent with the City of Corona 2020–2040 General Plan natural resources goals and policies (City of Corona 2020b) and the Western Riverside County MSHCP and to provide mitigation for impacts to sensitive plant species, as appropriate. As analyzed in Section 6.3.2, potentially significant project-level impacts to sensitive plant species would be reduced to a less than significant level with implementation of Mitigation Measures BIO-2 through BIO-8. Since cumulative projects and the 2018 RWMP would be required to meet or exceed the Western Riverside County MSHCP regional conservation requirements, and project-specific mitigation measures would be implemented to reduce the project's impacts to sensitive plant species to below a level of significance, the project's contribution would not be cumulatively considerable.

7.3 Sensitive Animal Species

The geographic context for the analysis of cumulative impacts to sensitive animal species is the area covered by the Western Riverside County MSHCP. A significant cumulative impact would occur if, in combination, cumulative projects would result in a substantial adverse impact on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by the CDFW or USFWS. All projects, including the 2018 RWMP, approved within the City's jurisdiction are required to be consistent with the City of Corona 2020–2040 General Plan natural resources goals and policies (City of Corona 2020b) and the Western Riverside County MSHCP and to provide mitigation for impacts to sensitive animal species, as appropriate. The 2018 RWMP, as with other cumulative projects, would be required to meet or exceed the Western Riverside County MSHCP regional conservation requirements. As analyzed in Section 6.3.3, potentially significant project-level impacts to burrowing owl and nesting birds would be reduced to a less than significant level with implementation of Mitigation Measures BIO-9 through BIO-11. Therefore, the project's contribution would not be cumulatively considerable.

7.4 Jurisdictional Aquatic Resources

The geographic context for the analysis of cumulative impacts to jurisdictional aquatic resources is the area covered by the Western Riverside County MSHCP. A significant cumulative impact would occur if, in combination, cumulative projects would have a substantial adverse impact on a state or federally protected wetland through direct removal, filling, hydrological interruption, or other means. All projects, including the 2018 RWMP, approved within the City's jurisdiction are required to be consistent with the City of Corona 2020–2040 General Plan natural resources goals and policies (City of Corona 2020b) and the Western Riverside County MSHCP and to provide mitigation for impacts to jurisdictional aquatic resources, as appropriate. The 2018 RWMP, as with other cumulative projects, would be required to meet or exceed the Western Riverside County MSHCP regional conservation requirements, and implement project-specific mitigation measures to reduce significant impacts. As analyzed in Section 6.3.4, potentially significant project-level impacts to jurisdictional aquatic resources would be reduced to a less than significant level with implementation of Mitigation Measures BIO-1, BIO-12, and BIO-13. Therefore, the project's contribution would not be cumulatively considerable.

7.5 Wildlife Corridors and Linkages

The geographic context for the analysis of cumulative impacts to wildlife corridors and linkages is the area covered by the Western Riverside County MSHCP. A significant cumulative impact would occur if, in combination, cumulative projects would interfere substantially with the movement of any native resident or migratory fish or animal species or with established native resident or migratory wildlife corridors, or impede the use of native animal nursery sites. All projects, including the 2018 RWMP, approved within the City's jurisdiction are required to be

consistent with the City of Corona 2020–2040 General Plan natural resources goals and policies (City of Corona 2020b), the Western Riverside County MSHCP and to provide mitigation for impacts to wildlife corridors and linkages, as appropriate. The 2018 RWMP, as with other cumulative projects, would be required to meet or exceed the Western Riverside County MSHCP regional conservation requirements and implement project-specific mitigation measures to reduce significant impacts. As analyzed in Section 6.1.5, the project would have a less than significant impact to wildlife corridors and linkages, and no mitigation is required. Therefore, the project's contribution would not be cumulatively considerable.

7.6 Local Policies and Ordinances

The geographic context for the analysis of cumulative impacts to local policies and ordinances is the City. A significant cumulative impact would occur if, in combination, cumulative projects would conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. All projects, including the 2018 RWMP, approved within the City's jurisdiction are required to be consistent with the City of Corona 2020–2040 General Plan natural resources goals and policies (City of Corona 2020b), and the Western Riverside County MSHCP and to provide mitigation for conflicts with local policies and ordinances, as appropriate. As analyzed in Section 6.1.6, with implementation of Mitigation Measures BIO-1 through BIO-13, the 2018 RWMP would have a less than significant impact from conflicts with any local policies or ordinances protecting biological resources, such as tree preservation policy or ordinance. Therefore, the project's contribution would not be cumulatively considerable.

7.7 Regional Conservation Planning

The geographic context for the analysis of cumulative impacts to regional conservation planning is the area covered by the Western Riverside County MSHCP. A significant cumulative impact would occur if, in combination, cumulative projects would conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state HCP.

In 1991, the State of California passed the NCCP Act, providing for the long-term, regional conservation of natural vegetation and animal diversity. The biological conservation offered by the Western Riverside County MSHCP provides sufficient habitat area, diversity, and linkages to allow the participating local jurisdictions to directly impact or "take" up to 146 sensitive plant and animal species in the region. These "covered species" identified in the MSHCP consist of species listed as endangered or threatened by the federal or state Endangered Species Acts and other regional rare but currently unlisted sensitive species.

The 2018 RWMP, as with other cumulative projects, would be required to meet or exceed Western Riverside County MSHCP regional conservation requirements and provide mitigation for

significant impacts, as appropriate. Consistency with regional conservation plans and mitigation measures, as appropriate, must be demonstrated in order for the project and other cumulative projects to be approved. Mitigation Measures BIO-1 through BIO-13 would reduce project-level direct and indirect impacts on sensitive plants and animals, nesting birds, sensitive vegetation communities, and jurisdictional aquatic resources. Implementation of these mitigation measures would reduce project-level impacts and ensure the project would not contribute to cumulatively significant impacts from conflicts with regional conservation planning. The project would comply with the Western Riverside County MSHCP and would not contribute to loss of sensitive vegetation communities or sensitive species. Therefore, the project's contribution would not be cumulatively considerable.

Section 8 References

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Appendix A. Animal Species Observed

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Animal Species Observed in the Water Service Area

Family	Common Name	Scientific Name
Birds		
Accipitriformes (Hawks, Kites, Eagles, and Allies)		
Accipitridae Hawks, Eagles, Kites, and Allies	Red-tailed hawk	*Buteo jamaicensis*
Cathartidae New World Vultures	Turkey vulture[1]	*Cathartes aura*
Anseriformes (Ducks, Geese, and Swans)		
Anatidae Ducks, Geese, and Swans	Mallard	*Anas platyrhynchos*
Falconiformes (Falcons)		
Falconidae Falcons	American kestrel	*Falco sparverius*
Caprimulgiformes (Nightjars)		
Apodidae Swifts	White-throated swift	*Aeronautes saxatalis*
Trochilidae Hummingbirds	Anna's hummingbird	*Calypte anna*
	Allen's hummingbird	*Selasphorus sasin*
Passeriformes (Perching Birds)		
Aegithalidae Bushtits	Bushtit	*Psaltriparus minimus*
Alaudidae Larks	California horned lark[2]	*Eremophila alpestris actia*
Cardinalidae Cardinals	Black-headed grosbeak	*Passerina melanocephalus*
Columbiformidae Doves	Mourning dove	*Zenaida macroura*
	Rock pigeon[3]	*Columba livia*
Corvidae Jays, Magpies, and Crows	American crow	*Corvus brachyrhynchos*
Fringillidae Finches	House finch	*Haemorhous mexicanus*
	Lawrence's goldfinch	*Spinus lawrencei*
	Lesser goldfinch	*Spinus psaltria*
Icteridae Orioles	Bullock's oriole	*Icterus bullockii*
	Hooded oriole	*Icterus cucullatus*
	Yellow-breasted chat[1,4]	*Icteria virens*
	Western meadowlark	*Sturnella neglecta*
Mimidae Mockingbirds	Northern mockingbird	*Mimus polyglottos*

Animal Species Observed in the Water Service Area

Family	Common Name	Scientific Name
Passerellidae Passerines	California towhee	*Melozone crissalis*
	Song sparrow	*Melospiza melodia*
	Spotted towhee	*Pipilo maculatus*
	White-crowned sparrow	*Zonotrichia leucophrys*
Parulidae Wood Warblers	Yellow-rumped warbler	*Setophaga coronata*
Turdidae Songbirds	Western bluebird	*Sialia mexicana*
Sturnidae Starlings	European starling[3]	*Sturnus vulgaris*
Sylviidae Sylviid Warblers	Wrentit	*Chamaea fasciata*
Troglodytidae Wrens	Bewick's wren	*Thryomanes bewickii*
	House wren	*Troglodytes aedon*
Tyrannidae Tyrant Flycatchers	Ash-throated flycatcher	*Myiarchus cinerascens*
	Black phoebe	*Sayornis nigricans*
	Cassin's kingbird	*Tyrannus vociferans*
	Say's phoebe	*Sayornis saya*
Hirundinidae Swallows, Martins, and Saw-Wings	Northern rough-winged swallow	*Stelgidopteryx serripennis*
Vireonidae Vireos	Least Bell's vireo[1, 4,4]	*Vireo bellii pusillus*
Galliformes (Fowls)		
Odontophoridae New World Quails	California quail	*Callipepla californica*
Piciformes (Woodpeckers)		
Picidae Woodpeckers	Acorn woodpecker	*Melanerpes formicivorus*
	Nuttall's woodpecker	*Dryobates nuttallii*
Mammals		
Artiodactyla (Cloven-hoofed Mammals)		
Cervidae Deer and Elk	Mule deer	*Odocoileus hemionus*
Carnivora (Carnivores)		
Canidae Foxes, Wolves, and Relatives	Coyote[1]	*Canis latrans*
Rodentia (Rodents)		
Sciuridae Squirrels, Chipmunks, and Marmots	California ground squirrel	*Spermophilus beecheyi*

Animal Species Observed in the Water Service Area

Family	Common Name	Scientific Name
Lagomorpha (Rabbits, Hares, and Pika)		
Leporidae Rabbits and Hares	Desert cottontail rabbit	*Sylvilagus audubonii*
Invertebrates		
Lepidoptera (Butterflies)		
Nymphalidae Brush-Footed Butterflies	Painted lady	*Vanessa cardui*
	Lorquin's admiral	*Limenitis lorquini*
Reptiles		
Squamata (Lizards and Snakes)		
Iguanidae American Arboreal Lizards, Chuckwallas, and Iguanas	Western fence lizard	*Sceloporus occidentalis*
Phrynosomatidae North American Spiny Lizards	Western side-blotched lizard	*Uta stansburiana elegans*

Notes:

[1] Western Riverside County Multiple Species Habitat Conservation Plan

[2] California Department of Fish and Wildlife Watch List species

[3] Non-native

[4] California Department of Fish and Wildlife Species of Special Concern

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Appendix D. Cultural and Tribal Cultural Resources Technical Report

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Cultural and Tribal Cultural Resources Technical Report for the City of Corona 2018 Reclaimed Water Master Plan, Corona, California

Submitted to:

City of Corona
Public Works Department

Prepared for:

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June 2020

TABLE OF CONTENTS

CHAPTER **PAGE**

NATIONAL ARCHAEOLOGICAL DATABASE INFORMATION iv

ACRONYMS AND ABBREVIATIONS v

EXECUTIVE SUMMARY vi

1. INTRODUCTION 1
1.1 PURPOSE OF STUDY 1
1.2 REGULATORY FRAMEWORK 1
1.2.1 CEQA and California Register of Historical Resources 1
1.2.2 California State Assembly Bill 52 2
1.2.3 California State Senate Bill 18 2
1.2.4 California Public Resource Code Section 5097.98 2
1.2.5 California Health and Safety Code Section 7050.5 4
1.2.6 Corona Historic Resources Ordinance 4
1.2.7 Corona Register of Historic Resources (Corona Register) 5
1.2.8 Corona Heritage Inventory 6
1.3 PROJECT DESCRIPTION 7
1.3.1 Project Purpose 7
1.3.2 Project Objectives 7
1.3.3 Project Components 7
1.4 PROJECT LOCATION 7
1.4.1 Regional Location 7
1.4.2 Water Service Area 8
1.5 PROJECT PERSONNEL 8

2. SETTING 19
2.1 NATURAL SETTING 19
2.2 CULTURAL SETTING 20
2.2.1 Prehistoric Period 20
2.2.2 Ethnohistoric Period 25
2.2.3 Historic Period 30

3. METHODS 34
3.1 RECORD SEARCHES 34
3.1.1 Eastern Information Center 34
3.1.2 Native American Heritage Commission 34
3.2 ARCHIVAL RESEARCH 34
3.3 TRIBAL CULTURAL RESOURCES 34

4. RESULTS 37
4.1 RECORD SEARCH RESULTS 37
4.1.1 EIC Record Search Results 37
4.1.2 NAHC Record Search Results 56
4.2 ARCHIVAL RESEARCH RESULTS 57
4.3 TRIBAL CULTURAL RESOURCES RESULTS 57

5. CULTURAL RESOURCE SENSITIVITY ANALYSIS 59

6. RESOURCE IMPACT ANALYSIS 62

6.1 SIGNIFICANCE CRITERIA 62
6.2 BUILT ENVIRONMENT RESOURCES IMPACT ANALYSIS 62
6.3 ARCHAEOLOGICAL RESOURCES IMPACT ANALYSIS 63
6.4 TRIBAL CULTURAL RESOURCES IMPACT ANALYSIS 64

7. RECOMMENDATIONS 66

7.1 RESOURCE MANAGEMENT 66
7.2 MITIGATION MEASURES 66
7.2.1 Mitigation Measure CULT-1: Construction Related Vibration 66
7.2.2 Mitigation Measure CULT-2: Project Specific Archaeological Survey 67
7.2.3 Mitigation Measure CULT-3: Archaeological and Native American Monitoring Program 67
7.2.4 Mitigation Measure CULT-4: Identification and Treatment of Human Remains 68

8. REFERENCES 69

APPENDICES 75

APPENDIX A: RESUMES 77
APPENDIX B: NAHC CORRESPONDENCE 79
APPENDIX C: CONFIDENTIAL MAPS, CULTURAL RESOURCE LOCATIONS (provided separately) 80

LIST OF TABLES

Page

Table 1. Previously Conducted Cultural Resources Studies within the City of Corona and the SOI 37
Table 2. Previously Recorded Cultural Resources within the RWMP Project Area 46
Table 3. Built Environment Resources within the RWMP Project Area. 50
Table 4. City of Corona Historic Districts and Historic Landmarks 53
Table 5. City of Corona Historic Markers 55
Table 6. Impact Analysis and Recommended Mitigation Measure for RWMP Project Components 63

LIST OF FIGURES

Page

Figure 1. Project Vicinity Map. 9
Figure 2. Project Area shown on an aerial photograph. 10
Figure 3. Project area shown on the USGS 7.5' Topographic Quadrangle (Map 1 of 7). 11
Figure 4. Project area shown on the USGS 7.5' Topographic Quadrangle (Map 2 of 7). 12
Figure 5. Project area shown on the USGS 7.5' Topographic Quadrangle (Map 3 of 7). 13
Figure 6. Project area shown on the USGS 7.5' Topographic Quadrangle (Map 4 of 7). 14
Figure 7. Project area shown on the USGS 7.5' Topographic Quadrangle (Map 5 of 7). 15
Figure 8. Project area shown on the USGS 7.5' Topographic Quadrangle (Map 6 of 7). 16

Figure 9. Project area shown on the USGS 7.5' Topographic Quadrangle (Map 7 of 7). 17
Figure 10. Record Search Area for the RWMP Project and the City of Corona General Plan Update Project. 35
Figure 11. Cultural Resource Sensitivity within the RWMP Project Area. 61

NATIONAL ARCHAEOLOGICAL DATABASE INFORMATION

Authors: Shelby Castells, M.A., RPA, and Spencer Bietz

Firm: Red Tail Environmental

Client: Harris and Associates

Submitted to: City of Corona

Report Date: June 2020

Report Title: Cultural and Tribal Cultural Resources Technical Report for the City of Corona 2018 Reclaimed Water Master Plan, Corona, California

Type of Study: Record Search Summary and Constraints and Resources Sensitivity Analysis

New Sites: N/A

Updated Sites: N/A

USGS Quads: Prado Dam, Corona North, Black Star Canyon, Corona South, Corona, and Lake Mathews 7.5' Quadrangles

Acreage: Approximately 24,930 acres (39 square miles)

Key Words: City of Corona Reclaimed Water Master Plan, Constraints Analyses, prehistoric archaeology, historic archaeology

ACRONYMS AND ABBREVIATIONS

AB 52	California State Assembly Bill 42
AMSL	above mean sea level
APE	Area of Potential Effects
CEQA	California Environmental Quality Act
CHRIS	California Historical Resources Information System
City	City of Corona
Corona Register	Corona Register of Historic Resources
CRHR	California Register of Historical Resources
EIC	Eastern Information Center
PEIR	Program Environmental Impact Report
NAHC	Native American Heritage Commission
OHP	Office of Historic Preservation
OPR	Office of Planning and Research
PRC	Public Resources Code
Red Tail	Red Tail Environmental
RWMP	City of Corona 2018 Reclaimed Water Master Plan
SB 18	California State Senate Bill 18
USGS	U.S. Geological Survey

EXECUTIVE SUMMARY

Red Tail Environmental (Red Tail) was contracted by Harris and Associates to conduct a cultural resources and Tribal Cultural Resources study in support of the Program Environmental Impact Report (PEIR) in order to evaluate if the City of Corona 2018 Reclaimed Water Master Plan (RWMP) Project will cause an adverse effect on significant historical resources or Tribal Cultural Resources; to identify areas which may be sensitive for cultural resources; make recommendations for program-wide mitigation measures for future specific projects within the RWMP project area; and make recommendations for future archaeological work that may be required in compliance with the California Environmental Quality Act (CEQA) and the Corona Historic Resources Ordinance—Chapter 17.63 of the Corona Municipal Code. The City of Corona 2018 Reclaimed Water Master Plan Project is located within the City of Corona Water Service area, which includes the City of Corona's jurisdictional boundary and portions of the unincorporated communities of El Cerrito and Coronita and Tesmescal Canyon. The City of Corona is the lead agency.

The following cultural resources constraints analysis and sensitivity study includes a review of relevant site records and reports on file with the Eastern Information Center (EIC) of the California Historical Resources Information System (CHRIS), a review of the Sacred Lands File (SLF) held by the Native American Heritage Commission (NAHC), Native American outreach, and archival research.

The record search of the CHRIS held at the EIC, is currently not available as the EIC is temporarily closed due to COVID-19, therefore the record search results provided for the *City of Corona General Plan Update: Cultural Resources Technical Report* (SWCA 2018) were utilized, as this report area largely overlaps with the City of Corona Water Service area. Only the northwest section of the City of Corona Water Service area is not included in the 2018 record search, no Project Components are located within this area, and this information can be added to subsequent draft of the report, if it becomes available. The record search identified 172 previously conducted cultural resources studies that have been conducted within the City of Corona Water Service area. The record search identified that 96 cultural resources have been previously recorded within the City of Corona water service area. Of these resources, 28 are prehistoric archaeological sites, 66 are historic archaeological sites, and two are multicomponent resources. Thirty previously recorded built environment resources have been identified within the City or Corona water service area. Thirteen of the previously recorded cultural resources are located within 100 feet of Project Component and an additional three previously recorded resources are intersected by a Project Component.

A search of the SLF held by the NAHC was positive, indicating that sacred lands have been identified within the RWMP project area. The NAHC provided a list of 37 tribal organizations and individuals to contact for additional information. Red Tail sent information request letters to the 37 tribal organizations and individuals. To date, three responses have been received.

In order to assess the cultural resources sensitivity of the RWMP project area Red Tail combined the results of the record searches, environmental factors, impacts of modern development and archival research to identify areas of the RWMP as high, medium, and low for cultural resources sensitivity. Due to the identification of numerous cultural resources, the geographic features of the project area being located within an alluvial area and bisected by the Santa Ana River and multiple drainages, and development of portions of the project area prior to the start of environmental laws which required archaeological studies in the mid-1970s, much of the City of Corona Water Service area was identified as moderate to high sensitivity for cultural resources, which could include prehistoric and/or historic archaeological resources. Areas with steep slopes on the western side of the project area and a disturbed mining area located on the eastern edge of the project area was identified as having a low sensitivity for cultural resources.

Prior to any future projects within the RWMP that could directly affect cultural resources, steps should be taken to determine the presence of cultural resources and the appropriate mitigation for any significant resources that may be impacted. CEQA requires that before approving discretionary projects the Lead Agency must identify and examine the significant adverse environmental impacts which may result from that project. A project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment (Sections 15064.5(b) and 21084). A substantial adverse change is defined as demolition, destruction, relocation, or alteration activities which would impair historical significance (Sections 15064.5(b)(1) and 5020.1). Any historical resource listed in or eligible to be listed in the California Register of Historical Resources and/or the Corona Register of Historic Resources, is considered to be historically or culturally significant. Resources which are listed in a local historic register or deemed significant in a historical resource survey as provided under Section 5024.1(g) are presumed historically or culturally significant unless "the preponderance of evidence" demonstrates they are not. Finally, a resource that is not listed in, or determined to be eligible for listing in, the California Register of Historic Resources, not included in a local register of historic resources, or not deemed significant in a historical resource survey may nonetheless be historically significant, pursuant to Section 21084.1.

The report includes an impact analysis to identify if implementation of the RWMP will adversely impact cultural and/or Tribal Cultural Resources. Construction of the Project Components of the RWMP could result in temporary vibration-related effects, which could potentially be significant, in the immediate vicinity of the construction of a built environment historical resource. Development in accordance with the proposed project could adversely impact known or previously unrecorded cultural resources that may be eligible to the CRHR or Corona Register and/or Tribal Cultural Resources. In addition, there is a potential to identify unexpected human remains during implementation of the RWMP. Four mitigation measures are recommended to mitigate potential adverse effects. The recommended mitigation measures include: construction related vibration; project specific archaeological surveys; the creation of an archaeological and Native American monitoring program; and the identification and treatment of Human Remains.

1. INTRODUCTION

1.1 PURPOSE OF STUDY

Red Tail Environmental (Red Tail) was contracted by Harris and Associates to conduct a cultural resources and Tribal Cultural Resources study in support of the Program Environmental Impact Report (PEIR) in order to evaluate if the City of Corona 2018 Reclaimed Water Master Plan Project (RWMP project) will cause adverse effects on significant historical resources or Tribal Cultural Resources, to identify areas which may be sensitive for cultural resources; makes recommendations for program-wide mitigation measures for future specific projects within the RWMP project area, and recommendations for future archaeological work that may be required in compliance with the California Environmental Quality Act (CEQA) and/or the Corona Historic Resources Ordinance—Chapter 17.63 of the Corona Municipal Code. The City of Corona (City) is the lead agency for the RWMP Project and the PEIR.

1.2 REGULATORY FRAMEWORK

1.2.1 CEQA and California Register of Historical Resources

CEQA requires that all private and public activities not specifically exempted be evaluated against the potential for environmental damage, including effects to historical resources. Historical resources are recognized as part of the environment under CEQA. The act defines historical resources as "any object, building, structure, site, area, or place that is historically significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California" (Division I, Public Resources Code, Section 5021.1[b]).

Lead agencies have a responsibility to evaluate historical resources against the California Register of Historical Resources (CRHR) criteria prior to making a finding as to a proposed project's impacts to historical resources. Mitigation of adverse impacts is required if the proposed project will cause substantial adverse change. Substantial adverse change includes demolition, destruction, relocation, or alteration such that the significance of a historical resource would be impaired. While demolition and destruction are fairly obvious significant impacts, it is more difficult to assess when change, alteration, or relocation crosses the threshold of substantial adverse change. The CEQA Guidelines provide that a project that demolishes or alters those physical characteristics of a historical resource that convey its historical significance (i.e., its character-defining features) is considered to materially impair the resource's significance. The CRHR is used in the consideration of historical resources relative to significance for purposes of CEQA. The CRHR includes resources listed in, or formally determined eligible for listing in, the NRHP and some California State Landmarks and Points of Historical Interest. Properties of local significance that have been designated under a local preservation ordinance (local landmarks or landmark districts), or that have been identified in a local historical resources inventory, may be eligible for listing in the CRHR and are presumed to be significant resources for purposes of CEQA unless a preponderance of evidence indicates otherwise.

Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the CRHR (Pub. Res. Code SS5024.1, Title 14 CCR, Section 4852), which consist of the following:

- Criteria 1: it is 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; or
- Criteria 2: it is associated with the lives of persons important to local, California, or national history; or

- Criteria 3: it embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master, or possesses high artistic values; or
- Criteria 4: it has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

1.2.2 California State Assembly Bill 52

California State Assembly Bill No. 52 (AB 52) amends CEQA by creating a new category of cultural resources, Tribal Cultural Resources, and new requirements for consultation with Native American Tribes. AB 52 came into effect July 1, 2015. Lead agencies are required to offer Native American tribes with an interest in tribal cultural resources located within its jurisdiction the opportunity to consult on CEQA documents. The procedures under AB 52 offer the tribes an opportunity to take an active role in the CEQA process in order to protect tribal cultural resources. If the tribe requests consultation within 30 days upon receipt of the notice, the lead agency must consult with the tribe.

A Tribal Cultural Resource is defined as a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and may be considered significant if it is (1) listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources; or (2) a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code §5024.1.

1.2.3 California State Senate Bill 18

California State Senate Bill 18 (SB 18) requires local city and county governments to consult with California Native American tribes to aid in the protection of traditional tribal cultural places ("cultural places") through local land use planning. SB 18 also requires the Governor's Office of Planning and Research (OPR) to include in the General Plan Guidelines advice to local governments for how to conduct these consultations.

The intent of SB 18 is to provide California Native American tribes an opportunity to participate in local land use decisions at an early planning stage, for the purpose of protecting, or mitigating impacts to, cultural places. The purpose of involving tribes at these early planning stages is to allow consideration of cultural places in the context of broad local land use policy, before individual site-specific, project-level land use decisions are made by a local government.

SB 18 refers to Public Resources Code §5097.9 and 5097.995 to define cultural places:

> Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine (Public Resources Code §5097.9).
>
> Native American historic, cultural, or sacred site, that is listed or may be eligible for listing in the California Register of Historic Resources pursuant to Section 5024.1, including any historic or prehistoric ruins, any burial ground, any archaeological or historic site (Public Resources Code §5097.995)

1.2.4 California Public Resource Code Section 5097.98

In the fall of 2006, AB 2641 was signed into law by Governor Schwarzenegger. This bill amended PRC 5097.98 to revise the process for the discovery of Native American remains during land development. The purposes of the revisions are to encourage culturally sensitive treatment of Native American remains and

to require meaningful discussions and agreements concerning treatment of the remains at the earliest possible time. The intent is to foster the preservation and avoidance of human remains during development. The law now requires that the following process be followed if human remains are discovered.

A. Whenever the Native American Heritage Commission receives notification of a discovery of Native American human remains from a county coroner pursuant to subdivision (c) of Section 7050.5 of the Health and Safety Code, it shall immediately notify those persons it believes to be most likely descended from the deceased Native American. The descendants may, with the permission of the owner of the land, or his or her authorized representative, inspect the site of the discovery of the Native American remains and may recommend to the owner or the person responsible for the excavation work means for treating or disposing, with appropriate dignity, the human remains and any associated grave goods. The descendants shall complete their inspection and make their recommendation within 48 hours of their notification by the Native American Heritage Commission. The recommendation may include the scientific removal and nondestructive analysis of human remains and items associated with Native American burials.
B. Upon the discovery of the Native American remains, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the landowner has discussed and conferred, as prescribed in this section, with the most likely descendants regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. The landowner shall discuss and confer with the descendants all reasonable options regarding the descendants' preferences for treatment.
    1. The descendant’s preferences for treatment may include the following:
        a. The nondestructive removal and analysis of human remains and items associated with Native American human remains.
        b. Preservation of Native American human remains and associated items in place.
        c. Relinquishment of Native American human remains and associated items to the descendants for treatment.
        d. Other culturally appropriate treatment.
    2. The parties may also mutually agree to extend discussions, taking into account the possibility that additional or multiple Native American human remains, as defined in this section, are located in the project area providing a basis for additional treatment measures.
C. For the purposes of this section, "conferral" or "discuss and confer" means the meaningful and timely discussion and careful consideration of the views of each party, in a manner that is cognizant of all parties' cultural values, and where feasible, seeking agreement. Each party shall recognize the other's needs and concerns for confidentiality of information provided to the other.
D. 1. Human remains of a Native American may be an inhumation or cremation, and in any state of decomposition or skeletal completeness.
    2. Any items associated with human remains that are placed or buried with Native American human remains are to be treated in the same manner as the remains, but do not by themselves constitute human remains.
E. Whenever the commission is unable to identify a descendant, or the descendants identified fail to make a recommendation, or the landowner or his or her authorized representative rejects the recommendation of the descendants and the mediation provided for in subdivision (k) of section 5097.94. if invoked, fails to provide measures acceptable to the landowner, the landowner or his or her authorized representative shall inter the human remains and items associated with Native American human remains with appropriate dignity on the property in a location not subject to further and future subsurface disturbance. To protect these sites, that landowner shall do one or more of the following:
    1. Record the site with the commission or the appropriate Information Center.
    2. Utilize an open-space or conservation zoning designation or easement.

3. Record a document with the county in which the property is located.

F. Upon the discovery of multiple Native American human remains during a ground disturbing land development activity, the landowner may agree that additional conferral with descendants is necessary to consider culturally appropriate treatment of multiple Native American human remains. Culturally appropriate treatment of such a discovery may be ascertained from review of the site utilizing cultural and archaeological standards. Where the parties are unable to agree on the appropriate treatment measures the human remains and buried with Native American human remains shall be reinterred with appropriate dignity, pursuant to subdivision (e).

G. Notwithstanding the provisions of Section 5097.9, this section, including those actions taken by the landowner or his or her authorized representative to implement this section and any action taken to implement an agreement developed pursuant to subdivision (1) of Section 5097.94 shall be exempt from the California Environmental Quality Act (Division 13 (commencing with Section 21000)).

H. Notwithstanding the provisions of Section 30244. this section, includes those actions taken by the landowner or his or her authorized representative to implement this section, and any action taken to implement an agreement developed pursuant to subdivision (1) of Section 5097.94 shall be exempt from the requirements of the California Coastal Act of 1976 (Division 20 (commencing with Section 30000)).

1.2.5 California Health and Safety Code Section 7050.5

California Health and Safety Code §7050.5 states that, in the event of the discovery of human remains outside of a dedicated cemetery, all ground disturbance must cease and the county coroner must be notified. If the remains are found to be Native American then the County Coroner must contact the Native American Heritage Commission within 24-hours.

1.2.6 Corona Historic Resources Ordinance

The Corona Historic Resources Ordinance is described within Chapter 17.63 of the Corona Municipal Code. The Corona Historic Resources Ordinance was established to promote the recognition, preservation, and continued viability of historic resources in Corona in the interest of prosperity, social and cultural enrichment, and the general welfare of the people of Corona. The Corona Historic Resources Ordinance is based on the following principles:

A. Encouraging knowledge and civic pride in the character of Corona's heritage and its many historic resources, in accordance with the declaration of intent and purpose in the city's General Plan;

B. Providing a process and register for the public identification and official recognition of Corona's many historic resources;

C. Establishing processes for the thoughtful review of plans for future projects and developments that could affect the management and preservation of Corona's historic resources;

D. Encouraging and assisting Corona's private property owners with the management and preservation of their own historic resources and properties;

E. Promoting the management and preservation of Corona's historic resources, including historic districts, that reflect the city's diverse cultural, social, artistic, economic, engineering, political and architectural heritage;

F. Enhancing Corona's cultural heritage as a general attraction to residents, tourists, businesses, industries and development enterprises, thereby strengthening Corona's general economy around its core heritage areas; and

G. Promoting the use of Corona's historic resources and districts for the education, enjoyment and welfare of the people of the city.

The Corona Historic Resources Ordinance also provided for the establishment of the Corona Register of Historical Resources and Corona Heritage Inventory. It also authorized the property preservation/tax

reduction program, historic markers program, and historic design guidelines, which set the standards by which buildings are evaluated for the Corona Register of Historic Resources and Heritage Inventory.

1.2.7 Corona Register of Historic Resources (Corona Register)

As a Certified Local Government (CLG) in the Federal Historic Preservation Program, the City pledged its commitment to historic preservation. The Corona Register of Historic Resources (Corona Register) includes landmarks, historic markers, and historic districts and the contributing historic resources within such historic districts. Sites, improvements and natural features within the city's boundaries that are listed on the California Register or National Register shall automatically be deemed listed on the Corona Register. The Corona Register has separate criteria for landmarks, historic districts and historic markers.

Landmarks are those physical elements of Corona's historical development that provide the community with its own unique civic identity and character. A site, improvement or natural feature shall be eligible for listing on the Corona Register as a landmark if the City Council finds that all of the following criteria are satisfied:

1. It has been in existence for a period of at least 50 years, or if less than 50 years old, is of exceptional importance to the community;
2. It has significant historic, cultural or architectural value and its designation as a landmark is reasonable, appropriate and necessary to promote, preserve and further the purposes and intent of this chapter;
3. It exhibits one or more of the following characteristics:
    a. It is associated with events that have made a significant contribution to the history of Corona, the region, the state or the nation;
    b. It is associated with the lives of persons significant in Corona's past;
    c. It embodies distinctive characteristics of a style, type, period or method of construction or a valuable example of the use of materials or craftsmanship;
    d. It exemplifies or reflects special elements of the city's cultural, social, economic, political, aesthetic, engineering, architectural or natural history;
    e. It is representative of the work of a notable builder, designer or architect;
    f. It exemplifies one of the best remaining architectural styles or types in a neighborhood or contains outstanding elements of architectural design, detail, materials or craftsmanship of a particular historic period;
    g. It is in a unique location or contains physical characteristics representing an established and familiar visual feature of a neighborhood;
    h. It is a potential source of archeological or paleontological interest;
    i. It is or contains a natural setting or feature that strongly contributes to the well being of the people of the city;
4. It has integrity of location, design, setting, materials, workmanship, feeling and association:
    a. Integrity is the authenticity of an historic resource's physical identity, as evidenced by the survival of characteristics that existed during the historic resource's period of significance, to be recognizable and to convey the reasons for its significance;
    b. A site, improvement or natural feature that has diminished historic character or appearance may still have sufficient integrity for the Corona Register if it retains the potential to yield significant scientific or historical information or specific data or retains sufficient character to convey the reasons for its significance. Thus, it is possible that a site, improvement or natural feature may not retain sufficient integrity to meet the criteria for listing on the California Register or National Register, but it may still be eligible for listing on the Corona Register;
    c. Integrity shall be judged with reference to the particular criterion or criteria which provide its eligibility. An improvement removed from its original location shall be eligible if it is

significant primarily for its architectural value or it is the surviving structure most importantly associated with an historic person or event.

A Historic District is a geographically defined area possessing a concentration of contributing historic resources that relate to each other and are unified by physical development or historical context. A defined area shall be eligible for listing on the Corona Register as an historic district if the City Council finds that all the following criteria are satisfied:

1. The defined area is a unified geographical area with precisely defined boundaries;
2. The defined area contains a significant concentration of individually recognized contributing historic resources united in character by an historic plan, physical development, cultural heritage, past events, an historic period or prehistory era, aesthetics design or architectural traditions;
3. At least 75% of the contributing historic resources in the defined area are 50 years of age or older and retain their original architectural character;
4. The civic and historic value of the contributing historic resources is greater as a collective whole than as individual historic resources;
5. The defined area has significant historic, cultural or architectural value and its designation as an historic district promotes, preserves and furthers the purposes and intent of this chapter.

Upon the listing of an historic district on the Corona Register, all identified contributing historic resources in the historic district shall be individually listed on the Corona Register, along with notation of the historic district's noncontributing resources.

A Historic Marker, is defined as a sign, plaque, monument, or other symbol which may be listed on the Corona Register by resolution of the City Council or placed by the City of Corona Historic Preservation Society for the purpose of recognizing one or more of the following:

1. Events that have made a significant contribution to the history of Corona, the region, the state or the nation;
2. Persons significant in Corona's past;
3. Examples of distinctive characteristics of a style, type, period or method of construction or a valuable example of the use of materials or craftsmanship;
4. Special elements of the city's cultural, social, economic, political, aesthetic, engineering, architectural or natural history;
5. The work of a notable builder, designer or architect;
6. Outstanding elements of architectural design, detail, materials or craftsmanship of a particular historic period;
7. A unique location or physical characteristic representing an established and familiar visual feature of a neighborhood;
8. An archeological or paleontological site; or
9. A natural setting or feature that strongly contributes to the wellbeing of the people of the city. The actual site, improvement or natural feature that is designated by the historic marker may or may not be listed, or may or may not be eligible for listing, on the Corona Register or the Corona Heritage Inventory.

1.2.8 Corona Heritage Inventory

The Corona Heritage Inventory includes only heritage properties listed by the Planning Commission. Heritage properties listed on the Corona Heritage Inventory may or may not be eligible for listing on the Corona Register. To be listed on the Corona Heritage Inventory a site, improvement, or natural feature must satisfy all of the following criteria:

A. An official survey describing the features, merits and quality of the site, improvement or natural feature has been prepared;

B. The site, improvement or natural feature is identified as a potential resource to be conserved because of its age, and either its context in the neighborhood, its association with a historic event or period or its significance to the architectural, engineering, scientific, economic, agricultural, educational, cultural, social, artistic, political or military history of Corona.

1.3 PROJECT DESCRIPTION

The proposed City of Corona 2018 Reclaimed Water Master Plan is an update to the City of Corona's adopted Reclaimed Water Master Plan (2001), which provides guidance to create infrastructure to efficiently use treated effluent from its existing and future wastewater reclamation facilities (WRFs) to reduce dependence on imported water and groundwater. The project identifies the extent and types of reclaimed water development needed to achieve the City's physical, economic, and environmental goals.

1.3.1 Project Purpose

The primary purpose of the project is to assist the City with meeting its goals for reclaimed water use through implementation of appropriate projects, programs, and additional studies.

1.3.2 Project Objectives

The project objectives are as follows:

1. Expand and improve the City's recycled water program in accordance with Ordinance 2854 (Recycled Water Rules and Regulations)
2. Prioritize and implement system improvements pursuant to the City of Corona 2018 Reclaimed Water Master Plan to maximize reclaimed water supply availability and significantly reduce the use of potable water
3. Improve water supply system performance by facilitating supply management and maximizing water resources
4. Efficiently implement priority improvement projects to manage and distribute new sources of water supply as they become available

1.3.3 Project Components

Future Project Components are categorized as sources of supply, large distribution pipelines, medium distribution pipelines, and small distribution pipelines. In total, 29 Project Components are included in the RWMP. These include: six sources of supply; four large distribution pipelines; nine medium distribution pipelines; and ten small distribution pipelines.

1.4 PROJECT LOCATION

1.4.1 Regional Location

The City is in the northwestern portion of the County of Riverside (County), near the convergence of the Counties of Los Angeles, Orange, and Riverside, 45 miles southeast of the City of Los Angeles, as shown on Figure 1. The City is in a valley framed by mountains and the Prado Flood Control Basin. The City is bordered by the City of Norco to the north, the City of Riverside to the east, the County to the west and south, the Cleveland National Forest to the south/southwest, and the Prado Flood Control Basin to the northeast.

The City is defined in the County by its transportation infrastructure. Two major freeways and one railroad transect the City. Riverside Freeway (State Route 91) runs east–west directly north of the City's transportation routes to the economic center of the County of Orange from the Inland Empire, while

Interstate 15 runs north–south. In addition, the Burlington Northern Santa Fe Railway transects the center of the City, running parallel to State Route 91.

1.4.2 Water Service Area

The City's water service area encompasses approximately 39 square miles and provides potable and reclaimed water infrastructure. The water service area boundary differs slightly from the City's jurisdictional boundary because it also includes the unincorporated communities of El Cerrito and Coronita and parts of Tesmescal Canyon, as shown on Figure 2. The water service area is bordered by the neighboring Cities of Norco and Eastvale to the north and the City of Riverside to the northeast. The eastern portion of the water service area is generally bounded by unincorporated County lands, including the unincorporated community of Home Gardens. The southern and western portions of the water service area are bounded by the Cleveland National Forest and other County lands. The Prado Flood Control Basin is adjacent to the City's northwestern corner.

The following study considered direct impacts within the RWMP project area only, shown on Figure 2. As the project consists of a master plan which will be used to guide future projects there are no anticipated indirect or cumulative impacts that would necessitate a larger impact area outside of the direct RWMP project area.

The RWMP project area is shown on five USGS 7.5' Quad Maps (Figures 3-9). Specifically, on the *Prado Dam* Quad Map within Township 3 South, Range 7 West, Section 30; Township 3 South, Range 8 West Section 25; and unsectioned portions of the La Sierra Yorba Land Grant. *Black Star Canyon* Quad Map within Township 3 South, Range 7 West, Sections 32 and 33; Township 3 South, Range 8 West, Section 36, Township 4 South, Range 7 West, Section 5; and unsectioned portions of the La Sierra Yorba Land Grant. Corona South Quad Map within Township 3 South, Range 7 West, Section 33, Township 4 South, Range 6 West, Sections 5, 8, 16, 17, 18, 19, 20, 21, and 22; Township 4 South, Range 7 West, Sections 5, 9, and 10; unsectioned portions of the La Sierra Yorba Land Grant; unsectioned portions of the Sobrante De San Jacinto Land Grant. *Lake Matthews* Quad Map within Township 4 South, Range 6 West, Section 22; unsectioned portions of the Sobrante De San Jacinto Land Grant. *Corona North* Quad Map within unsectioned portions of the La Sierra Yorba Land Grant and unsectioned portions of the Sobrante De San Jacinto Land Grant.

1.5 PROJECT PERSONNEL

Red Tail Principal Investigator Shelby Castells, M.A., RPA served as the primary author of this report, and managed the study. Red Tail Senior Archaeologist Spencer Bietz contributed to the report and prepared the report figures. Resumes of key personnel are included in Appendix A.

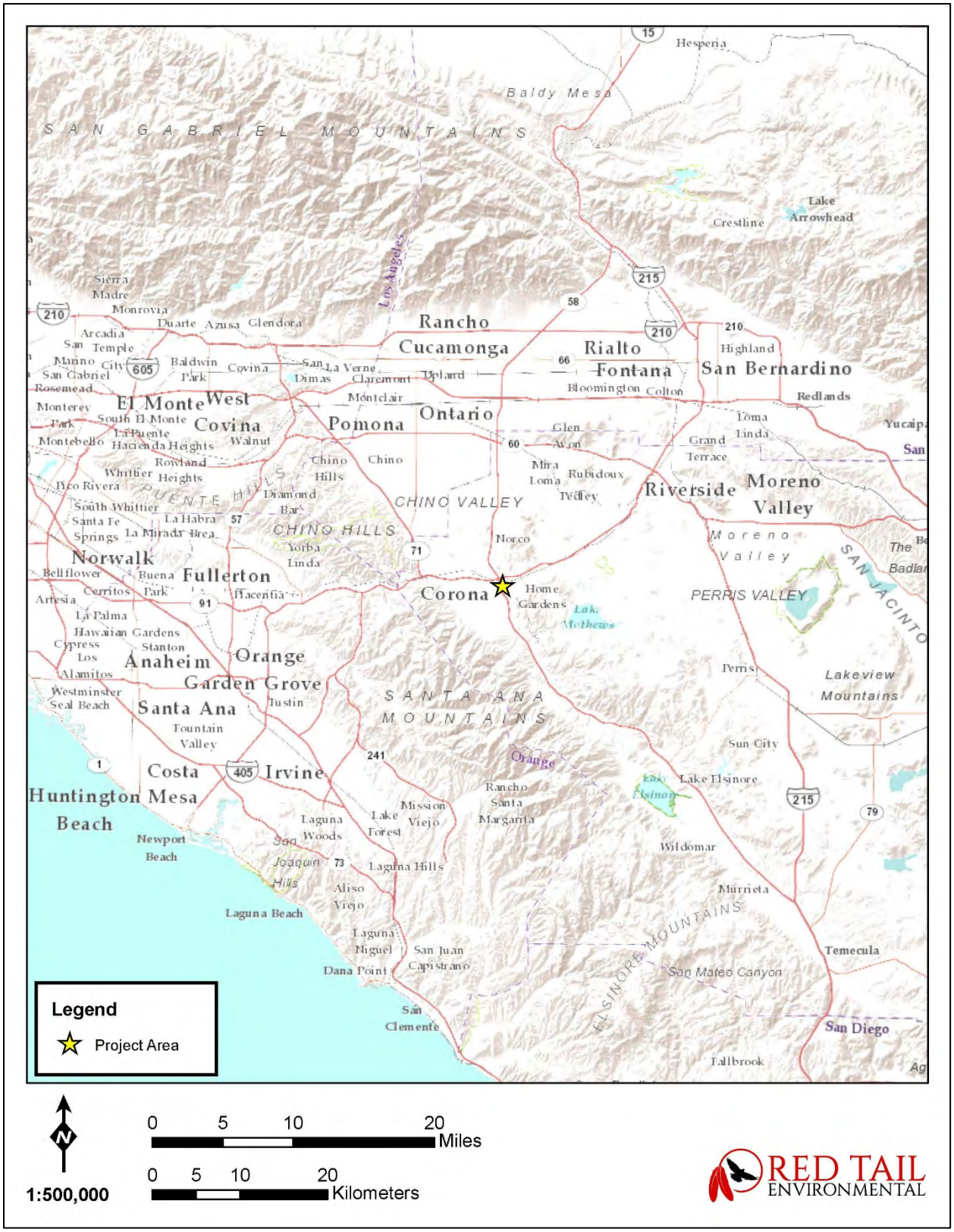


Figure 1. Project Vicinity Map.

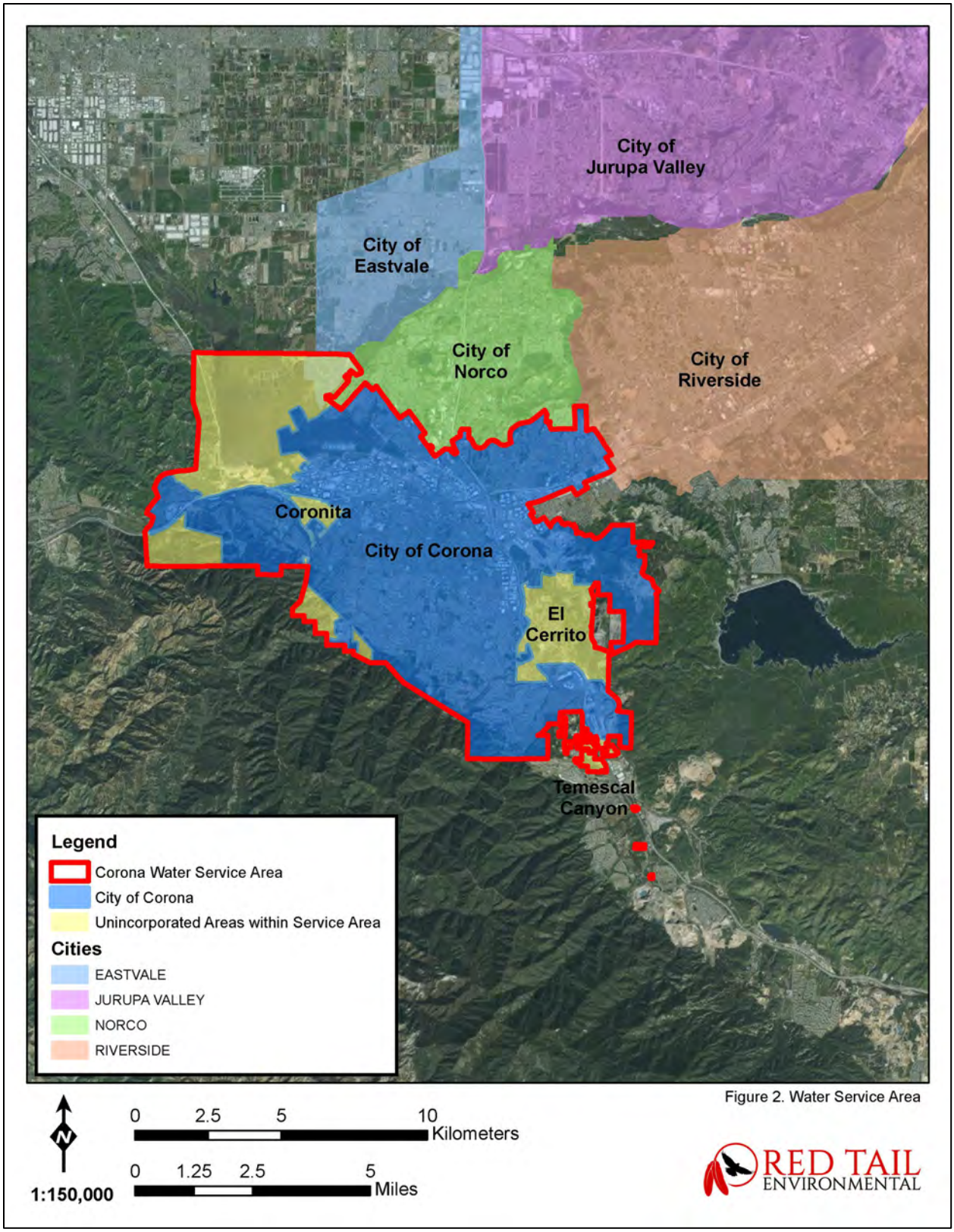


Figure 2. Project Area shown on an aerial photograph.

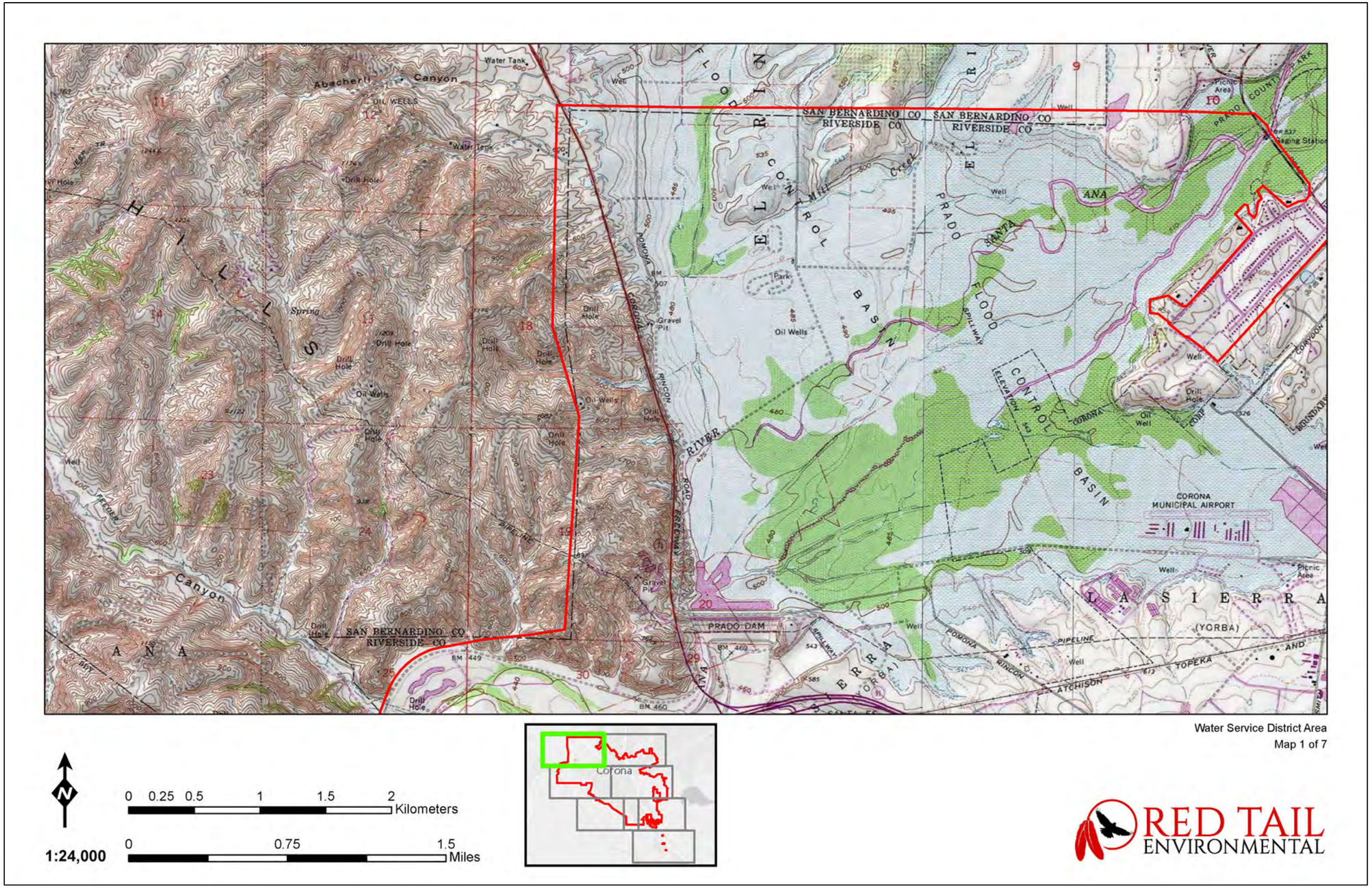


Figure 3. Project area shown on the USGS 7.5' Topographic Quadrangle (Map 1 of 7).

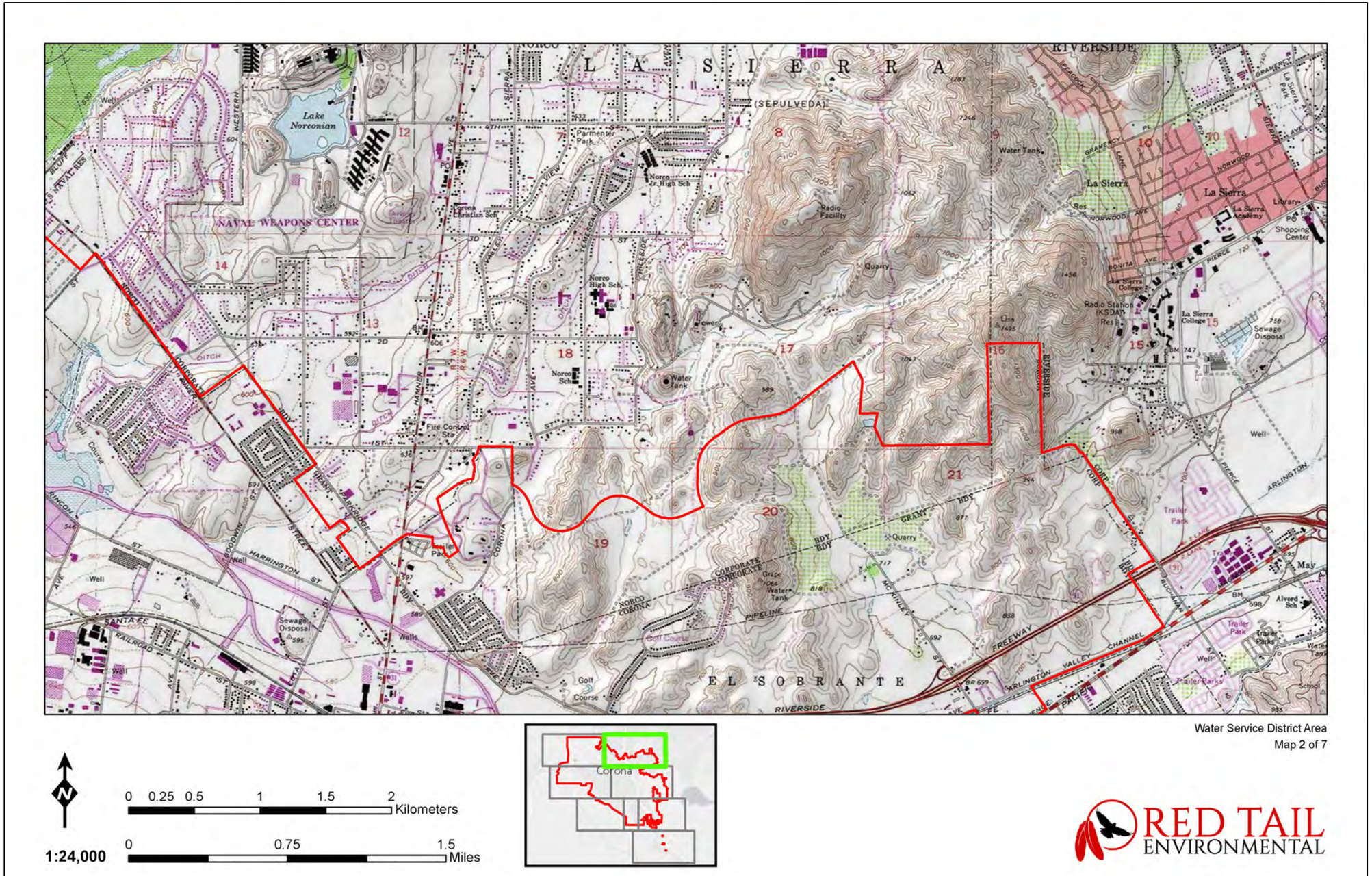


Figure 4. Project area shown on the USGS 7.5' Topographic Quadrangle (Map 2 of 7).

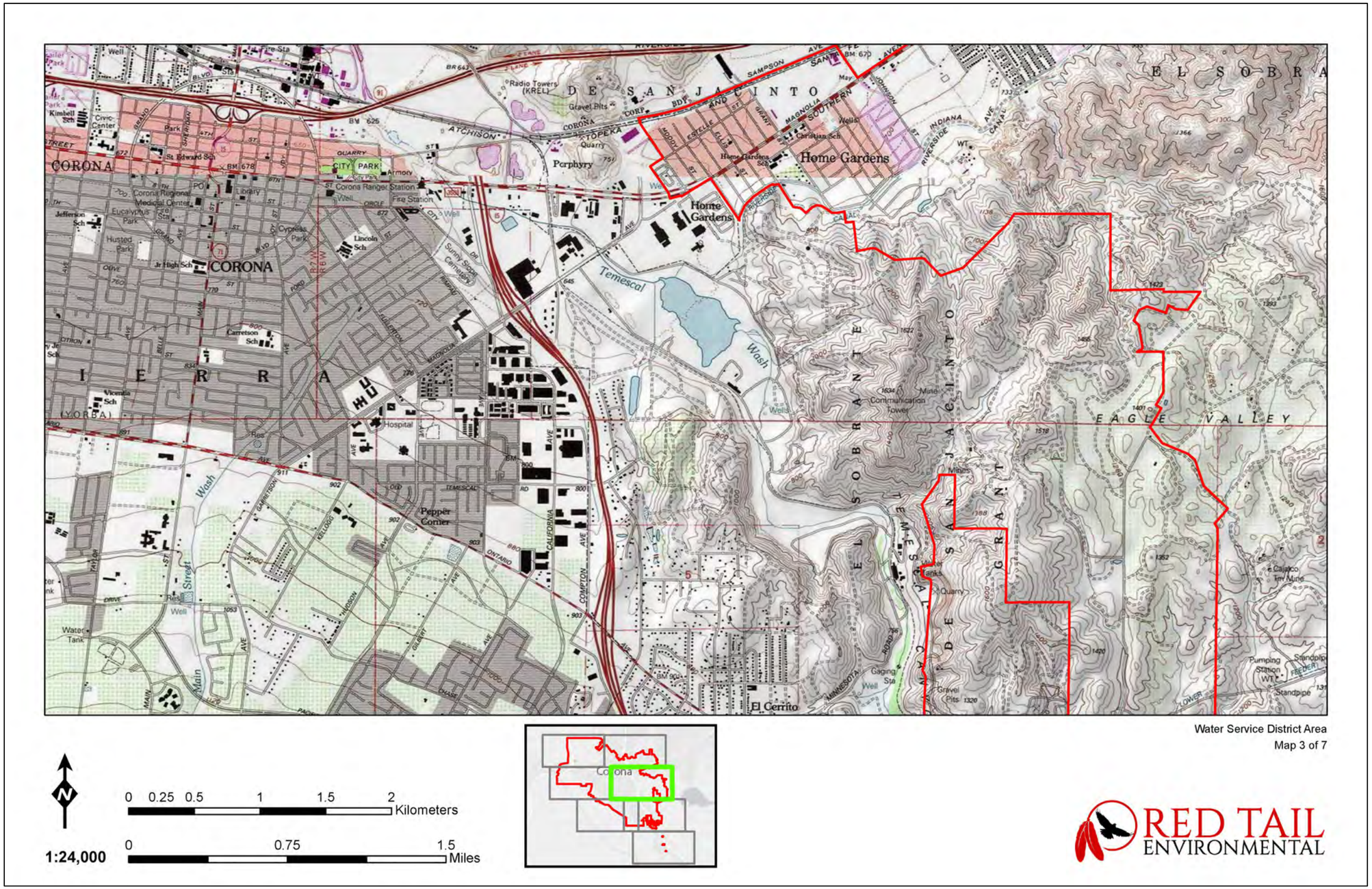


Figure 5. Project area shown on the USGS 7.5' Topographic Quadrangle (Map 3 of 7).

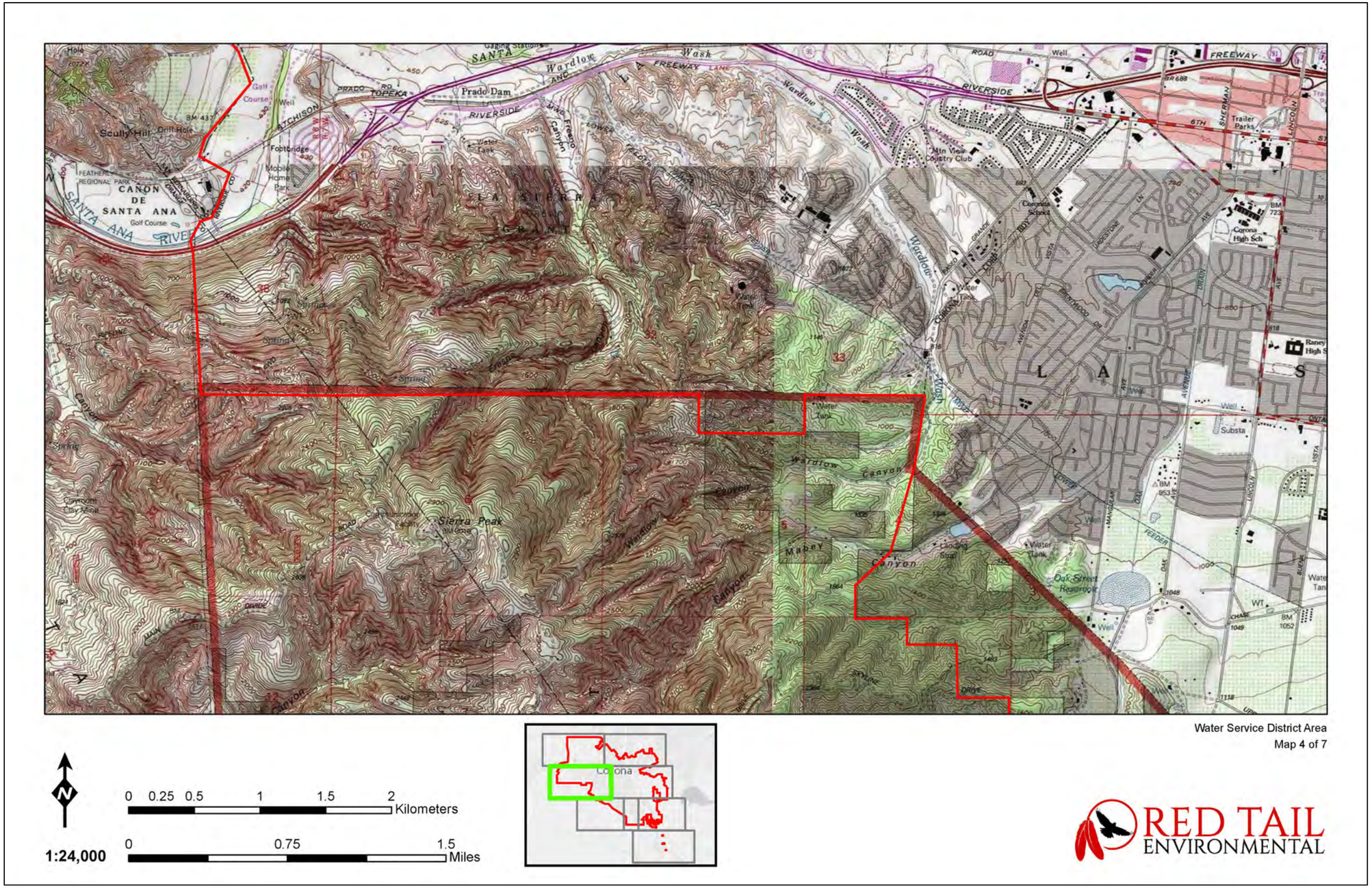


Figure 6. Project area shown on the USGS 7.5' Topographic Quadrangle (Map 4 of 7).

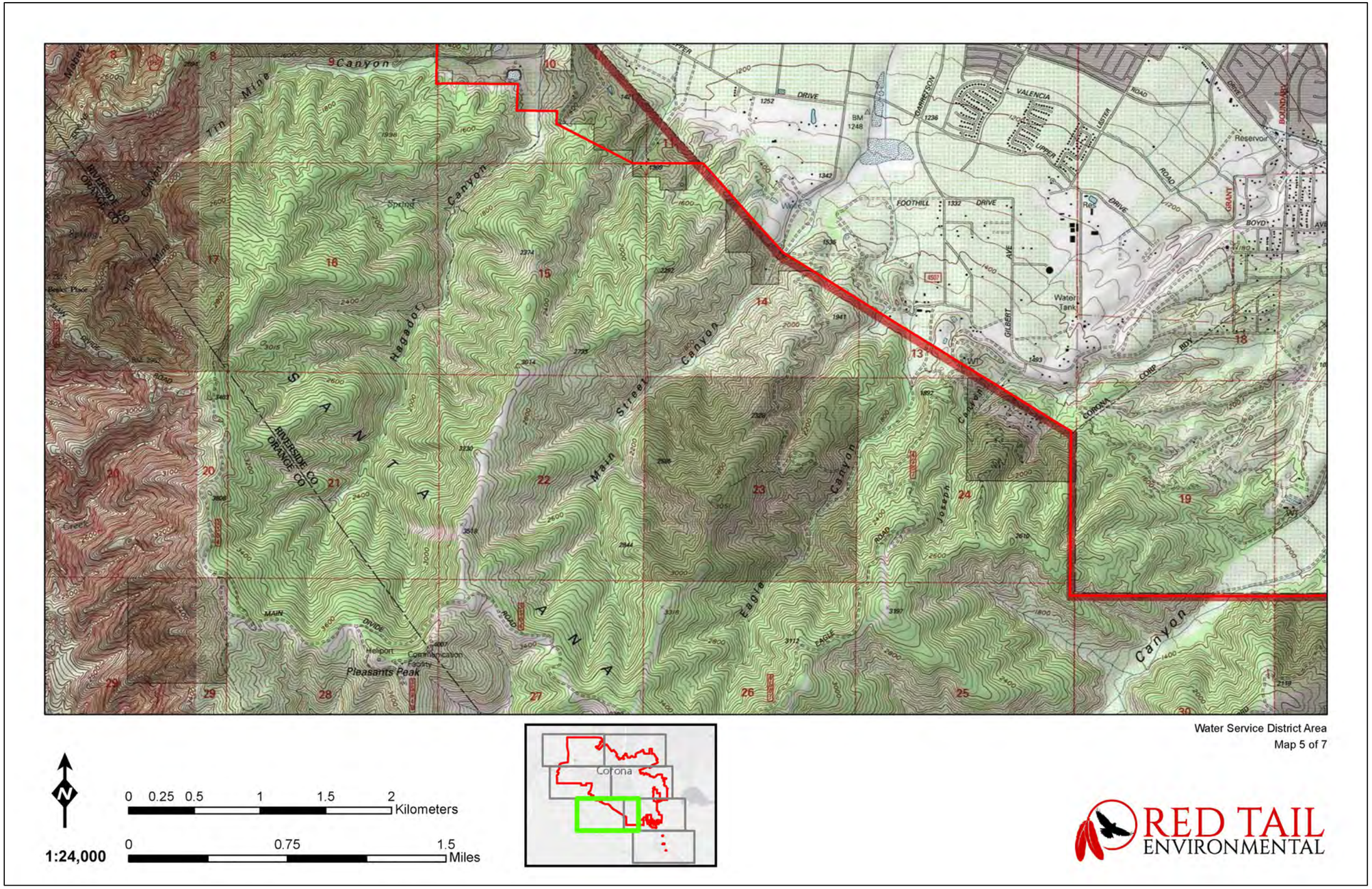


Figure 7. Project area shown on the USGS 7.5' Topographic Quadrangle (Map 5 of 7).

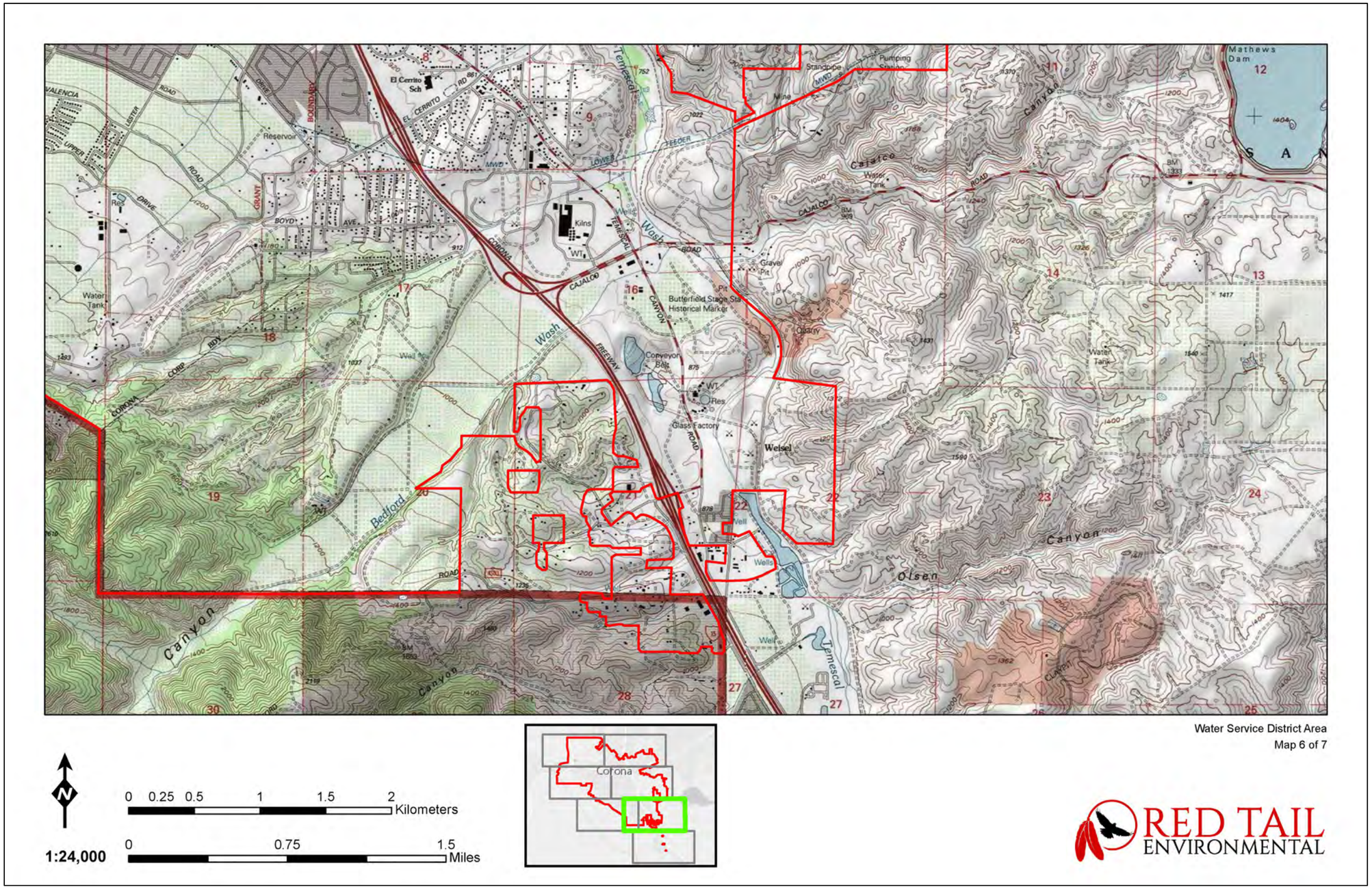


Figure 8. Project area shown on the USGS 7.5' Topographic Quadrangle (Map 6 of 7).

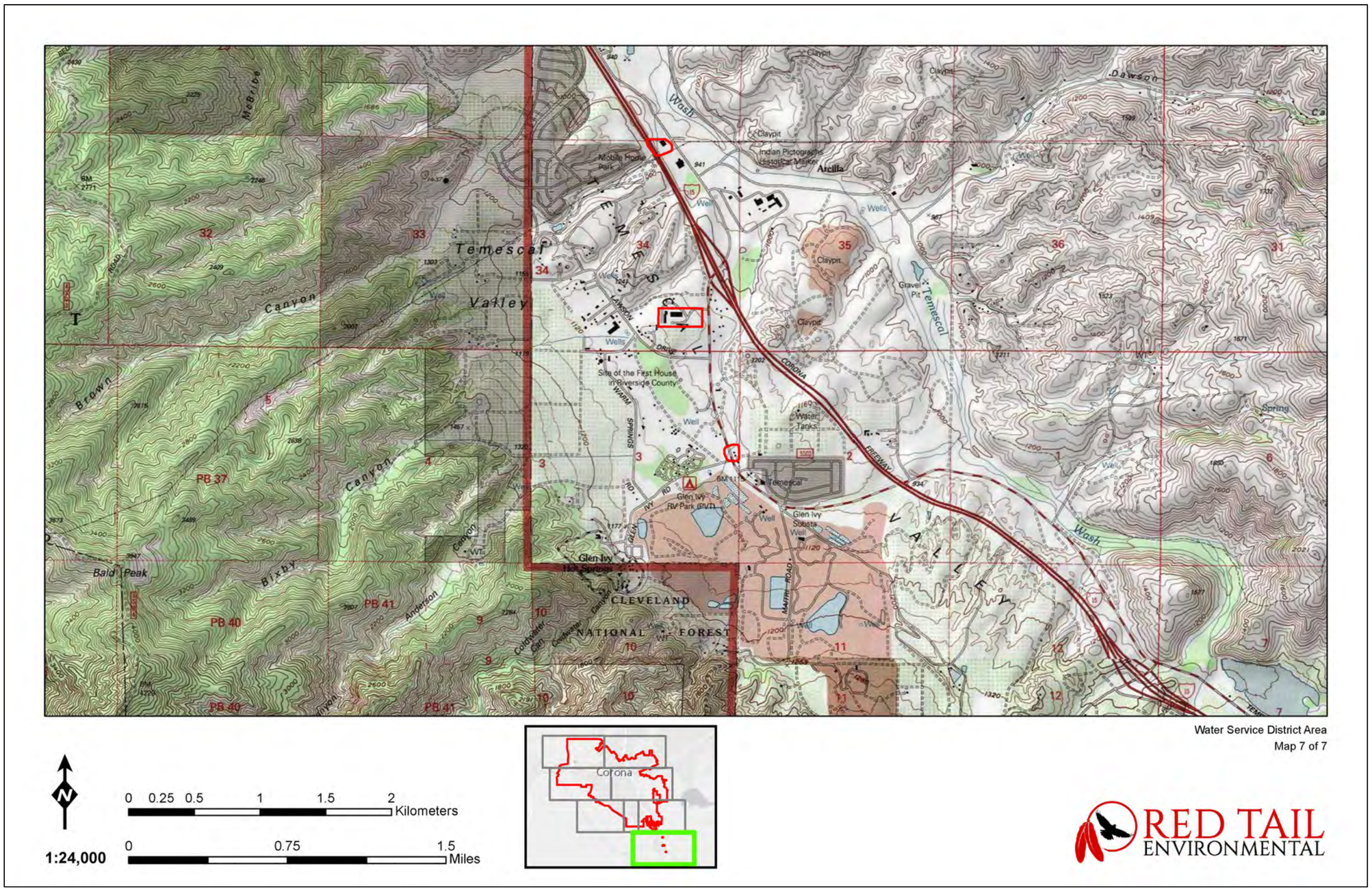


Figure 9. Project area shown on the USGS 7.5' Topographic Quadrangle (Map 7 of 7).

2. SETTING

2.1 NATURAL SETTING

Geologically, the RWMP project area is located within the Peninsular Ranges Province in Southern California. Much of the project area lies within the Perris block, which is located between the Elsinore and San Jacinto fault zones. The southern portion of the project area also encompasses the Chino fault zone (Gray et al. 2002a). The portion of the Peninsular Ranges beneath the project area is composed primarily of a variety of Cretaceous plutonic rocks, primarily monzogranite and granodiorite, but also including micropegmatite granite and gabbros, amongst others. Monzogranites of the Cajalco pluton, a large composite intrusion that extends south and east of the project area, are the most widespread of the group (Gray et al. 2002a). The southern portions of the project area border the base of the Santa Ana Mountains, whose basement rocks are composed primarily of Bedford Canyon Formation, a fossiliferous limestone containing faunal remains that suggest the Formation was formed in black smoker environments (Gray et al. 2002b). Santiago Peak Volcanics unconformably overly and intrude the Bedford Canyon Formation, and consist of Cretaceous age basaltic andesite, andesite, dacite, rhyolite, breccia, and volcaniclastic rocks. Volcanic activity occurring during the same time the Santiago Peak Volcanics were formed also hydrothermally altered the rocks, and minor serpentine and associated silica-carbonate rock occur in association (Gray et al. 2002b).

The Santa Ana River is the largest drainage within the project area and is fed by several tributaries including Temescal Wash and Chino Creek. Distal parts of alluvial fans at the base of the San Gabriel Mountains dominate the alluvial deposits north of the Santa Ana River. Older alluvial fan deposits resting on remnants of early Quaternary to late Tertiary nonmarine sediments comprise the majority of alluvial deposits south of the Santa Ana River, especially within areas between the Santa Ana and Temescal Wash (Gray et al. 2002a). The underlying Quaternary and late Tertiary sediments were initially deposited by an ancestral Santa Ana River, and several non-contiguous remnants of late Tertiary marine sandstone including some conglomerate lenses are present between Norco and Temescal Wash (Gray et al. 2002a). This late Tertiary (Pliocene) sandstone was deposited in paleoenvironmental conditions similar to present-day shorelines of Monterey, California, with much of the deposits accumulating a rocky shoreline developed in the granitic rocks. South of Temescal Wash, Pleistocene and Holocene alluvial fan deposits accumulate from erosion of the Santa Ana Mountains (Gray et al. 2002b).

The study area encompasses the northern end of the Elsinore Fault zone, a major active right-lateral strike-slip fault zone of the San Andreas Fault system (Gray et al. 2002b). The Elsinore fault serves as the dividing line between the Santa Ana Mountains (west of the fault) and the Perris block (east of the fault). Sedimentary rocks of the late Cretaceous and Paleogene along with some Neogene rocks are present within the Elsinore Fault Zone. Middle Miocene Topanga Formation marine sandstones are present within the fault zone southeast of the study area and are underlain by nonmarine undivided Sespe and Vaqueros Formations, both composed predominately of sandstone. Much of the fault zone contains Silverado Formation, a mix of sandstone, siltstone, and conglomerate of the marine and nonmarine Paleocene era (Gray et al. 2002b).

The majority of the project area can be characterized as an alluvial basin that gently lowers in elevation as it proceeds north to the Santa Ana River. The west and southwestern portions of the project area are bordered by the Santa Ana Mountains, containing steep undeveloped slopes. Elevations within these areas range between 850 feet above mean sea level (AMSL) to upwards of 2,275 feet AMSL. The east and southeastern portions of the project area are bordered by the Temescal Mountains, ranging between 750 feet and 1,580 feet AMSL. The north and northeastern portions of the project area consist of a north-trending alluvial basin proceeding towards the Santa Ana River, with the northern limit of the project area

bordered by Prado Regional Park and the Prado Regional Control Dam. The lowest elevation within the project area (425 feet AMSL) is located in the northwestern limits as the river begins its westward journey out of Riverside County towards Orange County and the cities of Yorba Linda, Anaheim, and Orange, finally ending at the Pacific Ocean.

The vast majority of the project area contains urban development, with undeveloped areas primarily being located along the foothills and steep slopes of the Santa Ana Mountains and Temescal Mountains. Within developed areas, isolated areas contain native vegetation, mostly within associated riparian drainages. Undeveloped areas along the Santa Ana Mountain slopes contain a mix of riparian drainages and canyon slopes, with vegetation communities including chaparral and riparian forest and scrub. Undeveloped areas along the slopes of the Temescal Mountains also contain a mix of riparian drainages and canyon slopes, with native vegetation communities including coastal sage scrub, chaparral, riparian woodland, and valley grassland.

The City of Corona project area contains a Mediterranean climate with hot dry summers and cooler wetter winters. Mean annual precipitation for the City is 13.5 inches of rainfall a year, with an average of 65 degrees Fahrenheit with average highs 79 degrees Fahrenheit and lows of 51 degrees Fahrenheit (USDA 2020).

2.2 CULTURAL SETTING

2.2.1 Prehistoric Period

While no single chronology is agreed upon, archaeologists generally concur that human occupation within Southern California spans at least the last 14,000 years. It was believed that people first came to North and South America over the Bering Land Bridge, however recent studies have identified that this ice-free corridor was not passable until 13,000 years ago and an alternate coastal route has been proposed. The Pacific Northwest coast was deglaciated by approximately 14,000 B.C. and travel along the Pacific Coast in boats would have been possible during this period. A widespread kelp forest could have created a "kelp highway" with enough resources to support people entering North America (Erlandson et al. 2007, Masters and Aiello 2007, Gallegos 2017). Erlandson (2007:56) contends that "it seems most likely that the peopling of the Americas included both coastal and interior migrations of peoples from northeastern Asia and Beringia, with an earlier migration possibly following the northern Pacific coast".

In Riverside County and the surrounding area, there is no consensus on times or terms in which human occupation started. It is unknown if the first people arrived in Riverside County via the coast or from the pluvial lakes within the Great Basin to the east, as both locations contain archaeological sites with early dates (Gallegos 2017). In addition, the inland valleys of Southern California, have been less intensively studied than the desert and coastal regions and therefore a variety of cultural periods have been suggested but generally researchers have not reached a consensus on the start or phases of prehistoric occupation of the area (Horne and McDougall 2007). Overall, three general cultural periods are recognized: the Paleo-Indian Period, the Archaic Period and the Late Prehistoric Period.

Paleo-Indian Period / San Dieguito Period (ca. 12,000 to 8,000 YBP)

As in most of North America, the Paleo-Indian Period is the earliest recognized period of California prehistory and coincides with the end of the late Pleistocene, circa 11,000 to 13,000 YBP (years before present). The environment was cool and moist, with deep pluvial lakes in the desert and basin lands (Moratto 1984). However, by the end of the late Pleistocene, the climate became warmer, causing glaciers to melt and sea levels to rise. Inland lakes began to recede and evaporate and there was a great deal of

erosion in the coastal areas. The warmer climate also resulted in major vegetation changes and the extinction of Pleistocene megafauna (Moratto 1984, Martin 1967, Martin 1973, Fagan 1991).

Paleo-Indian sites have been identified across most of North American, often referred to as the Clovis Complex. The Clovis Complex is defined by the use of large fluted projectile points and other large bifacial stone tools. Within Southern California and the Colorado Desert the Clovis Complex is referred to as the Western Stemmed Point Tradition (WSPT) and was characterized by leaf shaped and large stemmed projectile points, scrapers and other stone tools. Archaeological evidence of the WSPT has been found across the western interior of North America with small regional variations (Gallegos 2017, Sutton 2016, Warren 1968). Similar archaeological remains are also known as the Lake Mohave Complex (Warren 1968). Overall, ground stone use was infrequent in San Dieguito archaeological remains, leading to the belief that the San Dieguito were highly mobile groups and their subsistence practices focused on the hunting of large game.

Several isolated fluted points have been recorded in Southern California, but none have been recorded near the project area in associated with radiocarbon dates or in association with Pleistocene fauna (Rondeau et al. 2007). In Riverside County, only one isolated fluted point has been identified on the surface of a site in the Pinto Basin in the central part of the county (Campbell and Campbell 1935, Dillon 2002:113). Fluted points have been dated outside of California to 13,500 years before the present. The earliest known archaeological sites near the Project area, with reliable dates, are from the Channel Islands. The Arlington Springs site on Santa Rosa Island dates to 13,300 years ago, and the Daisy Cave site on San Miguel Island dates to 12,300-11,120 years ago (Lightfoot and Parrish 2009). Daisy Cave mentioned above, is one of the largest, early Holocene archaeological deposits that has been excavated. The study identified over 18 types of fish, multiple shellfish, marine mammals, and birds remains, showing that people relied on a wide assortment of marine resources as early as 8000 B.C., rather than subsisting on large mammal hunting (Erlandson, et al., 2007). Over 25 shell midden sites that date to between 12,000 and 8,000 years ago have been recorded on the Channel Islands. On the mainland, a site near San Luis Obispo dates to 10,300-9,650 years ago and a several sites on Cedros Island in Baja California date to 12,000 years ago (Lightfoot and Parrish 2009). Other early sites in the vicinity of the Project area consist of the C.W. Harris Site (SDI-149), in San Diego County, with radiocarbon dates ranging from 9,030 YBP to 8,540 YBP (Byrd and Raab 2007, Gallegos 2017) and within Orange County, there are sites dating from 9,000 to 10,000 years ago (Macko 1998a:4, Mason and Peterson 1994:55–57) and the Elsinore site (CA-RIV-2798-B), has deposits dating as early as 8,580 YBP (Grenda 1997:260). As, no archaeological sites dating to the Paleoindian Period have been identified within the vicinity of the Project Area. It is unknown if the lack of Paleoindian Period sites relates to a lack of archaeological data or is evidence that the vicinity of the Project Area was a less sustainable area than the interior desert or the coastal regions. During this period the desert interior may have been more suitable to prehistoric occupation than the interior valleys of southern California and it is more likely that Paleoindian populations in southern California were centered on the coastal or interior desert regions or around the few large, reliable, drought-resistant water sources present within the inland valley areas (Horne and McDougall 2007).

When Paleo megafauna began to become extinct, Paleo-Indian peoples had to focus on different subsistence strategies (Erlandson et al., 2007). Recent studies along the Southern California coast have focused on the diversity of subsistence strategies during this period, acknowledging the use of smaller animals and plant foods as staples, with limited evidence for big game hunting. Byrd and Raab argue that an environmental change from 10,000 to 8,000 cal. B.C. caused warming and drying conditions which shrunk the interior lakes and streams in Southern California's deserts and spurred the change from a reliance on large game hunting to a focus on a variety of subsistence strategies (Byrd and Raab 2007). Archaeological research across Southern California has shown the use of shellfish, marine mammals, and fish declined proportionately with distance from the coast. Less is known about plant use in interior sites aside from the

fact that an increase of milling tools is present suggesting that plant resources were heavily relied upon during this early period (Erlandson et al., 2007).

Archaic Period / Millingstone Horizon (ca. 9500/8000 to 1500 YBP)

The Archaic Period within the vicinity of the Project area was defined by a lengthy time period with little change within the archaeological record. In contrast to the Paleoindian Period the archaeological record within the Archaic Period consisted of a tool kit that focused on collection and processing of small plant seeds and hunting of a variety of medium and small game animals (Byrd and Raab 2007, Hale 2009, Rogers 1945, Warren 1968). Across Southern California this period is often referred to as the Millingstone Horizon, and is often divided into the Early, Middle, and Late Archaic Period. In addition to the Early, Middle, and Late Archaic Period, it was also referred to as the Encinitas Tradition by Warren (1968), the La Jolla Tradition, in San Diego County, and the Greven Knoll Pattern (SWCA 2018, Sutton 2010, Sutton 2011). Sutton created the Greven Knoll Pattern nomenclature as a redefined interpretation of the Encinitas Tradition, and used it to refer to all expressions of the inland Milling Stone Horizon in Southern California north of San Diego County (Sutton 2010).

There is a discrepancy on the start of the Millingstone Horizon, while Lightfoot and Parrish (2009) argues that early milling stone assemblages show that by 9,000 years ago milling tools were in use and that seeds and nuts must have been a dominate food source, other archaeologists argue that the Millingstone Horizon is generally attribute to the Middle to Late Holocene Period and has been identified across much of central and southern California by ca. 8,000 to 7,000 YBP (Byrd and Raab 2007, Hale 2009, Moratto 1984).

Interior archaeological sites from this period were thought to have been left by seasonally mobile groups with small settlements, based on the availability of food resources. There is little archaeological evidence for group size and type and use of habitation structures within Riverside County for the middle Holocene. The Millingstone Horizon or Archaic Period tool kit at inland sites focused on collection and processing of small plant seeds and hunting of a variety of medium and small game animals; while along the coast there was a reliance on marine resources (Byrd and Raab 2007, Hale 2009, Rogers 1945, Warren 1968). Artifacts from this period consist of grinding implements (manos and metates), atlatl or dart projectile points, quarry-based tools, as well as lithic choppers and scrapers that indicate the focus was on collection and processing of small plant seeds and hunting of a variety of medium and small game animals (Byrd & Raab 2007, Hale 2009, Rogers 1945, Warren 1968).

Mortuary practices consist of flexed inhumations which are often accompanied by grave goods of milling stones and other artifacts. This seems to represent a more sedentary lifestyle with a subsistence economy based upon the use of a broad variety of terrestrial resources than identified during the Paleoindian Period. Research indicates that residential bases or camps were moved in a seasonal round (de Barros 1996, Mason 1997, Koerper 2002), with some sites occupied year-round, with portions of the village population leaving at certain times of the year to exploit seasonally available resources.

During this lengthy period very little technological changes are identified within the archaeological record until approximately 5,000 years ago when there was an increase in sedimentation along the coast. This transformed the estuaries into shallow wetlands, closed several of the lagoons, transformed the coastal areas into sand and mudflats, and limited the kelp forests, causing the coastal region to have a lower level of subsistence resources than in the past. During this time the deserts became more arid, and there was an increase in use of the inland valleys within the vicinity of the Project Area (Byrd and Raab 2007, Gallegos 2007, Masters and Aiello 2007).

Early Archaic Period (ca. 9500/8000 to 7000 YBP)

Horne and McDougall (2007) report that there is little archaeological evidence within Riverside County during this period. However, several sites within the region date to the Early Archaic Period. The first consists of a single human burial dating to 7380 ± 300 B.P., which was capped by several large highly shaped metates. The second was a small temporary camp dated by obsidian hydration data and stratigraphic information to the Early Archaic Period (Horne and McDougall 2007:19). An additional site within Riverside County, SDI-6069, within the San Jacinto Valley area was identified in an alluvial fan just above the floor of the San Jacinto Valley. The site contains several different cultural occupations, and the lowest level contained radiocarbon dates from 7940 to 8370 B.P., while radiocarbon from the upper component of the site dated to 2230 B.P., within the Late Archaic Period (Horne and McDougall 2007:19). An additional site, SDI-2798/H, known as the Lake Elsinore site, contained one radiocarbon date from 8400 ± 60 B.P. Additional radiocarbon dates show habitation of the site during the Middle Archaic Period as well (Horne and McDougall 2007:19).

Artifacts associated with these Early Archaic Period sites include flaked stone tools and ground stone tools. Data recovery excavation within SDI-6069 identified a larger variety of artifact types including an extensive variety of flaked and ground stone tools, marine and terrestrial faunal remains, and bone and shell tools and ornaments. Crescents have also been found sparsely during this period.

Overall evidence of Early Archaic Period habitations in the vicinity of the Project area are scarce, identifying that during this period the region around the Project area was likely too arid to support sedentary residential occupation, and the few sites dating to this time period with evidence of a larger habitation area were found near large inland water sources (Horne and McDougall 2007:19).

Middle Archaic Period (ca. 7000 to 4000 YBP)

During the Middle Archaic Period environmental conditions changed as the deserts became more arid and the coastal estuaries became less productive for shellfish and other food sources, causing a depopulation along the coastal zone, and settlements shifted to inland river valleys with an intensification of terrestrial game and plant resources (Byrd and Raab 2007, Gallegos 2007, Masters and Aiello 2007). Gallegos states that during this period to adapt to the changing environmental condition people changed their settlement patterns by increasing their use of plant and terrestrial animal use, which is evidence in the archaeological record through an increase in habitation areas near oak and grassland resources and away from the coastal zone (Gallegos 2007). Therefore, the inland valleys of western Riverside County became a more hospitable environment and there is a significantly larger number of archaeological sites dating to this period within the vicinity of the Project area (Horne and McDougall 2007).

The archaeological record dating to the Middle Archaic Period has identified several intensively used residential bases, and numerous temporary camps. Diagnostic artifacts include Pinto and Silver Lake projectile points and other large leaf-shaped projectile points, choppers, crescents, large drills, manos and metates inhumations, and a variety of flaked and groundstone tools. Additional non-utilitarian items include beads, pendants, charmstones, discoidals, spherical stones, and cogged stones (Horne and McDougall 2007). During this period, it is largely unknown if occupations of inland and coastal sites represent seasonal movement by the same groups of people, or if coastal sites represent a more permanent occupation, while inland groups followed a more mobile subsistence round.

Late Archaic Period (ca. 4000 to 1500 YBP)

The Late Archaic Period corresponds to a period of increased moisture in Southern California, followed by another dry period. This period is also referred to as the Intermediate Period by Wallace (1955) and the Campbell Tradition (Warren 1968). Horne and McDougall (2007) report that archaeological site types during this period range from residential bases with large diverse artifact assemblages, abundant faunal

remains and cultural features to temporary bases, camps and task specific activity areas. More intensely used archaeological sites from the Late Archaic Period are often found adjacent to permanent water sources while smaller or temporary sites are found on upland benches or adjacent to alluvial fans (2007:23). In contrast to the Early and Middle Archaic Periods, archaeological sites from the Late Archaic Period show a longer and more frequent reuse suggesting an increase in sedentism. Generally, the artifact assemblage is similar to the Early and Middle Archaic Period, focusing on large projectile points, used for spears and atlatls, and ground stone items. However, projectile points became more refined, such as notched points, points with concave bases, and small stemmed points. Greater use of the mortar and pestle suggest that acorns became a more important food source. There was also an increase in broad leaf-shaped blades, bone and antler tools and use of asphaltum and steatite (Horne and McDougall 2007:24). In general, through the Archaic Period the archaeological evidence and artifact assemblages remain similar, but become more elaborate over time, possibly implying an increase in sedentism, an increase in subsistence efficiency, and/or an increase in sociopolitical complexity (Horne and McDougall 2007:24).

Little is known about the transition from the Archaic Period to the Late Prehistoric Period. Laylander reports that there is a relative scarcity of dates within archaeological sites from the period between 1300 B.C. to A.D. 200, but it is unknown if this represents a decline in population during the end of the Archaic Period, or a bias in research data (Laylander 2014a).

During the end of the Late Archaic Period several researchers have identified an intermediate period, however it is largely unknown if this period is representative of the cultural change between the Milling Stone Period and the Late Prehistoric Period over time, adaptation to changing environmental conditions, or a distinct culture (Horne and McDougall 2007, SWCA 2018). This intermediate period roughly corresponds to the Medieval Warm Period which caused drought and warmer temperatures across the western United States. Archaeological evidence during this period supports a greater reliance on acorns as a food staple. Other changes include an influx of archaeological sites at reliable water sources such as the Colorado River and Lake Cahuilla.

Late Holocene Period /Late Prehistoric Period (1500 to 150 YBP)

There are differing opinions between researchers as to whether the shift to the Late Prehistoric Period was caused by new technologies developed by people already living in the area, spurred by changing environmental conditions, or if it was brought in by a migration of people into Southern California. Archaeological and anthropological evidence suggests that at approximately 1500 to 1,350 YBP, Takic speaking (speakers of Uto-Aztecan languages) groups from the Great Basin region moved into Riverside County, marking the transition to the Late Prehistoric Period, known as the Shoshonean Wedge (Byrd and Raab 2007, Gallegos 2017). An analysis of the Takic expansion by Sutton (2009) indicates that inland southern California was occupied by "proto-Yuman" populations before 1,000 YBP. The comprehensive, multi-phase model offered by Sutton (2009) uses linguistic, ethnographic, archaeological, and biological data to propose that Takic speaking groups moved south and east from the Los Angeles Basin. They then diffused south into Orange County and northern San Diego County, inland up the San Luis Rey River into the Palomar Mountain area and north into interior southern California around 1,250 YBP. In addition, during this period Lake Cahuilla began to receded, and the large populations of people living along the lake shores transitioned into the Colorado River basin to the east or the inland valleys to the west. The Late Prehistoric Period is identified as a continuation of the cultural practices that were present during the initial Euro-American exploration of Southern California and that were recorded during the Ethno-Historic Period (Byrd and Raab 2007).

The Late Prehistoric Period is defined by the introduction of the bow and arrow after approximately A.D. 500 and by A.D. 1000 ceramic vessels begin to appear at some sites (Meighan 1954, Warren 1961). Also,

during this time mortuary practices changed from inhumations to cremations. It is thought that this practice came from the north or east, and it is unknown if the transition from inhumations to cremations was adopted for religious or population reasons, or to control the spread of disease (Byrd and Raab 2007, Lightfoot and Parrish 2009, Gallegos 2017). Other hallmarks of the Late Prehistoric Period include an increase in the reliance on plant food sources, small projectile points, increase use of mortars and pestles, the use of obsidian from the Obsidian Butte source and overall an increase in the complexity and diversity of material cultural (SWCA 2018).

Many of the Late Prehistoric Period archaeological sites are located inland and contain bedrock milling features, thought to relate to acorn or other seed processing. People lived in larger coastal and lower valley villages, that were located near permanent water sources. These villages acted as ceremonial and political centers, and may have been occupied, at least partially, year-round. Smaller villages and residential areas were inhabited seasonally and were located near subsistence resources or were used for specialized activities, especially in inland areas (Byrd and Raab 2007, Lightfoot and Parrish 2009). This may have led to an increase in community size, longer stays at the major residences and different societal organization.

Archaeological remains have identified over four dozen plant types were used in Southern California during this period (Byrd and Raab 2007). Grass seeds had the highest frequencies of use with a gradual increase in acorn usage (Hale 2009). Little is known about plant cultivation during the Late Holocene. There is evidence that a high number of plants that follow fires were used, but no major research projects have focused on proto-agriculture. Early Spanish accounts identify that the Native Americans were practicing cultivation of certain plants through burning and water diversion (Gallegos 2017). Agriculture was in use along the Colorado River, east of the Project Area as early as A.D. 700 (Schaefer and Laylander 2007).

Changes in lithic artifacts show a greater number of small, finely chipped projectile points, usually stemless with convex or concave bases, suggesting an increased utilization of the bow and arrow rather than the atlatl and dart for hunting. Common lithic materials for formed tools, primarily projectile points include chert, jasper, agate, silicified wood, rhyolite, wonderstone, quartz, obsidian from Obsidian Butte, and Santiago Peak metavolcanics (Shackley 2004, Lightfoot and Parrish 2009). Other items include steatite cooking vessels and containers, the increased presence of smaller bone and shell circular fishhooks, perforated stones, arrow shaft straighteners made of steatite, a variety of bone tools, and personal ornaments made from shell, bone, and stone. There is also an increased use of asphalt for waterproofing and as an adhesive (SWCA 2018).

During the Late Prehistoric Period villages acted as ceremonial and political centers, and may have been occupied, at least partially, year-round. Smaller residential areas were inhabited seasonally and were located near subsistence resources or were used for specialized activities, especially in inland areas (Byrd and Raab 2007, Lightfoot 2009). This may have led to an increase in community size, longer stays at the major residences and different societal organization. Most of the rock art in Riverside County, as in the rest of Southern California has been attributed to the Late Prehistoric Period. Ceramic use included a variety of vessel types as well as clay smoking pipes. While ceramic use is present in the Lake Cahuilla region as early as 800 YBP and there were at least five ceramic types present in the desert (Shackley 2004), it is not present in the vicinity of the Project area until circa 350 YBP (Horne and McDougall 2007, Schaefer and Laylander 2007). Ceramic types consisted of brownwares, graywares, and buffwares.

2.2.2 Ethnohistoric Period

The Late Prehistoric period essentially ended with the Spanish colonization and establishment of the missions. Disease and forced relocation, which reduced the populations considerably among the coastal settlements, did much to destroy the cultural pattern established at that period (Bean and Shipek 1978). The Late Prehistoric culture pattern appears to have lasted longer among the inland groups. Even after the

missions were secularized in 1834, some inland groups were able to maintain most of their traditional orientation until the arrival of the settlers from 1859-1879, when most of the groups were displaced or dispersed (Bean and Shipek 1978).

During the Ethnohistoric period, the region that today is known as Riverside County was a shared-use area and home to three closely related Takic-speaking groups: the Cahuilla, the Gabrielino, and the Luiseño/Juaneño. Settlement patterns for all three groups were essentially very similar with settlements typically located within valley bottoms, along streams, or along coastal strands near mountain ranges. Villages were often located in sheltered areas near good water supplies, in a defensive location, or on the side of warm thermal zone slopes.

Within the region, the diverse ecological zones provided a wide array of subsistence products. Principal game animals included deer, rabbit, jackrabbit, woodrat, mice, ground squirrels, antelope, valley and mountain quail, doves, ducks, and other birds. Coastal game included sea mammals, fish, mollusks, and crustaceans. Fresh-water game included trout and other local fish (Bean and Shipek 1978, Kroeber 1925). Of high importance were acorns, and village locations were typically located near water sources for use in acorn leeching. Grass seeds were the next most ample resource, in addition to manzanita, sunflower, chia, sage, lemonade berry, prickly pear, and pine nuts. Fire was used as a crop management technique as well as for community rabbit drives. Tools for the acquisition, storage, or preparation of food were highly varied and constructed from locally derived materials, with a few items acquired via trade from specific localities (Bean 1978). Hunting activities used either individual or group participation, using bows and arrows for larger game or curved throwing sticks, slings, traps, or pit type deadfalls for smaller animals. Cremations were used in each group rather than inhumations. While culturally the groups shared similarities with may parts of their culture the Cahuilla differed from the Luiseño/Juaneño and Gabrielino in that their religion was more like the Mohave tribes of the eastern deserts than the Chingichngish cult of the Luiseño and Gabrielino. Overall, the archaeological record between the three groups is very similar.

Cahuilla

The Cahuilla traditional use area included the San Bernardino Mountains, Orocopia Mountains, and the Chocolate Mountains to the east, the Salton Sea and Borrego Springs to the south, the eastern slopes of Palomar Mountain and Lake Mathews to the west, and the Santa Ana River to the north (Bean 1978, Kroeber 1908). The Cahuilla traditionally inhabited areas from the desert and valley floors to the mountain areas, which included drastically different environmental areas and resources. The Project area is located along the western boundary of what would have been the Cahuilla traditional use area. Living inland, the Cahuilla had minimal contact with the Spaniards and were not as influenced to the extent that the coastal groups were, although the Asistencia at San Bernardino in 1819 did have several Cahuilla within their register.

Subsistence practices were similar to the Luiseño and Gabrielino, with a focus on hunting medium and small game, such as rabbits, with bow and arrow. At least six kinds of acorns, mesquite, screw beans, piñon nuts, cacti, variety of seeds, wild fruits and berries and succulents were collected. Granaries were used to store items such as acorns and mesquite beans. Additional plants were used for medicine and construction materials. Within the desert region the Cahuilla practiced proto-agriculture with the cultivation of corn, beans, squashes, and melons (Bean 1978).

Baskets were used for a variety of purposes and forms primarily for food production and storage. Ceramic pottery, was generally a redware with five main vessel types: small mouthed jars, cooking pots, open bowls, dishes, and pipes (Bean 1978).

The Cahuilla were organized into two major groups of patrilineal, totemic clans: the Wildcats and the Coyotes (Bean 1978, Gifford 1918). Within the clans, either an entire clan, or family groups had ownership over important resources, such as mesquite or agave areas. Members of the clan could split into smaller family groups during certain times of the year and come together for resource collection or defense. The acorn collecting season caused the most dispersal outside of villages and family groups left for several weeks to collect at various acorn groves (Bean 1978). Within Cahuilla villages structures ranged from brush shelters to dome shaped and rectangular houses.

In the mid-1800s the Cahuilla began to be more directly affected by European-American migrants moving into the area in response to the California Gold Rush. In addition, a smallpox epidemic in 1863 took a large toll on the native population (Hooper 1920:340).

Gabrielino

The largest, most powerful group in Southern California were the Gabrielino. Their traditional use area was centered in what is now the Los Angeles Basin and encompassed the Los Angeles, San Gabriel, and Santa Ana watersheds. Their range extended as far east as present-day San Bernardino, west to the Santa Monica Mountains, south to Aliso Creek and as far north as the San Fernando Valley. This group also occupied several Channel Islands, including Santa Barbara Island, Santa Catalina Island, San Nicholas Island, and San Clemente Island. The Gabrielino had access to important resources, including a steatite source from Santa Catalina Island and controlled the trade of materials and resources as far north as the San Joaquin Valley, east to the Colorado River, and even as far south as Baja California (Bean and Smith 1978; Kroeber 1925). The Gabrielino came under the influence of two Spanish missions, Mission San Gabriel and Mission San Fernando, and most of the natives from the coastal areas and inland valleys were removed to these missions (Bean and Smith 1978). According to the archaeological record, the Gabrielino were not the first inhabitants of the Los Angeles basin but arrived in the area around 500 B.C. as part of the "Shoshonean (Takic) wedge" (Bean and Smith 1978, Kroeber 1925).

The study area is located within the south eastern boundary of the Gabrielino territory (Bean and Smith 1978:538, Kroeber 1925:Plate 57). The name Gabrielino, which can also be spelled Gabrieleno or Gabrieleño, describes the people who were governed by the Spanish from the Mission San Gabriel. In the post-Contact period, Mission San Gabriel included natives of the greater Los Angeles area, as well as members of surrounding groups such as Kitanemuk, Serrano, and Cahuilla.

Little evidence exists that suggest that the people we call Gabrielino had a broad denotation for their group. According to Dakin (1978:222), the Gabrielino identified themselves as inhabitants of a specific community through the use of locational suffixes, similar to how residents of present-day communities identify themselves with their location (e.g. San Franciscan, San Diegan, California, etc.). However, there are Native words that have been suggested as labels for broader groups of Native Americans in the Los Angeles region. These labels include Tongva (or Tong-v) and Kizh (Kij or Kichereno). Heizer noted that evidence existed that these Native terms originally referred to local places or smaller groups of people within the larger group that we now call Gabrielino (Heizer 1968). The term Gabrielino, which combines the most commonly used group names, is used in the remainder of this study to designate native people of the Los Angeles Basin and their descendants.

The Gabrielino language is a member of the Takic branch of the Uto-Aztecan language family, which also includes the languages of the neighboring Juaneño/Luiseño, Tatataviam/Alliklik, and Serrano tribes. According to Mithun, the Uto-Aztecan language family can be traced back to the Great Basin area (2004). Linguistic analysis suggests that Takic-speaking immigrants from the Great Basin area began moving into southern California around 500 B.C. (Kroeber 1925:579).

The Uto-Aztecan family's origin differs greatly from that of the Chumash to the north and the Kumeyaay to the south. The language shared by the Kumeyaay is derived from the California-Delta branch of the Yuman-Cochimi language family, originating in the American Southwest (Mithun 2004:577). In contrast, the Chumash language may represent a unique language family with a lineage unlike both the Yuman-Cochimi and Uto-Aztecan families (Mithun 2004:390). Linguistic analysis suggests that Takic-speaking immigrants from the Great Basin area began moving into southern California around 500 B.C. (Kroeber 1925:579). Linguistic analysis suggests that Chumashan- and Yuman-speaking populations predated the arrival of Takic-speaking groups. The introduction of Takic-speaking groups to the region may have displaced both Chumashan- and Yuman-speaking peoples, however the timing and extent of their impact on indigenous peoples is not well understood.

Gabrielino society was organized along patrilineal non-localized clans, a characteristic Takic pattern, with each clan containing several lineages and their own ceremonial leader. One or two clans generally made up the population of a village. The chief, or tómyaar, always came from the primary lineage of the clan/village. There were two general classes of individuals in the forms of elites and commoners, although the Gabrielino did not have a distinctly stratified society. The elites consisted of primary lineage members, other lineage leaders (who maintained a separate ceremonial language), the wealthy, and the elite families of the various villages who commonly married among themselves. The commoner class contained those from "fairly well-to-do and long-established lineages" (Bean and Smith 1978:543). Slaves taken in war and individuals who drifted into the village and were unrelated to the local inhabitants made up a third class, lower than both the commoners and elites.

The Gabrielino lived in large, permanent villages that typically bordered rivers and streams or in sheltered areas along the coast. Gabrielino territory stretched from the foothills of the San Gabriel Mountains to the Pacific Ocean. Houses constructed by the Gabrielino were large, circular domed structures constructed of willow poles thatched with tule (Bean and Smith 1978), with capacities of up to 50 people per structure. Other structures constructed by the Gabrielino included sweathouses, menstrual huts, ceremonial enclosures, and communal granaries. The subsistence economy of Gabrielinos was centered on gathering and hunting. The surrounding environment was rich and varied, and the tribe exploited resources from mountain, foothill, valley, and desert environments in addition to riparian, estuarine, and open and rocky coastal eco-niches. Acorns were the staple food, and by the time of the early Intermediate period the gathering of acorns had become an established industry. Acorns were supplemented by the roots, leaves, seeds, and fruits of a wide variety of flora. Protein sources including fresh and saltwater fish, shellfish, birds, reptiles, large and small mammals, and insects were also consumed (Bean and Smith 1978:546; Kroeber 1925:631–632; McCawley 1996:119–123, 128–131).

A wide variety of tools and implements were used by the Gabrielino for the collection of food resources. Typical tools such as the bow and arrow, traps, nets, blinds, throwing sticks and slings, spears, harpoons, and hooks were used. Many plant foods were collected with woven seed beaters, several forms of burden baskets, carrying nets, and sharpened digging sticks which were occasionally fitted with stone weights. A variety of tools were used to process acorns, including portable and bedrock mortars, pestles, basket hopper mortars, manos and metates, hammerstones and anvils, woven strainers and winnowers, leaching baskets and bowls, woven parching trays, knives, bone saws, and wooden drying racks. The ground meal and unprocessed hard seeds were stored in large, finely woven baskets, and the unprocessed acorns were stored in large granaries woven of willow branches and raised off the ground on platforms. Santa Catalina Island steatite was used to make comals, ollas, and cooking vessels that would not crack after repeated firings. Food was consumed from a number of woven and carved wood vessels (Blackburn 1963; Kroeber 1925:631-639; McCawley 1996:129-138).

There is well-documented interaction between the Gabrielino and many of their neighbors in the form of intermarriage and trade. The Gabrielino participated in an extensive exchange network, trading coastal goods for inland resources. They exported Santa Catalina Island steatite products, roots, seal and otter skins, fish and shellfish, red ochre, and lead ore to neighboring tribes, as well as people as far away as the Colorado River. These exports were exchanged for ceramic goods, deer skin shirts, obsidian, acorns, and other items. This burgeoning trade was facilitated by the use of craft specialists, a standard medium of exchange (Olivella bead currency), and the regular destruction of valuables in ceremonies that maintained a high demand for these goods (McCawley 1996:112-115). Several Gabrielino villages appear to have served as trade centers, due in large part to their centralized geographic position in relation to the southern Channel Islands and to other tribes. These villages maintained particularly large populations and hosted annual trade fairs that would bring their population to 1,000 or more for the duration of the event (McCawley 1996:113–114).

At the time of Spanish contact, the basis of Gabrielino religious life was the Chinigchinich cult, which centered on the last of a series of heroic mythological figures. Chinigchinich gave instruction on laws and institutions, and also taught the people how to dance, the primary religious act for this society. He later withdrew into heaven, where he rewarded the faithful and punished those who disobeyed his laws (Kroeber 1925:637–638). The Chinigchinich religion seems to have been relatively new when the Spanish arrived and was spreading south into the Southern Takic groups even as Christian missions were being built. According to McCawley, the Chinigchinich religion also may have represented a mixture of native and Christian belief and practices (1996:143–144).

Gabrielino rituals and beliefs regarding death varied within their occupied territories. Deceased Gabrielino were either buried or cremated, with cremation practices being the dominant form within interior areas and portions of the coast line. Inhumations were reportedly more common on the Channel Islands and the neighboring mainland coast areas (Harrington 1942; McCawley 1996:157). Cremation ashes have been found in subsurface archaeological contexts within stone bowls and in shell dishes (Ashby and Winterbourne 1966), as well as contexts suggesting the scattering of ashes amongst broken ground stone implements (Altschul et al. 2007; Cleland et al. 2007). Gravegoods associated with burials/cremations included projectile points, beads, steatite objects, and asphaltum, and varied in quantity and content (Fraizer 2000:175). These archaeological contexts correspond with ethnographic descriptions of an elaborate mourning ceremony that included a wide variety of offerings, including seeds, stone grinding tools, otter skins, baskets, wood tools, shell beads, bone and shell ornaments, and projectile points and knives (Boscana 1846:314). Cremation practices essentially ceased during the post-Contact period (McCawley 1996:157).

Luiseño/Juaneño

The traditional use area of the Luiseño encompassed about 1,500 square miles and extended in a north-northeasterly direction from Agua Hedondia Lagoon, to Aliso Creek and, to the east, included what are today known as Oceanside, Vista, San Marcos, Escondido, Palomar Mountain, the Gujieto, a portion of Valle de San Jose, north to Soboba and Temescal (Bean and Shipek 1978, Sparkman 1908, White 1962). The Luiseño was designated based on their associate with the Mission San Luis Rey, while the Juaneño are associated with the Mission San Juan Capistrano, however Bean and Shipek (1978) state that the Luiseño and Juaneño are ethnologically and linguistically similar and that the distinction is based on the influence of the mission system. The Project area is adjacent to the northern boundary of the Luiseño/Juaneño traditional territory.

While the Luiseño along with the Cahuilla and Gabrielino were all Takic-speaking, and had similar social structures Bean and Shipek (1978) argue that the Luiseño social structure was more rigid due to their greater population density. The Luiseño lived in sedentary and autonomous villages located near reliable water sources and high resource areas. Each village contained named places associated with food products, raw materials, or sacred beings (Bean and Shipek 1978) Named places were owned by either an individual, a

family, a chief, or the collective group. Group economic activities were restricted to areas owned by the village, whereas familial gatherings were limited to family-owned areas, unless given express permission to hold such gatherings in areas other than their own (Bean and Shipek 1978). The concept of private property was important, and trespassing upon private areas was punished severely. A Luiseño ritual and ceremonial specialist maintained the knowledge of the various ceremonies and passed on the knowledge to only one heir. Such ceremonies included funerals and clothes burning ceremonies. The decimation of the population after European contact, without doubt, caused the loss of some spiritual specialists. Additionally, the reservation system interrupted the social organization and settlement patterns (Bean and Shipek 1978, Shipek 1986).

Settlements were typically located within valley bottoms, along streams, or along coastal strands near mountain ranges. Villages were often located in sheltered areas near good water supplies, in a defensive location, or on the side of warm thermal zone slopes. Each village contained named places associated with food products, raw materials, or sacred beings (Bean and Shipek 1978). Named places were owned by either an individual, a family, a chief, or the collective group. Group economic activities were restricted to areas owned by the village as a whole, whereas familial gatherings were limited to family-owned areas, unless given express permission to hold such gatherings in areas other than their own (Bean and Shipek 1978). The concept of private property was important to the Luiseño, and trespassing upon private areas was punished severely. Private property also included houses, capital equipment, treasure goods and ritual equipment, trade and ceremonial beads, eagle nests, songs, and other nonmaterial possessions. Privately owned property was either inherited patrilineally or transferred to another owner (Sparkman 1908, Bean and Shipek 1978).

The diverse ecological zones within the Luiseño territory provided a wide array of subsistence products. Principal game animals included deer, rabbit, jackrabbit, woodrat, mice, ground squirrels, antelope, valley and mountain quail, doves, ducks, and other birds. (Gifford 1918, Sparkman 1908, Bean and Shipek 1978). The most important gathered resource were acorns, and village locations were typically located near water sources for use in acorn leeching. Grass seeds were the next most abundant resource, in addition to manzanita, sunflower, chia, sage, lemonade berry, prickly pear, and pine nuts. Fire was used as a crop management technique as well as for community rabbit drives. Tools for the acquisition, storage, or preparation of food were highly varied and constructed from locally derived materials, with a few items acquired via trade from specific localities (steatite bowls from Santa Catalina Island, obsidian blanks or tools from either eastern or northern neighbors) (Bean and Shipek 1978). Hunting activities used either individual or group participation, using bows and arrows for larger game or curved throwing sticks, slings, traps, or pit type deadfalls for smaller animals.

2.2.3 Historic Period

The first part of the next section provides a brief history of post-contact California up to the American period, followed by more detailed information regarding the history of Corona. Post-Contact history for the state of California is generally divided into three specific periods: the Spanish period (1769–1821), the Mexican period (1821–1848), and the American period (1848–present).

Spanish Period (1769-1821)

Along the coast of California, Spanish explorers began making expeditions between the mid-1500s and 1700s. Juan Rodríguez Cabrillo, a Portuguese in Spanish service, explored Catalina Island, San Pedro and Santa Monica bays and also stopped in 1542 at present-day San Diego Bay (Sparkman 1908). Sebastián Vizcaíno, a Spanish naval officer spent much of the late 1500's mapping the coast of California north into Oregon. Like Cabrillo, Vizcaíno's crew also landed on Santa Catalina Island and at San Pedro and Santa Monica Bays, naming each location. The Spanish crown laid claim to California based on the surveys

conducted by Cabríllo and Vizcaíno (Bancroft 1886). While none of these expeditions may have had direct contact with the vicinity of the Project area it is likely that Old World diseases and other indirect impacts reached the Native Americans living in the Project area.

In 1769, the King of Spain directed the Franciscan Order to direct religious and colonization matters in assigned territories of the Americas. Captain Gaspar de Portolá, 64 soldiers, missionaries, Baja (lower) California Native Americans, and Mexican civilians, established the Presidio of San Diego, a fortified military outpost, as the first Spanish settlement in Alta California. In July of 1769, while Portolá was exploring southern California, Franciscan Fr. Junípero Serra founded Mission San Diego de Alcalá at Presidio Hill, the first of the 21 missions that would be established in Alta California by the Spanish and the Franciscan Order between 1769 and 1823. In 1771 the Mission San Gabriel Archangel was established and in 1776 Mission San Juan Capistrano was established. The mission of San Luis Rey de Francia was established in 1798 four miles up the San Luis Rey river from the coast and in 1816, an outpost of San Luis Rey was established at Pala, 20 miles upriver. An additional outpost, the San Bernardino estancia was established in 1819. Mission San Gabriel would have had the greatest impact on the Native Americans within the vicinity of the Project area.

A Spanish expedition led by Pedro Fages in 1772 was the first European group to travel in the vicinity of the Project area. Looking for deserters from the military post in San Diego, Fages crossed into the San Bernardino Valley from the southeast, crossing the Santa Ana River, then heading north through the Cajon Pass and into the Mojave Desert (Hampson et al. 1988). In 1774, Juan Bautista de Anza led an expedition into California and traversed the San Jacinto Valley, camping in the San Jacinto River Valley for water, and then heading west away from the river through Bernasconi Pass near present-day Lakeview. He went on through Moreno Valley near March Air Reserve Base, then headed into the Santa Ana River Valley near the present site of the City of Riverside. His expedition opened an overland travel route from Sonora in the Mexican interior to Monterey in California. Following his first expedition, Anza returned to the region in 1775 leading a group of settlers to establish a mission and presidio in San Francisco (Brown and Boyd 1922, Rawls and Bean 2003).

Mexican Period (1821-1846)

After years of sporadic rebellion and warfare, New Spain (Mexico and the California territory) won independence from Spain in 1821 marking the beginning of the Mexican Period. As the ports in California were opened to foreign ships the population near the coast grew. However, the inland valleys remained largely vacant of European settlers expect for use as grazing lands for cattle. During the Mexican Period the cattle industry grew in importance to become the leading industry in the region and the central focus of the Californiño culture. The Mexican Government continued the land grant system first began by Spain and granted several land grants as part of the ranch system within the vicinity of the project area. Land grants within the vicinity of the project area include: the La Sierra Yorba, La Sierra Sepulveda, Sobrante de San Jacinto, Jurupa-Stearns, and El Rincon land grants.

The Mexican government secularized the California missions in 1833, and much of the mission lands were included in the land grants. The Native Americans which had been captured as part of the mission system became eligible for Mexican citizenship, however this period continued the physical and cultural decline of the Native American population (Heizer 1978). At their peak, the 21 California missions controlled approximately 74,000 neophytes (Bolton 1917). By 1834, the year before secularization took the institution from the missionaries, only 17,000 natives remained within their domain (Heizer 1978, Monroy 1990).

American Period (1848-Present)

The signing of the Treaty of Guadalupe Hidalgo in 1848, ended the Mexican American War and marks the beginning of the American period, when California became a territory of the United States. California

became the 31st state in 1850 and within three years the population of California had increased to more than 300,000.

Cattle continued to dominate the southern California economy through the 1850s as a source of hides but for the more than 90,000 new residents lured to California by the Gold Rush beginning in 1848, cattle were now an important source of meat and other supplies. Cattle were at first driven along major trails or roads such as the Gila Trail or Southern Overland Trail, then were transported by trains where available. The cattle boom ended for southern California as neighbor states and territories drove herds to northern California at reduced prices (Cleland 2005).

In Southern California, the floods of 1861-1862 followed by drought in 1863 and 1864 decimated the cattle industry and the large rancho owners who were "land rich and cash poor" began to sell off portions of their grants to satisfy debts (Guinn 1907). It was at this time that the new residents, mainly farmers, began experimental plantings to determine what their newly acquired land was best suited for within the vicinity of the Project area. In 1866 California Legislature passed an act that authorized payment of 250 for every 5000 mulberry trees that were at least two years old and 300 for every 100,000 cocoons produced. Tens of millions mulberry trees were planted, and the State treasury went almost bankrupt paying the incentives. By the end of the 1860's, the silk craze had waned and the State canceled the payments for tree planting and cocoons (Guinn 1907). After several other agricultural experiments, it was found that oranges were the most suitable crop for the area. Although the first orange trees in Riverside County were planted in 1871, the citrus industry really took off two years later when Eliza Tibbets received two Brazilian navel orange trees sent to her by a friend at the Department of Agriculture in Washington. The trees thrived in the Southern California climate and the navel orange industry grew rapidly. The citrus industry expanded in the region and spurred irrigation projects further expanding usable land and encouraging additional development.

On March 11, 1893, Riverside County was formed from an approximately 6,500 square miles of San Diego County and 560 square miles of San Bernardino County (Holmes 1912). Riverside County was formed primarily over political and tax issues between residents in San Bernardino and Riverside, and the displeasure of residents in the Temecula Valley area being too great a distance from the County seat in San Diego.

City of Corona Project Area History

First called "South Riverside", Corona was founded in 1886 by the South Riverside Land and Water Company at the height of the Southern California citrus boom (Holmes 1912). In 1886, developer Robert Taylor and his partners, Adolph Rimpau, George L. Joy, A. S. Garretson, a Sioux City banker, and ex-governor of Iowa, Samuel Merrill formed the South Riverside Land and Water Company. Together they raised approximately $110,000 to purchase approximately 12,000 acres of agricultural land that had formerly been part of the Rancho La Sierra, and Rancho Temescal land grants. Anaheim engineer H. C. Kellogg was hired and the colony of South Riverside was laid out encircled by Grand Boulevard, 100 feet wide and three miles round that had plantings of shade trees along each side of the road. Another bonus was that the "colony" was located on the San Diego branch of the Santa Fe Railroad. To the north along the railroad tracks were the manufacturing plants and packing houses. The southern end of town was mostly occupied by the citrus industry. In 1889, the Temescal Water Company was incorporated to supply water for the new colony (Corkhill 2013). This company purchased all the water-bearing lands in the Temescal valley and began drilling artesian wells. Taylor and his partners realized the importance of water for the soon to be developed community, and additional funds were used to ensure that sufficient water rights were obtained. They also secured the water rights to Temescal Creek, its tributaries and Lee Lake. Dams and pipelines were built to carry the water to the colony. After an initial flurry of expansion, water supplied from Temescal Canyon was not enough for the growing population and increasing agriculture. In 1899 the

Corona Irrigation Company purchased 160 acres near Perris that had artesian waters. They constructed a 21-mile cement ditch to bring water to the area.

By 1893 the town boasted a large air-drying lumber yard, a clay and pipe works owned by the Pacific Clay Manufacturing Company, shipments of clay, gypsum, hay grain and honey were being shipped out. Hundreds of acres of were planted in orange, lemon and deciduous trees. There were three churches, Baptist, Methodist and Congregational, in addition, an Episcopalian group had purchased lots in town and were in the process of building their house of worship. There was a large two-story brick school, a bank, and a three-story hotel. In addition, there was a drug store, a newspaper, two bakeries, and a general merchandise store (Bynon 1893:4, Holmes 1912).

In addition to agricultural pursuits, mining also influence the early development of Corona. A tin mine had been discovered in 1857 in the nearby San Jacinto Hills. However, mining in the area did not gain traction until 1888, as Corona was the closest town to the mines and contained the most convenient rail depot, both supplies and workers arriving for the mines flowed through Corona. While the actual tin mines only remained open for a short time, they brough additional development and residents to Corona (Homes 1912).

Corona became known as the lemon capital of the world. Additional agricultural pursuits included other fruits and alfalfa (City of Corona n.d.). By the 1910s approximately ¼ of the residents Corona were involved in the citrus industry. The lemon production spurred the creation of the Exchange By-Products Company the processed lemons which were not used for food into citric acid, lemon oil, and other products. In addition to being known for their lemon production the City of Corona began auto racing in 1913 at the Corona Road Races on Grand Boulevard, however the auto race proved to be too dangerous and was stopped after several years (City of Corona nd). Agriculture remained the main economic activity for decades.

World War II prompted a change in the development of Corona away from agriculture, as military bases within the region raised the population and created additional industries outside of agriculture. The Prado Dam, located immediately to the west of the Project area was completed in May 1941. The Prado Dam was constructed by the U.S. Army Corps of Engineers, Los Angele s District, along the lower Santa Ana River. The dam was constructed as a flood risk management measure, along with recreation and water conservation purposes (USACE 2020).

Post-World War II housing needs increase development in the area and by 1962 the Riverside Freeway (State Highway 91) was constructed through Corona. Interstate 15 was constructed, to the east of Corona in 1989. By the 1980s Corona developed into a residential community and the population grew exponentially.

3. METHODS

Methods used to assess the cultural resources sensitivity of the RWMP project area include record searches from local repositories and archival research. No archaeological field survey was conducted for this study.

3.1 RECORD SEARCHES

3.1.1 Eastern Information Center

A record search of the CHRIS held by the EIC for the RWMP project area and a one-quarter mile record search radius was requested on April 1, 2020. However, the EIC is temporarily closed due to COVID-19, and it is unknown when the record search results will be available. Therefore, record search results from the *City of Corona General Plan Update: Cultural Resources Technical Report* (SWCA 2018) were summarized for this report. Most of the City of Corona General Plan Update and the RWMP project areas overlap. The record search area utilized for the *City of Corona General Plan Update: Cultural Resources Technical Report* is shown in Figure 10, and includes the Corona city boundaries and the City's Sphere of Influence (SOI). The record search information was not available for the north west corner of the Project area within the Prado Flood Control Basin. However, no Project Components of the RWMP are located within this area. If available, an updated record search at the EIC will be requested and can be added to a subsequent draft of this report.

3.1.2 Native American Heritage Commission

A record search of the SLF held by the NAHC was requested on March 30, 2020. The NAHC responded on April 2, 2020 that the results were positive and provided a list of 37 tribal organizations and individuals to contact for additional information. Red Tail sent information request letters to the 37 tribal organizations and individuals on April 6, 2020. All correspondence pertaining to the NAHC is included in Appendix B.

3.2 ARCHIVAL RESEARCH

Historic aerial photographs and maps, provided by historicaerials.com and USGS Historical Topographic Map Explorer, of the RWMP project area were examined. In addition, Red Tail conducted a search of the General Land Office (GLO) maps and records provided by the Bureau of Land Management (BLM) including land patents, survey plats and field notes, land status records and other historic documents. In order to assess previous ground disturbance and cultural resource sensitivity the *City of Corona General Plan Update: Cultural Resources Technical Report* (SWCA 2018) provided building record data per decade for properties within the project area.

3.3 TRIBAL CULTURAL RESOURCES

Per AB-52 and SB-18 consultation with Native American Tribes and the City is ongoing.

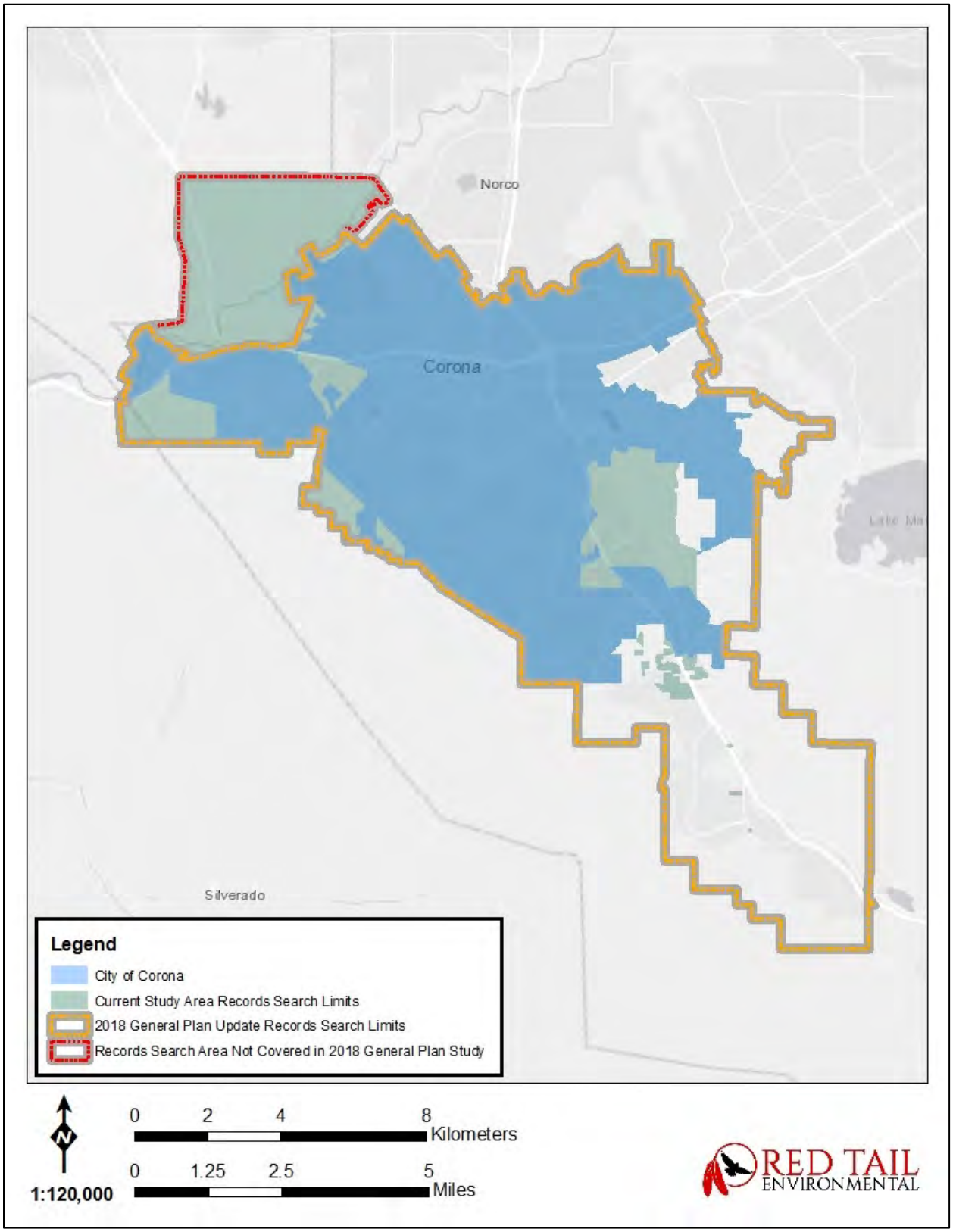


Figure 10. Record Search Area for the RWMP Project and the City of Corona General Plan Update Project.

4. RESULTS

4.1 RECORD SEARCH RESULTS

4.1.1 EIC Record Search Results

The *City of Corona General Plan Update: Cultural Resources Technical Report* (SWCA 2018) identified a total of 172 previously conducted cultural resources studies within the City of Corona and the City's Sphere of Influence (SOI) (Table 1). The majority of the City of Corona and the SOI overlaps with the RWMP Project area.

Table 1. Previously Conducted Cultural Resources Studies within the City of Corona and the SOI

Report	Author	Year	Title	Quad
RI-00062	RONALAD C. TOBEY, TERRY D. SUSS, AND LARRY BURGESS	1977	HISTORICAL RESOURCE SURVEY OF THE PRADO FLOOD CONTROL BASIN	CORONA NORTH, PRADO DAM
RI-00064	JEAN TADLOCK	1977	ARCHAEOLOGICAL ELEMENT OF AN ENVIRONMENTAL IMPACT REPORT WESTERN VILLAGE PROJECT, RIVERSIDE COUNTY, CALIFORNIA, LEIGHTON PROJECT 77201-1	BLACK STAR CANYON, PRADO DAM
RI-00078	MICHAEL C. GARDNER	1973	MAIN STREET WASH FLOOD CONTROL PROJECT: EXPECTED IMPACT TO ARCHAEOLOGICAL RESOURCES.	CORONA NORTH, CORONA SOUTH
RI-00080	MICHAEL C. GARNDER	1973	LINCOLN STREET CHANNEL STAGE II FLOOD CONTROL PROJECT: EXPECTED IMPACT TO ARCHAEOLOGICAL RESOURCES.	CORONA NORTH, RIVERSIDE WEST
RI-00169	PATRICIA MARTZ AND RICHARD A. WEAVER	1975	ENVIRONMENTAL EVALUATION: ARCHAEOLOGY OF THE PROPOSED ALIGNMENTS OF THE SANTA ANA REGIONAL INTERCEPTOR, RIVERSIDE, SAN BERNARDINO, AND ORANGE COUNTIES, CALIFORNIA	PRADO DAM
RI-00188	MARY A. BROWN	1976	LETTER REPORT: CULTURAL RESOURCES EVALUATION FOR PROPOSED WATER SUPPLY FACILITIES FOR THE CITY OF CORONA AND SURROUNDING COMMUNITIES (PHASE II).	CORONA SOUTH, LAKE MATHEWS
RI-00188	MARY A. BROWN	1976	LETTER REPORT: CULTURAL RESOURCES EVALUATION FOR PROPOSED WATER SUPPLY FACILITIES FOR THE CITY OF CORONA AND SURROUNDING COMMUNITIES (PHASE II).	CORONA SOUTH, LAKE MATHEWS
RI-00261	DONALD LIPP	1977	ENVIRONMENTAL IMPACT ASSESSMENT: ARCHAEOLOGICAL SURVEY OF SHARER RANCH, RIVERSIDE COUNTY, CALIFORNIA	BLACK STAR CANYON, PRADO DAM
RI-00336	CHRISTINA BREWER	1978	AN ARCHAEOLOGICAL SURVEY OF PARCEL NOS. 1, 2, AND 3 ON PARCEL MAP 11561, COUNTY OF RIVERSIDE, CALIFORNIA	LAKE MATHEWS
RI-00337	JANE ROSENTHAL	1996	ARCHAEOLOGICAL ASSESSMENT FOR CORONA CLAY PARCELS 1, 2, AND 3 TEMESCAL CANYON VICINITY, RIVERSIDE COUNTY, CALIFORNIA	LAKE MATHEWS
RI-00384	CHRISTOPHER E. DOVER	1978	ENVIRONMENTAL IMPACT EVALUATION: ARCHAEOLOGICAL ASSESSMENT OF TENTATIVE PARCEL MAP 11899, NEAR LAKE MATHEWS, RIVERSIDE COUNTY, CALIFORNIA	LAKE MATHEWS
RI-00410	JACK ZAHNISEC	1980	ARCHAEOLOGICAL ASSESSMENT FORM: RIVERSIDE COUNTY PLANNING DEPARTMENT, SMP NO. 133	ALBERHILL, LAKE MATHEWS
RI-00465	BRUCE LOVE AND BAI "TOM" TANG	1999	HISTORIC BUILDING EVALUATION, FORMER B&R SERVICE BUILDING, 1390 EAST CHASE DRIVE, CITY OF CORONA, RIVERSIDE COUNTY, CALIFORNIA	CORONA SOUTH
RI-00608	BETH PADON	1982	ARCHAEOLOGICAL ASSESSMENT OF WOODLAKE VILLAGES GENERAL PLAN AMENDMENT	CORONA NORTH
RI-00609	THOMAS HOLCOMB, JAMES D. SWENSON, AND PHILIP J. WILKE	1979	RESULTS OF TEST EXCAVATIONS AT CA-RIV-1443, NORCO HILLS, RIVERSIDE COUNTY, CALIFORNIA	CORONA NORTH
RI-00610	CHRISTOPHER E. DROVER	1979	AN ARCHAEOLOGICAL ASSESSMENT OF THE NORCO HILLS PROPOSED SUBDIVISION NEAR NORCO, CALIFORNIA	CORONA NORTH
RI-00748	M.D CHAMBERS	1979	LETTER REPORT: ARCHAEOLOGICAL SURVEY OF TENTATIVE PARCEL NO. 13062	ALBERHILL, LAKE MATHEWS

Report	Author	Year	Title	Quad
RI-00755	MARIE COTTREL	1980	ARCHAEOLOGICAL RESOURCES CONDUCTED FOR THE CORONA ASSESSMENT DISTRICT ENVIRONMENTAL IMPACT REPORT	CORONA NORTH
RI-00757	JAMES E. BALDWIN	1980	CULTURAL RESOURCE IMPACT EVALUATION: ARCHAEOLOGICAL INSPECTION OF TENTATIVE PARCEL MAP NO. 15490, PORTION OF DAWSON CANYON, CORONA, RIVERSIDE COUNTY	LAKE MATHEWS
RI-00848	CHRISTOPHER E. DROVER	1980	ENVIRONMENTAL IMPACT EVALUATION: ARCHAEOLOGICAL ASSESSMENT OF A PROPOSED SUBDIVISION ON THE NORTHWEST CORNER OF TEMESCAL CANYON AND GLEN IVY ROADS NEAR CORONA, CALIFORNIA	LAKE MATHEWS
RI-01035	GEORGE R. MOMYER	1937	INDIAN PICTURE WRITING IN SOUTHERN CALIFORNIA (COPY)	-
RI-01076	JEAN A. SALPAS	1980	AN ARCHAEOLOGICAL ASSESSMENT OF 10 ACRES IN THE TEMESCAL VALLEY (LOT IN THE TEMESCAL VALLEY)	LAKE MATHEWS
RI-01077	JEAN A. SALPAS	1980	AN ARCHAEOLOGICAL ASSESSMENT OF 7.92 ACRES IN THE TEMESCAL VALLEY (PORTION OF PARCEL 2, PARCEL MAP 7239)	LAKE MATHEWS
RI-01112	STEVEN SCHWARTZ	1981	CULTURAL RESOURCES SURVEY, PRADO FIX	CORONA NORTH, PRADO DAM
RI-01169	ROGER J. DESAUTELS	1979	ARCHAEOLOGICAL SURVEY REPORT ON A 1700 + ACRE PARCEL OF LAND DESIGNATED THE "CAMPEAU PROJECT" LOCATED IN THE LAKE MATTHEWS AREA OF RIVERSIDE COUNTY	CORONA NORTH, CORONA SOUTH, LAKE MATHEWS, RIVERSIDE WEST
RI-01237	ROBERT J. WLODARSKI AND JOHN M. FOSTER	1980	CULTURAL RESOURCE OVERVIEW FOR THE DEVERS SUBSTATION TO SERRANO SUBSTATION TRANSMISSION ROUTE ALTERNATIVES CORRIDOR RIGHT-OF-WAY	ALBERHILL, BEAUMONT, BLACK STAR CANYON, CABAZON, CORONA SOUTH, EL CASCO, LAKE ELSINORE, LAKE MATHEWS, LAKEVIEW, PERRIS, ROMOLAND
RI-01237	ROBERT J. WLODARSKI AND JOHN M. FOSTER	1980	CULTURAL RESOURCE OVERVIEW FOR THE DEVERS SUBSTATION TO SERRANO SUBSTATION TRANSMISSION ROUTE ALTERNATIVES CORRIDOR RIGHT-OF-WAY	ALBERHILL, BEAUMONT, BLACK STAR CANYON, CABAZON, CORONA SOUTH, EL CASCO, LAKE ELSINORE, LAKE MATHEWS, LAKEVIEW, PERRIS, ROMOLAND
RI-01238	DANIEL F. MCCARTHY	1986	ENVIRONMENTAL EVALUATION: A ARCHAEOLOGICAL ASSESSMENT OF A 9.9 ACRE PARCEL OF LAND IN TEMESCAL CANYON, RIVERSIDE COUNTY, CALIFORNIA.	LAKE MATHEWS
RI-01242	STEPHEN R. HAMMOND	1980	FIRST ADDENDUM TO ARCHAEOLOGICAL SURVEY REPORT FOR THE PROPOSED ROUTE 15 TRANSPORTATION FACILITY BETWEEN MAGNOLIA AVENUE IN THE CITY OF CORONA AND THE ROUTE 60 FREEWAY, RIVERSIDE AND SAN BERNARDINO COUNTIES	CORONA NORTH
RI-01268	STEPHEN R. HAMMOND	1981	ARCHAEOLOGICAL SURVEY REPORT FOR THE PROPOSED GLEN IVY SAFETY ROADSIDE REST FACILITIES (P.M. 31.3/31.9)	LAKE MATHEWS
RI-01307	ANN S. PEAK	1975	CULTURAL RESOURCE ASSESSMENT OF SEWAGE TREATMENT FACILITIES EXPANSION PROJECT, CITY OF CORONA, RIVERSIDE COUNTY, CALIFORNIA	CORONA NORTH
RI-01338	CHRISTINA BREWER	1979	AN ARCHAEOLOGICAL SURVEY OF TRACK 14684, COUNTY OF RIVERSIDE, CALIFORNIA	ALBERHILL, LAKE MATHEWS
RI-01354	WILLIAM BREECE AND BETH PADON	1982	ARCHAEOLOGICAL TESTING AT CA-RIV-1801, GREEN RIVER MEADOW PROJECT, RIVERSIDE COUNTY, CALIFORNIA	PRADO DAM
RI-01355	ROGER J. DESAUTELS	1979	ARCHAEOLOGICAL SURVEY REPORT ON: AN 85 ACRE SEGMENT OF THE CADILLAC FAIRVIEW'S " GREEN RIVER" PROJECT. LOCATED IN SANTA ANA CANYON, RIVERSIDE COUNTY, CALIFORNIA	PRADO DAM
RI-01420	LSA, INC.	1982	ARCHAEOLOGICAL RECORDS SEARCH AND RECONNAISSANCE WESTERN MUNICIPAL WATER DISTRICT PROPOSED WATER TREATMENT PLANT, RIVERSIDE COUNTY, CALIFORNIA	PRADO DAM
RI-01479	SCHROTH, ADELLA	1982	ARCHAEOLOGICAL ASSESSMENT OF THE TEMESCAL VALLEY PROJECT, COUNTY OF RIVERSIDE, CALIFORNIA	ALBERHILL, CORONA SOUTH, LAKE MATHEWS

Report	Author	Year	Title	Quad
RI-01517	BOWLES, LARRY L.	1982	ARCHAEOLOGICAL ASSESSMENT FOR TPM 18721	BLACK STAR CANYON, CORONA NORTH, CORONA SOUTH
RI-01665	WIRTH ASSOCIATES	1983	DEVERS-SERRANO-VILLA PARK TRANSMISSION SYSTEM SUPPLEMENT TO THE CULTURAL RESOURCES TECHNICAL REPORT - PUBLIC REVIEW DOCUMENT AND CONFIDENTIAL APPENDICES	ALBERHILL, BEAUMONT, CABAZON, CORONA NORTH, CORONA SOUTH, EL CASCO, LAKE FULMOR, LAKE MATHEWS, LAKEVIEW, PERRIS, REDLANDS, SAN BERNARDINO SOUTH, SAN JACINTO, SANTIAGO PEAK, SUNNYMEAD
RI-01724	RECTOR, CAROL	1983	AN ARCHAEOLOGICAL ASSESSMENT OF TRACT 17634, CITY OF CORONA, RIVERSIDE COUNTY, CALIFORNIA	CORONA SOUTH
RI-01735	MCCARTHY, DANIEL F.	1983	AN ARCHAEOLOGICAL ASSESSMENT OF SKY ISLAND ESTATES, SANTA ANA CANYON AREA OF ORANGE AND RIVERSIDE COUNTIES, CALIFORNIA	BLACK STAR CANYON, PRADO DAM
RI-01736	PINK, W.J., M.A. BROWN AND NANCY EVANS	1983	CULTURAL AND PALEONTOLOGICAL RESOURCES ASSESSMENT OF THE GREENWAY FARMS, A PROPOSED SUBDIVISION, RIVERSIDE COUNTY, CALIFORNIA	CORONA NORTH, CORONA SOUTH, LAKE MATHEWS, RIVERSIDE WEST
RI-01873	COTTRELL, MARIE	1984	A CULTURAL RESOURCES ASSESSMENT CONDUCTED FOR TT 20060, CITY OF CORONA, RIVERSIDE COUNTY, CALIFORNIA	CORONA NORTH
RI-01913	MCCARTHY, DANIEL F.	1985	AN ARCHAEOLOGICAL ASSESSMENT OF A PORTION OF A PROPOSED INTERCEPTOR SEWER PIPELINE RIGHT-OF-WAY IN THE NORCO- CORONA AREA, RIVERSIDE COUNTY, CALIFORNIA	CORONA NORTH
RI-01914	GALLEGOS, DENNIS AND RICHARD CARRICO	1985	CULTURAL RESOURCES SURVEY FOR THE PROPOSED SIERA DEL ORO PROJECT, CORONA, CALIFORNIA	BLACK STAR CANYON, CORONA NORTH, CORONA SOUTH, PRADO DAM
RI-01914	GALLEGOS, DENNIS AND RICHARD CARRICO	1985	CULTURAL RESOURCES SURVEY FOR THE PROPOSED SIERA DEL ORO PROJECT, CORONA, CALIFORNIA	BLACK STAR CANYON, CORONA NORTH, CORONA SOUTH, PRADO DAM
RI-01949	BOUSCAREN, STEPHEN	1985	FINAL REPORT: AN ARCHAEOLOGICAL ASSESSMENT OF THE PROPOSED VALLEY-SERRANO 500 KV TRANSMISSION LINE CORRIDOR, ORANGE AND RIVERSIDE COUNTIES	ALBERHILL, CORONA SOUTH, LAKE ELSINORE, LAKE MATHEWS, ROMOLAND
RI-01954	E. JANE ROSENTHAL AND STEVEN J. SCHWARZ	1981	A CULTURAL RESOURCE SURVEY OF THE PROPOSED SANTA ANA RIVER HIKING/BIKING TRAIL IN THE PRADO FLOOD CONTROL BASIN	BLACK STAR CANYON, CORONA NORTH, PRADO DAM
RI-01976	HAMMOND, STEPHEN R.	1985	ARCHAEOLOGICAL SURVEY REPORT FOR THE PROPOSED WIDENING OF INTERSTATE ROUTE 15 BETWEEN GLEN IVY UNDERCROSSING AND 0.4 MILE SOUTH OF ONTARIO AVENUE 08- RIV-15, P.M.33.3/38.3	CORONA SOUTH, LAKE MATHEWS
RI-02072	SWOPE, KAREN K.	1987	AN ARCHAEOLOGICAL ASSESSMENT OF TT 21268, CORONA AREA OF RIVERSIDE COUNTY, CALIFORNIA	CORONA SOUTH
RI-02267	SCHNEIDER, JOAN S.	1988	AN ARCHAEOLOGICAL ASSESSMENT OF TT 21355 LOCATED IN THE CITY OF CORONA, WESTERN RIVERSIDE COUNTY, CALIFORNIA	CORONA NORTH
RI-02270	DROVER, C.E.	1988	AN ARCHAEOLOGICAL ASSESSMENT OF THE PROPOSED TEMSCAL WASH SAND AND GRAVEL MINING OPERATION, TEMSCAL CANYON, RIVERSIDE COUNTY, CALIFORNIA	LAKE MATHEWS
RI-02308	PARR, ROBERT E.	1988	AN ARCHAEOLOGICAL ASSESSMENT OF TP 22782, LOCATED IN THE CORONA AREA OF RIVERSIDE COUNTY, CALIFORNIA	CORONA SOUTH
RI-02379	LSA, INC.	1989	CHASE RANCH SPECIFIC PLAN - ARCHAEOLOGICAL ASSESSMENT	CORONA SOUTH
RI-02381	SCIENTIFIC RESOURCE SURVEYS, INC.	1988	ARCHAEOLOGICAL ASSESSMENT - TP 23959	LAKE MATHEWS
RI-02396	DROVER, C.E.	1989	AN ARCHAEOLOGICAL ASSESSMENT OF THE INDIAN TRAILS PROJECT, TEMESCAL VALLEY, EAST OF CORONA, CALIFORNIA.	ALBERHILL, LAKE MATHEWS
RI-02396	DROVER, C.E.	1989	AN ARCHAEOLOGICAL ASSESSMENT OF THE INDIAN TRAILS PROJECT, TEMESCAL VALLEY, EAST OF CORONA, CALIFORNIA.	ALBERHILL, LAKE MATHEWS
RI-02429	STICKEL, E. GARY AND TERENCE D'ALTROY	1980	SANTA ANA RIVER AND SANTIAGO CREEK: A CULTURAL RESOURCE SURVEY	CORONA NORTH, EL CASCO, PRADO DAM

Report	Author	Year	Title	Quad
RI-02515	BROWN, JOAN C.	1989	CULTURAL RESOURCES RECONNAISSANCE OF THE 1,100 ACRE EAGLE VALLEY PROJECT, RIVERSIDE, CALIFORNIA.	CORONA SOUTH, LAKE MATHEWS
RI-02516	MORGAN, MARILYN	1989	ADDENDUM TO CULTURAL RESOURCES RECONNAISSANCE OF EAGLE VALLEY PROJECT, DATED 17 AND 20 JULY 1989, RIVERSIDE COUNTY, CALIFORNIA	CORONA SOUTH, LAKE MATHEWS
RI-02521	DIBBLE, STEPHEN D.	1987	AN ARCHAEOLOGICAL ASSESSMENT OF THE WARM SPRINGS GREEN DEVELOPMENT, RIVERSIDE COUNTY, CALIFORNIA.	LAKE MATHEWS
RI-02535	KELLER, JEAN S.	1989	AN ARCHAEOLOGICAL ASSESSMENT OF CHANGE OF ZONE 5328/PLOT PLAN 10,893 RIVERSIDE COUNTY, CALIFORNIA.	WILDOMAR
RI-02650	BERGIN, KATHLEEN A. AND RANDAL P. PRESTON	1989	TECHNICAL REPORT 3: ARCHAEOLOGICAL RESEARCH REPORT FOR THE TEMESCAL CANYON COMPOSING FACILITY EIR RIVERSIDE COUNTY, CALIFORNIA. SCH 88100318	LAKE MATHEWS
RI-02651	LOVE, BRUCE	1991	LETTER REPORT: CULTURAL RESOURCES MONITORING: TEMESCAL CANYON COMPOSTING PROJECT	LAKE MATHEWS
RI-02660	SCIENTIFIC RESOURCE SURVEYS	1989	CULTURAL AND PALEONTOLOGICAL RESOURCES INVESTIGATION OF LEE LAKE WATER DISTRICT REACH F EXTENSION RIVERSIDE COUNTY, CALIFORNIA.	LAKE MATHEWS
RI-02743	MCCARTHY, DANIEL	1990	ARCHAEOLOGICAL ASSESSMENT OF THE MORGER PROPERTY LOCATED IN OLSEN CANYON IN TEMESCAL VALLEY, RIVERSIDE COUNTY, CALIFORNIA	LAKE MATHEWS
RI-02744	MCKENNA, JEANETTE A., KEN HEDGES, AND DIANE HAMANN	1990	ARCHAEOLOGICAL TEST EXCAVATIONS IN THE TEMESCAL QUARRY SITE, OLSEN CANYON, RIVERSIDE COUNTY, CALIFORNIA	LAKE MATHEWS
RI-02881	GREENWOOD, ROBERTA AND J. FOSTER	1990	CONTEXT EVALUATION OF HISTORICAL SITES IN THE PRADO BASIN.	CORONA NORTH, PRADO DAM
RI-02890	MCKENNA, J. ET AL.	1990	HISTORIC AND ARCHAEOLOGICAL INVESTIGATIONS OF THE SANDBERG PROJECT SITE, GLEN IVY, RIVERSIDE COUNTY, CALIFORNIA	ALBERHILL, LAKE MATHEWS
RI-02905	MCKENNA, JEANETTE	1988	AN INTENSIVE SURVEY OF THE CORONA RANCH PROJECT AREA, CITY OF CORONA, RIVERSIDE COUNTY, CALIFORNIA.	CORONA NORTH
RI-02980	DIGREGORIO, LEE A.	1990	AN ARCHAEOLOGICAL RECONNAISSANCE REPORT (TRABUCO LAND EXCHANGE)	ALBERHILL, CORONA SOUTH, WILDOMAR
RI-02984	DROVER, CHRISTOPHER	1990	AN ARCHAEOLOGICAL ASSESSMENT OF THE TEMESCAL VALLEY PROJECT, TEMESCAL VALLEY, EAST OF CORONA, CALIFORNIA.	ALBERHILL, LAKE MATHEWS
RI-03138	SCIENTIFIC RESOURCE SURVEYS, INC.	1990	CULTURAL AND PALEONTOLOGICAL SURVEY REPORT ON THE NASTONERO PROPERTY, RIVERSIDE COUNTY, CALIFORNIA	BLACK STAR CANYON, CORONA SOUTH
RI-03153	COTTRELL, MARIE G., D., STEPHEN DIBBLE, AND VADA DRUMMY-CHAPEL	1988	A CULTURAL RESOURCE ASSESSMENT OF A PROPOSED DEVELOPMENT IN THE TEMESCAL VALLEY, RIVERSIDE COUNTY, CALIFORNIA; PART I: ARCHAEOLOGY; PART II: HISTORIC ASSESSMENT	CORONA SOUTH, LAKE MATHEWS
RI-03175	SWOPE, KAREN	1991	CULTURAL RESOURCES ASSESSMENT: TEMESCAL VALLEY PROJECT, RIVERSIDE COUNTY, CALIFORNIA	ALBERHILL, CORONA SOUTH, LAKE MATHEWS
RI-03306	FREEMAN, TREVOR A. AND DAVID M. VAN HORN	1989	ARCHAEOLOGICAL SURVEY REPORT: CULTURAL RESOURCE ASSESSMENT OF THE SEIGAL FARMS PROPERTY LAKE MATHEWS, RIVERSIDE COUNTY, CALIFORNIA	LAKE MATHEWS
RI-03320	DROVER, CHRISTOPHER	1990	ENVIRONMENTAL IMPACT EVALUATION: AN ARCHAEOLOGICAL ASSESSMENT OF THE WERNER SURFACE MINE, TEMESCAL VALLEY, EAST OF CORONA, CALIFORNIA	ALBERHILL, LAKE MATHEWS
RI-03322	THE KEITH COMPANIES	1988	STATE ROUTE 91 IMPROVEMENTS PROJECT: HISTORIC PROPERTY SURVEY REPORT	BLACK STAR CANYON, CORONA NORTH, PRADO DAM, RIVERSIDE WEST
RI-03322	THE KEITH COMPANIES	1988	STATE ROUTE 91 IMPROVEMENTS PROJECT: HISTORIC PROPERTY SURVEY REPORT	BLACK STAR CANYON, CORONA NORTH, PRADO DAM, RIVERSIDE WEST

Report	Author	Year	Title	Quad
RI-03514	MACKO, MICHAEL E. AND KEITH D. RHODES	1992	PHASE I ARCHAEOLOGICAL RESOURCE ASSESSMENT: GLEN IVY HOT SPRINGS FLOOD CONTROL PROJECT, LINKED TO PLOT PLAN 9026, RIVERSIDE COUNTY, CALIFORNIA	LAKE MATHEWS
RI-03564	MCKENNA, JEANNETTE A.	1992	A CULTURAL RESOURCES INVESTIGATION AND SITE EVALUATIONS FOR THE PROPOSED 200 ACRE WINDWARD DEVELOPMENT PROJECT AREA, NORCO, RIVERSIDE COUNTY, CA.	CORONA NORTH
RI-03598	SEYMOUR, GREGORY AND DAVID DOAK	1992	AN ARCHAEOLOGICAL SURVEY FOR THE WESTERN RIVERSIDE REGIONAL WASTEWATER TREATMENT FACILITY CONVEYANCO SYSTEM IN CORONA AND NORCO, RIVERSIDE COUNTY, CALIFORNIA.	CORONA NORTH
RI-03599	SEYMOUR, GREGORY R.	1993	AN ARCHAEOLOGICAL SURVEY FOR THE HOME GARDENS SANITARY DISTRICT INITIAL STUDY IN CORONA, RIVERSIDE COUNTY, CALIFORNIA.	CORONA NORTH, CORONA SOUTH
RI-03602	BROWN, JOAN C.	1993	CULTURAL RESOURCE RECONNAISSANCE AND ASSESSMENT FOR THE EAGLE VALLEY EAST PROJECT.	LAKE MATHEWS
RI-03629	GREGORY SEYMOUR AND DAVID DOAK	1992	AN ARCHAEOLOGICAL SURVEY FOR THE WESTERN RIVERSIDE REGIONAL WASTE WATER TREATMENT SYSTEM IN CORONA AND NORCO, RIVERSIDE COUNTY.	CORONA NORTH
RI-03722	DESAUTELS, NANCY AND ROBERT BEER	1993	GEOPHYSICAL INVESTIGATIONS AND SUBSURFACE RECOVERY ON TOM'S FARMS PROPERTY, RIVERSIDE COUNTY, CALIFORNIA; PARCEL MAP 4927	LAKE MATHEWS
RI-03768	ALEXANDROWICZ , J. S., ARTHUR KUHNER, EDWARD KNELL, AND SUSAN ALEXANDROWICZ	1994	HISTORIC PRESERVATION INVESTIGATIONS FOR THE SOUTH NORCO CHANNEL LINE SB, STAGE 1, CITY OF CORONA, CITY OF NORCO, COUNTY OF RIVERSIDE, CALIFORNIA	CORONA NORTH
RI-03810	DUFFIELD, ANNE Q.	1989	ARCHAEOLOGICAL & HISTORICAL SURVEY REPORT FOR THE CAJALCO CANYON ROCK QUARRY	LAKE MATHEWS
RI-03811	HATHEWAY, ROGER	1990	LETTER REPORT: SUPPLEMENT TO ARCHAEOLOGICAL & HISTORICAL SURVEY REPORT FOR THE CAJALCO CANYON ROCK QUARRY	LAKE MATHEWS
RI-03890	LSA ASSOCIATES, INC.	1990	AN ARCHAEOLOGICAL ASSESSMENT OF THE EMPIRE HOMES SPECIFIC PLAN AND TENTATIVE TRACT 25466, RIVERSIDE COUNTY, CALIFORNIA	CORONA SOUTH
RI-04120	MASON, ROGER, PHILIPPE LAPIN, AND WAYNE H. BONNER	1998	CULTURAL RESOURCES RECORDS SEARCH AND SURVEY REPORT FOR A PACIFIC BELL MOBILE SERVICES TELECOMMUNICATIONS FACILITY: CM 150-03, CITY OF CORONA, CALIFORNIA	CORONA NORTH
RI-04144	LOVE, BRUCE AND BAI "TOM" TANG	1998	CULTURAL RESOURCES REPORT: TEMESCAL VALLEY REGIONAL INTERCEPTOR, SANTA ANA WATERSHED PROJECT AUTHORITY, RIVERSIDE COUNTY, CALIFORNIA	ALBERHILL, CORONA NORTH, CORONA SOUTH, LAKE ELSINORE, LAKE MATHEWS
RI-04144	LOVE, BRUCE AND BAI "TOM" TANG	1998	CULTURAL RESOURCES REPORT: TEMESCAL VALLEY REGIONAL INTERCEPTOR, SANTA ANA WATERSHED PROJECT AUTHORITY, RIVERSIDE COUNTY, CALIFORNIA	ALBERHILL, CORONA NORTH, CORONA SOUTH, LAKE ELSINORE, LAKE MATHEWS
RI-04144	LOVE, BRUCE AND BAI "TOM" TANG	1998	CULTURAL RESOURCES REPORT: TEMESCAL VALLEY REGIONAL INTERCEPTOR, SANTA ANA WATERSHED PROJECT AUTHORITY, RIVERSIDE COUNTY, CALIFORNIA	ALBERHILL, CORONA NORTH, CORONA SOUTH, LAKE ELSINORE, LAKE MATHEWS
RI-04170	LOVE, BRUCE AND BAI "TOM" TANG	1999	IDENTIFICATION AND EVALUATION OF HISTORIC PROPERTIES: TEMESCAL VALLEY PIPELINE PHASE III (EXTENSION), CITY OF CORONA, RIVERSIDE COUNTY, CALIFORNIA	CORONA SOUTH
RI-04171	MCKENNA, JEANETTE AND KAREN C. BENNETT	1998	HISTORC RESOURCES INVESTIGATION AND EVALUATION OF THE RESIDENCE LOCATED AT 2542 GILBERT AVENUE, CORONA, RIVERSIDE COUNTY, CALIFORNIA	CORONA SOUTH
RI-04203	CHAMBERS GROUP, INC.	1993	CULTURAL RESOURCES SURVEY FOR THE CENTRAL POOL AUGMENTATION AND WATER QUALITY PROJECT.	BLACK STAR CANYON, CANADA GOBERNADORA, CORONA NORTH, CORONA SOUTH, LAKE MATHEWS, PRADO DAM
RI-04357	LAPIN, PHILIPPE	2000	LETTER REPORT: CULTURAL RESOURCE ASSESSMENT FOR MODIFICATIONS TO PACIFIC BELL WIRELESS FACILITY CM 109-06, COUNTY OF RIVERSIDE, CALIFORNIA.	CORONA NORTH
RI-04360	DUKE, CURT	2000	LETTER REPORT: CULTURAL RESOURCES ASSESSMENT FOR THE AT&T WIRELESS SERVICES FACILITY NUMBER C581, COUNTY OF RIVERSIDE, CALIFORNIA.	CORONA NORTH

Report	Author	Year	Title	Quad
RI-04659	WHITE, ROBERT S. AND LAURA S. WHITE	2004	A CULTURAL RESOURCES ASSESSMENT OF A PROPOSED REGIONAL DRAINAGE FACILITY, TEMESCAL CANYON ROAD AT LEROY ROAD, SOUTH CORONA, RIVERSIDE COUNTY	CORONA SOUTH, LAKE MATHEWS
RI-04665	LOVE, BRUCE AND BAI "TOM" TANG	1997	IDENTIFICATION AND EVALUATION OF HISTORIC PROPERTIES TEMESCAL VALLEY PROJECT ELSINORE VALLEY MUNICIPAL WATER DISTRICT RIVERSIDE COUNTY, CALIFORNIA	ALBERHILL, CORONA SOUTH, LAKE MATHEWS
RI-04665	LOVE, BRUCE AND BAI "TOM" TANG	1997	IDENTIFICATION AND EVALUATION OF HISTORIC PROPERTIES TEMESCAL VALLEY PROJECT ELSINORE VALLEY MUNICIPAL WATER DISTRICT RIVERSIDE COUNTY, CALIFORNIA	ALBERHILL, CORONA SOUTH, LAKE MATHEWS
RI-04713	SMITH, BROOKS AND DEBORAH MCLEAN	2004	CULTURAL RESOURCE ASSESSMENT, FAR WEST HOUSING, LLC, SIERRA BELLA PROJECT, RIVERSIDE COUNTY, CALIFORNIA	BLACK STAR CANYON, CORONA SOUTH
RI-04737	STRUDWICK, IVAN H. AND KATHLEEN ANN BERGIN	1999	ARCHAEOLOGICAL SURVEY, TESTING AND EVALUATION OF SITES CA-RIV-101/H, CA-RIV- 2992/H, CA-RIV-6152/H AND CA-RIV-6153 FOR THE TEMESCAL SUMMIT PROJECT, RIVERSIDE COUNTY, CALIFORNIA	LAKE MATHEWS
RI-04765	HOOVER, ANNA M., KRISTIE R. BLEVINS, HUGH M. WAGNER, AND STEPHEN VAN WORMER	2004	AN ARCHAEOLOGICAL AND PALEONTOLOGICAL PHASE I SURVEY, A PHASE II SIGNIFICANCE TESTING PROGRAM, AND A HISTORIC PROPERTIES EVALUATION REPORT, THE SERRANO SPECIFIC PLAN (SSP), CASE #441, RIVERSIDE COUNTY, CALIFORNIA	LAKE MATHEWS
RI-04871	LOVE, BRUCE, MICHAEL HOGAN, AND HARRY QUINN	2001	ARCHAEOLOGICAL MONITORING REPORT: TRILOGY AT GLEN IVY: NEAR THE COMMUNITY OF GLEN IVY HOT SPRINGS, RIVERSIDE COUNTY, CALIFORNIA	CORONA SOUTH, LAKE MATHEWS
RI-04891	WLODARSKI, ROBERT J.	2002	A PHASE 1 ARCHAEOLOGICAL STUDY FOR THE PROPOSED CORONA SENIOR HOUSING PROJECT LOCATED AT 701, 733, 735, AND 777 SHERMAN AVENUE (APN# 110-040- 013, -014,-015, AND -016), CITY OF CORONA, COUNTY OF RIVERSIDE, CALIFORNIA	CORONA NORTH
RI-04895	FOX, JULIA K., ANNA M. HOOVER, KRISTIE R. BLEVINS, HUGH M. WAGNER, AND MARK A ROEDER	2005	A BIOLOGICAL, ARCHAEOLOGICAL, AND PALEONTOLOGICAL PHASE IV MITIGATION REPORT, MONTE VERDE, TRACT 29000, +457-ACRE PROPERTY, CITY OF CORONA, COUNTY OF RIVERSIDE, CALIFORNIA	CORONA SOUTH
RI-04969	HOOVER, ANNA M., WILLIAM R. GILLEAN, AND HUGH M. WAGNER	2005	A PHASE I ARCHAEOLOGICAL AND PALEONTOLOGICAL SURVEY REPORT FOR APNS 290- 060-007, -017 AND -019 AND 290-080-012, -014 AND -015, A +32-ACRE PROPERTY, COUNTY OF RIVERSIDE, CALIFORNIA.	LAKE MATHEWS
RI-05153	HOLMES, AMY AND J.D. STEWART	2005	RESULTS OF A CULTURAL AND PALEONTOLOGICAL ASSESSMENT OF THE APPROXIMATELY 4 ACRE SMITH AVENUE	CORONA NORTH
RI-05409	LOVE, BRUCE, BAI "TOM" TANG, MICHAEL HOGAN, AND MARIAM DAHDUL	2001	HISTORICAL/ARCHAEOLOGICAL RESOURCES SURVEY REPORT, ARLINGTON DESALTER AND PIPELINE, CITIES OF RIVERSIDE, CORONA, AND NORCO, RIVERSIDE COUNTY, CALIFORNIA	CORONA NORTH, RIVERSIDE WEST
RI-05433	JACKSON, ADRIANNA	2000	LETTER REPORT: RECORDS SEARCH RESULTS FOR SPRING PCS FACILITY RV54XC472A (GREEN RIVER WATER TANK SITE), CORONA, RIVERSIDE COUNTY, CALIFORNIA	PRADO DAM
RI-05435	JACKSON, ADRIANNA	2000	LETTER REPORT: RECORDS SEARCH RESULTS FOR SPRING PCS FACILITY RV34ZC472B (GREEN RIVER FIRE STATION SITE), CORONA, RIVERSIDE COUNTY, CALIFORNIA	PRADO DAM
RI-05764	WLODARSKI, ROBERT J.	2005	LETTER REPORT: RECORDS SEARCH AND FIELD RECONNAISSANCE RESULTS FOR THE PROPOSED NEXTEL WIRELESS COMMUNICATIONS SITE (CA5379-A: MOORE ELECTRIC) LOCATED AT 463 NORTH SMITH AVENUE, CITY OF CORONA, RIVERSIDE COUNTY, CALIFORNIA 92880	CORONA NORTH
RI-05827	WHITE, ROBERT S., LAURIE S. WHITE, AND DAVID M. VAN HORN	2003	CULTURAL RESOURCES INVESTIGATION FOR THE ELSINORE ADVANCED PUMPED STORAGE PROJECT, LAKE ELSINORE, RIVERSIDE COUNTY	ALBERHILL, LAKE ELSINORE

Report	Author	Year	Title	Quad
RI-06085	STERNER, MATHEW., ET AL.	2004	RANCHING, RAILS, AND CLAY: THE DEVELOPMENT AND DEMISE OF THE TOWN OF RINCON/PRADO, ARCHAEOLOGICAL DATA RECOVERY AT CA-RIV-1039H AND CA-RIV- 1044H, RIVERSIDE COUNTY, CALIFORNIA	CORONA NORTH
RI-06103	AISLIN-KAY, MARNIE	2004	CULTURAL RESOURCE RECORDS SEARCH AND SITE VISIT RESULTS FOR SPRINT TELECOMMUNICATIONS FACILITY CANDIDATE RV60XC809A (255 AIRPORT CIRCLE), LOCATED AT 255 AIRPORT CIRCLE, CORONA, RIVERSIDE COUNTY, CA	CORONA NORTH
RI-06214	EARTH TOUCH, INC.	2006	NEW TOWER ("NT") SUBMISSION PACKET, FCC FORM 620: CORONA FIRE STATION	CORONA NORTH
RI-06626	HOGAN, MICHAEL	2006	LETTER REPORT: ARCHAEOLOGICAL/PALEONTOLOGICAL MONITORING OF EARTH-MOVING ACTIVITIES, THE SYCAMORE CREEK PROJECT, PHASE 2B, TRACTS 30440 (PA 2B), 30440-2 (PA 12B), AND 30440-3 (PA 10), NEAR THE COMMUNITY OF GLEN IVY HOT SPRINGS, RIVERSIDE COUNTY, CALIFORNIA	ALBERHILL, LAKE MATHEWS
RI-06888	LERCH, MICHAEL K. AND GRAY, MARLESA A.	2006	CULTURAL RESOURCES ASSESSMENT OF THE VALLEY-IVYGLEN TRANSMISSION LINE PROJECT, RIVERSIDE COUNTY, CALIFORNIA	ALBERHILL, LAKE ELSINORE, LAKE MATHEWS, PERRIS, ROMOLAND, STEELE PEAK
RI-06911	KING, GARY	2000	NEGATIVE HISTORY PROPERTY SURVEY REPORT FOR STATE ROUTE 91 AT MAIN STREET INTERCHANGE CORONA, CALIFORNIA	CORONA NORTH
RI-07166	CAPRICE D. HARPER	2004	CULTURAL RESOURCE ASSESSMENT FOR CINGULAR WIRELESS FACILITY NO. SB 286-01 NEAR CORONA, RIVERSIDE COUNTY, CALIFORNIA	PRADO DAM
RI-07219	COOLEY, THEDORE G.	2007	ARCHAEOLOGICAL SURVEY REPORT FOR SOUTHERN CALIFORNIA EDISON COMPANY UNDERGROUND CABLE CONDUIT INSTALLATIONS FOR THE EAST AND WEST TAPS TO THE CHASE SUBSTATION, CITY OF CORONA, RIVERSIDE COUNTY, CALIFORNIA	CORONA SOUTH
RI-07425	MCLEAN, DEBORAH	2007	HISTORIC PROPERTY SURVEY REPORT (FIRST SUPPLEMENTAL HISTORIC PROPERTY SURVEY REPORT: 08/12-RIV/ORA-91-PM 15.9-19.9/0.0-2.9 KP25.6-32.0/0.0/4.7 EASTBOUND LANE ADDITION EA: 0E800/0G040)	BLACK STAR CANYON, PRADO DAM
RI-07433	BONNER, H. WAYNE AND AISLIN-KAY, MARNIE	2007	CULTURAL RESOURCE RECORDS SEARCH AND SITE VISIT RESULTS FOR T-MOBILE CANDIDATE IE05297 (SYCAMORE CREEK WATER TANK), UNADDRESSED PARCEL, CORONA, RIVERSIDE COUNTY, CALIFORNIA	ALBERHILL
RI-07494	UNDERBRINK, SUSAN	2006	HISTORIC PROPERTY SURVEY REPORT (ARCHAEOLOGICAL SURVEY REPORT FOR THE EASTBOUND SR-91 LANE ADDITION PROJECT FROM SR-241 TO SR-71, COUNTY OF ORANGE, AND COUNTY OF RIVERSIDE CALIFORNIA)	BLACK STAR CANYON, PRADO DAM
RI-07666	COOLEY, THEODORE G. AND ANDREA M. CRAFT	2008	ADDENDUM: CULTURAL RESOURCES ASSESSMENT OF THE VALLEY-IVYGLEN TRANSMISSION LINE PROJECT, RIVERSIDE COUNTY, CALIFORNIA	ALBERHILL, LAKE ELSINORE, LAKE MATHEWS
RI-07666	COOLEY, THEODORE G. AND ANDREA M. CRAFT	2008	ADDENDUM: CULTURAL RESOURCES ASSESSMENT OF THE VALLEY-IVYGLEN TRANSMISSION LINE PROJECT, RIVERSIDE COUNTY, CALIFORNIA	ALBERHILL, LAKE ELSINORE, LAKE MATHEWS
RI-07734	GREENE, RICHARD AND BRIAN F. SMITH	2006	A PHASE I ARCHAEOLOGICAL ASSESSMENT OF THE SITEWORK DEVELOPMENT PROJECT, APN 279-230-034	CORONA SOUTH
RI-07766	BROWN, JOAN C.	2007	CULTURAL RESOURCES SURVEY OF THE NEW PROPOSED CAJALCO ROAD, EAGLE CANYON ROAD AND THE SCENARIO 2 ROAD ALIGNMENTS, CITY OF CORONA, RIVERSIDE COUNTY, CALIFORNIA. (INCLUDING RESULTS FROM PREVIOUS EAGLE VALLEY ACCESS ROAD STUDIES)	CORONA NORTH, CORONA SOUTH, LAKE MATHEWS, RIVERSIDE WEST
RI-08043	SHERRI GUST AND AMY GLOVER	2008	PHASE I CULTURAL RESOURCES ASSESSMENT REPORT FOR THE CENTENNIAL HIGH SCHOOL PROJECT IN CORONA, CALIFORNIA	CORONA SOUTH
RI-08044	SHERRI GUST AND AMY GLOVER	2008	PHASE I CULTURAL RESOURCES ASSESSMENT REPORT FOR THE SANTIAGO HIGH SCHOOL PROJECT IN CORONA, CALIFORNIA.	CORONA SOUTH

Report	Author	Year	Title	Quad
RI-08045	SHERRI GUST, AMY GLOVER, AND VERONICA HARPER	2008	PHASE I CULTURAL RESOURCES ASSESSMENT REPORT FOR THE LINCOLN ALTERNATIVE ELEMENTARY SCHOOL PROJECT IN CORONA, CALIFORNIA	CORONA SOUTH
RI-08215	BAI "TOM" TANG	2009	LETTER REPORT: HISTORICAL/ARCHAEOLOGICAL RESOURCES SURVEY OF A PORTION OF APN 290-660-004, GLEN IVY HOT SPRINGS AREA, RIVERSIDE COUNTY, CALIFORNIA	ALBERHILL
RI-08238	PAMELA MAXWELL	1993	LOS ANGELES DISTRICT PROJECT TO CLEAR VEGETATION TO REGAIN EFFICIENT USE OF WATER GAUGING STATION, AND REPAIR EXISTING CONCRETE CHANNEL BOTTOM, ON THE SANTA ANA RIVER, RIVERSIDE COUNTY, CALIFORNIA-CULTURAL RESOURCES.	PRADO DAM
RI-08519	JAMES J. SCHMIDT	2010	LETTER REPORT: MIRA LOMA-CLEARGEN-DELGEN 66KV TRANSMISSION LINE DETERIORATED POLE REPLACEMENT PROJECT (WO 4305-4114; 80028383), CORONA, RIVERSIDE COUNTY, CALIFORNIA	CORONA NORTH
RI-08533	JAMES J. SCHMIDT	2010	LETTER REPORT: BUCKBOARD AND HITCH 12KV (P#2263076E) AND UNIDENTIFIED CIRCUIT (P#2245653E) DETERIORATED POLE REPLACEMENT PROJECT (WO 6088-4800; 0-4878, & 0-4880), RIVERSIDE COUNTY, CALIFORNIA	LAKE MATHEWS, PECHANGA
RI-08534	JAMES J. SCHMIDT	2010	LETTER REPORT: DETERIORATED POLE REPLACEMENTS PROJECTS (WO 6088-4800; 0- 4876, 0-4877, 0-4881, 0-4883.2010), RIVERSIDE COUNTY, CALIFORNIA	ALBERHILL, BACHELOR MTN, LAKE MATHEWS, SAGE
RI-08605	SUSAN GOLDBERG	2010	ARCHAEOLOGICAL SURVEY REPORT FOR STATE ROUTE 91/71 INTERCHANGE PROJECT, RIVERSIDE COUNTY, CALIFORNIA (08-RIV-91- P.M. R0.6/ R2.6; 08-RIV-71. 1.6/3.0) EA 0F541	BLACK STAR CANYON, PRADO DAM
RI-08623	CARY D. COTTERMAN AND EVELYN N. CHANDLER	2011	CULTURAL RESOURCES INVENTORY OF TWO PROPOSED POLE REPLACEMENTS IN CORONA AND TEMESCAL CANYON, RIVERSIDE COUNTY, CALIFORNIA (W.O. 6034-4800, K 4892, TD 495676)	CORONA SOUTH, LAKE MATHEWS
RI-08660	WAYNE H. BONNER, SARAH A. WILLIAMS, AND KATHLEEN A. CRAWFORD	2011	CULTURAL RESOURCES RECORDS SEARCH AND SITE VISIT RESULTS FOR T-MOBILE USA CANDIDATE IE24189-A	CORONA NORTH
RI-08694	WAYNE H. BONNER, SARAH A. WILLIAMS, AND KATHLEEN A. CRAWFORD	2011	CULTURAL RESOURCES RECORD SEARCH AND SITE VISIT RESULTS FOR T-MOBILE USA CANDIDATE IE25763-A	CORONA SOUTH
RI-08707	WAYNE H. BONNER, MARNIE AISLIN- KAY, AND KATHLEEN A. CRAWFORD	2010	CULTURAL RESOURCES RECORD SEARCH AND SITE VISIT RESULTS FOR T-MOBILE USA CANDIDATE IE24154-D	CORONA NORTH
RI-08761	BAI "TOM" TANG, MICHAEL HOGAN, DANIEL BALLESTER, HARRY M. QUINN, AND LAURA H. SHAKER	2012	IDENTIFICATION AND EVALUATION OF HISTORIC PROPERTIES: BUTTERFIELD PARK RECLAIMED WATERLINE	CORONA NORTH
RI-08763	ROBIN HOFFMAN, TIMOTHY YATES, AND KAREN CRAWFORD	2012	CULTURAL RESOURCES INVENTORY REPORT FOR THE PROPOSED CIRCLE CITY SUBSTATION AND MIRA LOMA-JEFFERSON SUBTRANSMISSION LINE PROJECT	CORONA NORTH, CORONA SOUTH, GUASTI
RI-08817	BAI "TOM" TANG, MICHAEL HOGAN, DANIEL BALLESTER, LAURA H. SHAKER, AND HARRY M. QUINN	2012	IDENTIFICATION AND EVALUATION OF HISTORIC PROPERTIES BUTTERFIELD PARK RECYCLED WATERLINE PROJECT	CORONA NORTH
RI-08826	BAI "TOM" TANG, MICHAEL HOGAN, AND TERRI JACQUEMAIN	2012	PHASE I CULTURAL RESOURCES ASSESSMENT: ASSESSOR'S PARCEL NOS. 172-110-007 AND -008	CORONA NORTH

Report	Author	Year	Title	Quad
RI-08838	WAYNE H. BONNER AND SARAH A. WILLIAMS	2012	LETTER REPORT: CULTURAL RESOURCES RECORDS SEARCH AND SITE VISITS RESULTS FOR AT&T MOBILITY, LLC CANDIDATE LA6044 (CATTLE RUN & GREEN RIVER), 1400 NICHOLAS PLACE, CORONA, RIVERSIDE COUNTY, CALIFORNIA	PRADO DAM
RI-08870	CARY D. COTTERMAN AND EVELYN N. CHANDLER	2011	CULTURAL RESOURCES INVENTORY OF TWO PROPOSED POLE REPLACEMENTS IN CORONA AND TEMESCAL CANYON, RIVERSIDE COUNTY, CALIFORNIA (W.O. 6034-4800, K 4872, TD 495676)	CORONA SOUTH, LAKE MATHEWS
RI-08897	RIORDAN GOODWEN	2012	CULTURAL RESOURCE ASSESSMENT: SANTA ANA RIVER TRAIL IMPROVEMENTS PROJECT	BLACK STAR CANYON, PRADO DAM
RI-08902	JOSH SMALLWOOD	2012	CULTURAL RESOURCES REPORT FOR THE PROPOSED MAGNOLIA POINT PROJECT, SW CORNER 6TH STREET AND MAGNOLIA AVENUE IN CORONA, RIVERSIDE COUNTY, CALIFORNIA. ASSESSOR'S PARCEL NOS. 107-030-003, -014, -015, -018, -019, -020, -024, AND -027	CORONA SOUTH
RI-08988	SUSAN L. BUPP	2013	SUPPLEMENTAL ARCHAEOLOGICAL SURVEY REPORT FOR SR-91CORRIDOR IMPROVEMENT PROJECT, CITY OF CORONA, RIVERSIDE COUNTY, CALIFORNIA, CALIFORNIA DEPARTMENT OF TRANSPORTATION, DISTRICT 8	BLACK STAR CANYON, CORONA NORTH, CORONA SOUTH, PRADO DAM, RIVERSIDE WEST
RI-08989	CARRIE CHASTEEN	2013	SUPPLEMENTAL FINDING OF NO ADVERSE EFFECT REPORT FOR SR-91 CORRIDOR IMPROVEMENT PROJECT, CITY OF CORONA, RIVERSIDE COUNTY, CALIFORNIA, CALIFORNIA DEPARTMENT OF TRANSPORTATION, DISTRICT 8	BLACK STAR CANYON, CORONA NORTH, CORONA SOUTH, PRADO DAM, RIVERSIDE WEST
RI-09088	MICHAEL DICE	2009	CULTURAL RESOURCE SURVEY AND HISTORIC RESOURCE ASSESSMENT OF THE CORONA CITY PARK, 930 E. SIXTH STREET, CORONA, CALIFORNIA	CORONA NORTH, CORONA SOUTH
RI-09144	J. CLAIRE DEAN	2009	JOSHUA TREE NATIONAL PARK: FINAL REPORT, ROCK IMAGE CONDITION ASSESSMENT AND CONSERVATION PROJECT	INDIAN COVE, KEYS VIEW, MALAPAI HILL
RI-09216	DON C. PREZ	2013	CULTURAL RESOURCES SURVEY RS0310	CORONA SOUTH
RI-09221	HEATHER R. PUCKETT	2013	CULTURAL RESOURCES SUMMARY FOR THE PROPOSED VERIZON WIRELESS. INC. PROPERTY AT THE TREEHOUSE SITE 615 RICHEY STREET, CORONA RIVERSIDE COUNTY, CALIFORNIA 92879	CORONA NORTH
RI-09304	SARA WILLIAMS	2014	CULTURAL RESOURCE RECORDS SEARCH AND SITE VISIT RESULTS FOR VERIZON WIRELESS CANDIDATE 'KLUG', 2395 RAILROAD STREET, CORONA, RIVERSIDE COUNTY, CALIFORNIA	CORONA NORTH
RI-09337	SHELLY LONG	2013	CORONA REGIONAL MEDICAL CENTER EXPANSION PROJECT ARCHAEOLOGICAL AND PALEONTOLOGICAL RESOURCES REPORT	CORONA NORTH, CORONA SOUTH
RI-09384	SUSAN L. BUPP	2013	SUPPLEMENTAL ARCHAEOLOGICAL SURVEY REPORT FOR SR-91 CORRIDOR IMPROVEMENT PROJECT, CITY OF CORONA, RIVERSIDE COUNTY, CALIFORNIA	BLACK STAR CANYON, CORONA NORTH, CORONA SOUTH, PRADO DAM, RIVERSIDE WEST
RI-09384	SUSAN L. BUPP	2013	SUPPLEMENTAL ARCHAEOLOGICAL SURVEY REPORT FOR SR-91 CORRIDOR IMPROVEMENT PROJECT, CITY OF CORONA, RIVERSIDE COUNTY, CALIFORNIA	BLACK STAR CANYON, CORONA NORTH, CORONA SOUTH, PRADO DAM, RIVERSIDE WEST
RI-09384	SUSAN L. BUPP	2013	SUPPLEMENTAL ARCHAEOLOGICAL SURVEY REPORT FOR SR-91 CORRIDOR IMPROVEMENT PROJECT, CITY OF CORONA, RIVERSIDE COUNTY, CALIFORNIA	BLACK STAR CANYON, CORONA NORTH, CORONA SOUTH, PRADO DAM, RIVERSIDE WEST
RI-09419	BRIAN F. SMITH, DAVID K. GRABSKI, AND TRACY A. STOPES	2014	A SECTION 106 (NHPA) CULTURAL RESOURCES STUDY FOR THE TOSCANA PROJECT, RIVERSIDE COUNTY, CALIFORNIA	LAKE MATHEWS
RI-09420	LSA ASSOCIATES INC.	2000	CULTURAL RESOURCES ASSESSMENT GREEN RIVER RANCH SPECIFIC PLAN CORONA, RIVERSIDE COUNTY, CALIFORNIA, LSA PROJECT NO. CCR932	BLACK STAR CANYON, PRADO DAM
RI-09584	JUSTIN LEV- TOV, MEGAN WILSON, LYNN FURNIS, AND SHERRI GUST	2016	SHOPPES AT CORONA VISTA CULTURAL RESOURCES ASSESSMENT CITY OF CORONA, RIVERSIDE COUNTY, CALIFORNIA	CORONA SOUTH

Report	Author	Year	Title	Quad
RI-09593	MICHAEL HOGAN	2016	FINAL REPORT ON ARCHAEOLOGICAL AND PALEONTOLOGICAL RESOURCES MONITORING SANTA ANA CANYON - BELOW PRADO: INLAND EMPIRE BRINE LINE PROTECTION PROJECT NEAR THE CITY OF CORONA, RIVERSIDE COUNTY, CALIFORNIA CRM TECH CONTRACT #2903	PRADO DAM
RI-09603	ANDRE SIMMONS AND SHERRI GUST	2016	CULTURAL RESOURCES ASSESSMENT FOR THE CORONA AFFORDABLE HOUSING PROJECT, CITY OF CORONA, RIVERSIDE COUNTY, CALIFORNIA	CORONA SOUTH
RI-09678	CARRIE D. WILLS AND KATHLEEN A. CRAWFORD	2015	DIRECT APE HISTORIC ARCHITECTURAL ASSESSMENT FOR T-MOBILE WEST, LLC CANDIDATE IE04109A (CM109 LB124 [CORONA DOWNTOWN]) 511 SOUTH JOY STREET, CORONA , RIVERSIDE COUNTY	CORONA NORTH
RI-09714	HEATHER R. PUCKETT	2014	CULTURAL RESOURCES SUMMERY FOR THE PROPOSED VERIZON WIRELESS, INC., PROPERTY AT THE RAILROAD SITE, 665 WEST RINCON STREET, CORONA, RIVERSIDE COUNTY, CALIFORNIAN 92880	CORONA NORTH, CORONA SOUTH
RI-09741	RIORDAN GOODWIN	2016	CULTURAL RESOURCES ASSESSMENT CORONA 720 PROJECT LSA PROJECT NO. GRY1501	BLACK STAR CANYON, PRADO DAM
RI-09746	JASON ANDREW MILLER	2013	CULTURAL RESOURCES SURVEY REPORT ADDENDUM VALLEY-IVY GLENN 115KV TRANSMISSION LINE PROJECT SOUTHERN CALIFORNIA EDISON RIVERSIDE COUNTY, CALIFORNIA	ALBERHILL, LAKE ELSINORE, ROMOLAND
RI-09770	BRIAN F. SMITH AND DAVID K. GRABSKI	2014	A PHASE II CULTURAL RESOURCE EVALUATION REPORT FOR RIV-8118 AT THE TOSCANA PROJECT	LAKE MATHEWS
RI-09771	BRIAN F. SMITH AND JENNIFER R. KRAFT	2014	HISTORIC STRUCTURE ASSESSMENT 11950 EL HERMANDO ROAD	LAKE MATHEWS

The record search indicated that 96 previously recorded cultural resources are located within the RWMP Project area (Table 2). The previously recorded resources include prehistoric and historic archaeological sites, built environment resources and isolates. The locations of the cultural resources are included in Confidential Appendix C. Thirty of the previously recorded cultural resources are also listed as built environment resources and were included as historic addresses by the EIC, shown in Table 3.

The 96 previously recorded resources consist of 28 prehistoric resources, 66 historic resources, and 2 multicomponent resources. Fourteen of the resources are within 100 feet of a Project Component and an additional two of the resources are intersected by a Project Component.

Table 2. Previously Recorded Cultural Resources within the RWMP Project Area

Primary Number	Trinomial	Period	Quadrangle	Recorder Date	Intersect Project Component	Within 100 ft of Project Component
P-33-000675	CA-RIV-675	Prehistoric	Corona North	Smith (1952) S. Schwartz (1980)	No	No
P-33-000808	CA-RIV-808	Multicomponent	Corona North	Reiss, Clough, and Banwer (1974) Cottrell (1980)	No	No
P-33-001040	CA-RIV-1040	Prehistoric	-	G.Smith (n.d.) M.C. Hall (1975) S. Schwartz (1980)	No	No
P-33-001044	CA-RIV-1044	Historic	-	M. Hall (1975) S. Schwartz (1980) M.D. Selverson (1995)	No	No
P-33-001259	CA-RIV-1259	Prehistoric	-	J.P. Barker (1974) R.S. Brown and J.A. McKenna (1988)	No	No
P-33-001438	CA-RIV-1438	Prehistoric	-	S. Hammond (1977) Cottrell (1980)	Sampson Pipeline	No

Primary Number	Trinomial	Period	Quadrangle	Recorder Date	Intersect Project Component	Within 100 ft of Project Component
P-33-001439	CA-RIV-1439	Prehistoric	-	S. Hammond (1977) Cottrell (1980)	No	No
P-33-001440	CA-RIV-1440	Prehistoric	-	S. Hammond (1977) Cottrell (1980) P. Chace and B. McManis (1993)	No	No
P-33-001441	CA-RIV-1441	Prehistoric	-	S. Hammond (1977)	No	No
P-33-001443	CA-RIV-1443	Prehistoric	-	S. Hammond (1977) J. Swenson (1979) C.E. Drover (1979) R.S. Brown and J.A. McKenna (1988) L. Franklin and J. Schmidt (1992) P.O. Maxon (1999)	No	No
P-33-001445	CA-RIV-1445	Prehistoric	Corona North	S. Hammond (1977) J. McKenna and R. Brown (1988) R.S. Brown and J.A. McKenna (1988)	No	No
P-33-001511	-	Historic	Corona South	M. Brown (1978) C. Rector (1983)	No	No
P-33-001653	CA-RIV-1653	Prehistoric	Corona North	Pink and Singer (1979) Cottrell (1980)	No	No
P-33-001654	CA-RIV-1654	Prehistoric	Corona North	Ping, Singer, Brown, and Giansanti (1979) Cottrell (1980)	No	No
P-33-001801	CA-RIV-1801	Prehistoric	Prado Dam	M. Desautels and J. Cizek (1979)	No	No
P-33-001837	-	Prehistoric	Corona South	Schupp and Wessel (1980) R.S. Shepard (2004)	No	No
P-33-003055	-	Historic	Corona South	K.K. Swope (1987)	No	No
P-33-003175	CA-RIV-4112H	Prehistoric	Anza	S.J. Bouscaren, J. Pierrou, and E. Plummer (1987)	No	No
P-33-003424	CA-RIV-3424	Historic	Black Star Canyon	A. Pigniolo (1988)	No	No
P-33-003559	CA-RIV-3559	Prehistoric	Corona South	D.F McCarthy (1989)	No	No
P-33-003693	CA-RIV-3693	Historic	Prado Dam	J. Brock and J. Elliot (1989)	No	No
P-33-003832	CA-RIV-3832	Historic	Alberhill, Corona North, Corona South, Lake Elsinore, Lake Mathews	K. Swope and D. Peirce (1990) D.F. McCarthy (1990) B. Love and T. Tang (2001) K.R. Blevins and A.M. Hoover (2005) J.D. Goodman (2006) J. Goodman, N. Reseburg, and Windy Jones (2006) R.D. Hoffman (2011)	Sampson Pipeline	No
P-33-004112	CA-RIV-4112H	Historic	Corona South, Lake Mathews	K. Swope and K. Hallaran (1991) B. Love (1997) I. Strudwick, J. Bauman, and B. Jones (2005) J. Patterson (2007)	No	No
P-33-004118	CA-RIV-4118	Prehistoric	Lake Mathews	Dibble, Carr, and Jones (1988) A. Wesson (2002)	No	No
P-33-004119	CA-RIV-4119	Prehistoric	Lake Mathews	Dibble, Carr, and Jones (1988)	No	No
P-33-004120	CA-RIV-4120	Prehistoric	Lake Mathews	Dibble, Carr, and Jones (1988)	No	No

Primary Number	Trinomial	Period	Quadrangle	Recorder Date	Intersect Project Component	Within 100 ft of Project Component
P-33-004121	CA-RIV-4121	Prehistoric	Lake Mathews	Dibble, Carr, and Jones (1988)	No	No
P-33-004791	CA-RIV-4791	Historic	Corona North, Corona South, Riverside East, Riverside West, San Bernardino South	R. Wlodarski (1992) A. Gustafson and M. McGrath (2001) J.A. McKenna et al. (2005)	No	No
P-33-004808	CA-RIV-4808	Multicomponent	Myoma	R. Cecil and F. Dittmer (1992)	No	No
P-33-005310	CA-RIV-5310	Historic	Corona North	Unknown Recorder (n.d.)	No	No
P-33-005781	CA-RIV-5521H	Historic	Corona North	A.G. Toren (1995)	No	No
P-33-005782	CA-RIV-5522H	Historic	Prado Dam	A.G. Toren (1995) R. Goodwin (2012)	No	No
P-33-007423	-	Historic	Fontana	S. Saunders (1984)	No	No
P-33-007586	-	Historic	Corona North	J. Brock and B. Smith (1996)	No	No
P-33-007719	CA-RIV-6197H	Historic	Corona South	L. White (1999)	No	No
P-33-008406	CA-RIV-6133H	Historic	Corona South	B. Love (1998)	No	No
P-33-009653	CA-RIV-6453H	Historic	Corona South	Unknown Recorder (n.d.)	No	No
P-33-010819	CA-RIV-6532H	Historic	Black Star Canyon	M. Sterner (2000)	No	No
P-33-012556	-	Prehistoric	Corona South	Unknown Recorder (n.d.)	No	No
P-33-012622	-	Prehistoric	Corona North	Unknown Recorder (n.d.)	No	No
P-33-013056	CA-RIV-7574	Prehistoric	Toro Peak	Unknown Recorder (n.d.)	No	No
P-33-013148	-	Prehistoric	Corona South	K. Swope and D. Pierce (1990) J. Patterson (2007)	No	No
P-33-013275	-	Historic	Corona South	R. Goodwin (2004) R.S. Shepard (2007)	No	No
P-33-013276	-	Historic	Corona South	R. Goodwin (2004) R.S. Shepard (2007)	No	No
P-33-013277	-	Historic	Corona South	R. Goodwin (2004) R.S. Shepard (2007)	No	No
P-33-013409	-	Prehistoric	Corona North	C.E. Drover (1980)	No	No
P-33-013857	-	Prehistoric	Corona South	L.S. White (2004)	No	No
P-33-013858	-	Historic	Corona South	L.S. White (2004)	No	No
P-33-013859	-	Historic	Corona South	L.S. White (2004)	No	No
P-33- 014754	-	Historic	Corona North	Winn, R., and Winn, M. (2005)	No	Buena Vista Tenth Pipeline
P-33-017132	-	Historic	Corona South	C. Demcak (2008)	No	No
P-33-017133	-	Historic	Corona South	C. Demcak (2008)	No	No
P-33-017926	-	Historic	Corona North, Corona South	Dice, M.H. (2009)	No	Rimpau California Pipeline
P-33-019802	-	Historic	Prado Dam	A. Belcourt (2011)	No	No
P-33-020200	-	Historic	Corona South	Yates, T. (2011)	No	No

Primary Number	Trinomial	Period	Quadrangle	Recorder Date	Intersect Project Component	Within 100 ft of Project Component
P-33-020201	-	Historic	Corona South	Yates, T. (2011) Smallwood, J. (2012)	No	No
P-33-020202	-	Historic	Corona South	Yates, T. (2011)	No	Sampson Pipeline
P-33-020203	-	Historic	Corona South	Yates, T. (2011)	No	No
P-33-020204	-	Historic	Corona South	Yates, T. (2011)	No	No
P-33-020205	-	Historic	Corona South	Yates, T. (2011)	No	No
P-33-020206	-	Historic	Corona South	Yates, T. (2011)	No	No
P-33-020207	CA-RIV-20207	Historic	Corona South	Yates, T. (2011)	No	Sampson Pipeline
P-33-020208	-	Historic	Corona North	Yates, T. (2011)	No	No
P-33-020209	-	Historic	Corona North	Yates, T. (2011)	No	No
P-33-020210	-	Historic	Corona North	Yates, T. (2011)	No	No
P-33-020211	-	Historic	Corona North	Yates, T. (2011)	No	River Pipeline
P-33-020212	-	Historic	Corona North	Yates, T. (2011)	No	River Pipeline
P-33-020213	-	Historic	Corona North	Yates, T. (2011)	No	River Pipeline
P-33-020225	-	Historic	Corona North	Yates, T. (2011)	No	River Pipeline
P-33-020226	-	Historic	Corona North	Yates, T. (2011)	No	River Pipeline
P-33-020227	-	Historic	Corona North	Yates, T. (2011)	No	No
P-33-020229	-	Historic	Corona North	Yates, T. (2011)	No	No
P-33-020231	-	Historic	Corona North	Yates, T. (2011)	No	No
P-33-020232	-	Historic	Corona North	Yates, T. (2011)	No	No
P-33-020233	-	Historic	Corona North	Yates, T. (2011)	No	River Pipeline
P-33-020234	-	Historic	Corona North	Yates, T. (2011)	No	No
P-33-020235	-	Historic	Corona North	Yates, T. (2011)	No	River Pipeline
P-33-020236	-	Historic	Corona North	Yates, T. (2011)	No	No
P-33-020237	-	Historic	Corona North	Yates, T. (2011)	No	River Pipeline
P-33-023618	-	Historic	Corona South	C.D. Wills (2005)	No	No
P-33-024119	CA-RIV-11860	Historic	Corona South	Goodwin, R. (2014)	No	No
P-33-024188	-	Historic	Corona South	P. Moruzzi (2012)	No	Buena Vista Tenth Pipeline
P-33-024189	-	Historic	Corona South	P. Moruzzi (2012)	No	No
P-33-024190	-	Historic	Corona South	P. Moruzzi (2012)	No	No
P-33-024191	-	Historic	Corona South	P. Moruzzi (2012)	No	No
P-33-024192	-	Historic	Corona South	P. Moruzzi (2012)	No	No
P-33-024207	-	Historic	Corona North	Yates, T. (2012)	No	No
P-33-024551	CA-RIV-12171	Historic	Prado Dam	Goodwin, R. (2015)	No	No

Primary Number	Trinomial	Period	Quadrangle	Recorder Date	Intersect Project Component	Within 100 ft of Project Component
P-33-024552	-	Historic	Prado Dam	R.E. Reynolds (2000)	No	No
P-33-024553	CA-RIV-12173	Historic	Corona South	R.S. Shepard (2004)	No	No
P-33-024723	CA-RIV-12241	Historic	Corona South	W. Burns, N.F. Hearth, and B. Scherzer (2015)	No	No
P-33-024724	-	Prehistoric	Corona South	N.F. Hearth and W. Burns (2015)	No	No
P-33-024725	-	Prehistoric	Corona South	N.F. Hearth and W. Burns (2015)	No	No
P-33-024726	-	Prehistoric	Corona South	N.F. Hearth and W. Burns (2015)	No	No
P-33-024855	-	Historic	Corona South	L. Furnis (2015)	No	Ontario Slipline
P-33-024866	CA-RIV-12327	Historic	Corona North	H. Switalski and V. Harvey (2016)	No	No

The record search also indicated that 30 built environment resources, that have been assigned primary numbers, have been previously recorded within the RWMP Project area, (Table 3). Built environment resources primarily include residential or commercial buildings, but also includes a park, a quarry, and built environment resources associated with agriculture. Twelve of the built environment resources are within 100 ft of a Project Component. All thirty of the built environment resources were also included by the EIC as cultural resources, shown in Table 2, above.

Table 3. Built Environment Resources within the RWMP Project Area.

Primary Number	Trinomial	Address	Parcel Number	USGS Topographic Quadrangle	Recorder and Date	Intersect Project Component	Within 100 ft of Project Component
P-33-014754	-	-	-	Corona North	Winn, R., and Winn, M. (2005)	No	Buena Vista Tenth Pipeline
P-33-017926	-	Corona City Park	-	Corona North, Corona South	Dice, M.H. (2009)	No	Rimpau California Pipeline
P-33-020200	-	-	107-020-012	Corona South	Yates, T. (2011)	No	No
P-33-020201	-	14282 E. 6th Street	107-030-003	Corona South	Yates, T. (2011) Smallwood, J. (2012)	No	No
P-33-020202	-	-	107-030-022	Corona South	Yates, T. (2011)	No	Sampson Pipeline
P-33-020204	-	-	107-040-006	Corona South	Yates, T. (2011)	No	No
P-33-020203	-	-	107-040-005	Corona South	Yates, T. (2011)	No	No
P-33-020205	-	-	107-060-003	Corona South	Yates, T. (2011)	No	No
P-33-020206	-	-	107-060-008 107-060-009	Corona South	Yates, T. (2011)	No	No
P-33-020207	CA-RIV-20207	-	115-090-003	Corona South	Yates, T. (2011)	No	Sampson Pipeline
P-33-020208	-	-	117-031-001	Corona North	Yates, T. (2011)	No	No
P-33-020209	-	-	117-031-002	Corona North	Yates, T. (2011)	No	No
P-33-020210	-	-	117-031-036	Corona North	Yates, T. (2011)	No	No
P-33-020211	-	-	119-041-013	Corona North	Yates, T. (2011)	No	River Pipeline

Primary Number	Trinomial	Address	Parcel Number	USGS Topographic Quadrangle	Recorder and Date	Intersect Project Component	Within 100 ft of Project Component
P-33-020212	-	-	119-041-014	Corona North	Yates, T. (2011)	No	River Pipeline
P-33-020213	-	-	119-041-015	Corona North	Yates, T. (2011)	No	River Pipeline
P-33-020225	-	-	119-041-016	Corona North	Yates, T. (2011)	No	River Pipeline
P-33-020226	-	-	119-041-017	Corona North	Yates, T. (2011)	No	River Pipeline
P-33-020227	-	-	119-041-018	Corona North	Yates, T. (2011)	No	No
P-33-020229	-	-	119-041-020	Corona North	Yates, T. (2011)	No	No
P-33-020231	-	1108 Serene Drive	119-041-022	Corona North	Yates, T. (2011)	No	No
P-33-020232	-	1002 Peaceful Drive	119-041-024	Corona North	Yates, T. (2011)	No	No
P-33-020233	-	1090 Serene Drive	110-043-001	Corona North	Yates, T. (2011)	No	River Pipeline
P-33-020234	-	1082 Serene Drive	119-043-002	Corona North	Yates, T. (2011)	No	No
P-33-020235	-	1070 Serene Drive	119-043-003	Corona North	Yates, T. (2011)	No	River Pipeline
P-33-020236	-	1058 Serene Drive	119-043-004	Corona North	Yates, T. (2011)	No	No
P-33-020237	-	1050 Serene Drive	119-043-005	Corona North	Yates, T. (2011)	No	River Pipeline
P-33-024119	CA-RIV-11860	Sidebotham (Phillips) Quarry	-	Corona South	Goodwin, R. (2014)	No	No
P-33-024207	-	-	-	Corona North	Yates, T. (2012)	No	No
P-33-024551	CA-RIV-12171	-	-	Prado Dam	Goodwin, R. (2015)	No	No

The *City of Corona General Plan Update: Cultural Resources Technical Report* (SWCA 2018) identified That in the City of Corona and the SOI, 451 properties have been recorded at the EIC, and there are six historic properties defined as listed or eligible for listing on the NRHP.

Carnegie Library (1906): This neo-classical building was designed by Los Angeles architect Franklin Pierce Burnham with construction completed on July 2, 1906. The exterior was cream and red colored pressed brick, with stone and concrete trim. It was symmetrically designed with a central staircase flanked by sloping banisters, which held decorative iron lights. The entrance was topped by an overhanging triangular pediment with ornate plaster designs and supported by fluted Ionic columns on either side. This building served as the City's public library until July 3, 1971, when a much larger public library facility was constructed several blocks away. The building remained empty for the next six years. Despite efforts to have it restored, it fell into disrepair and was damaged by fires and vandalism; the building was demolished April 18, 1978.

Corona Heritage Park (1900): This 5-acre complex was the headquarters for the Corona Foothill Lemon Company, the largest citrus ranch in the area in the early 1900s. The various buildings within the complex were primarily constructed between 1913 and 1937, and are largely intact today. The Corona Heritage Foundation is restoring the complex as a historic park and museum facility.

Corona High School/Civic Center (1923): Originally constructed as Corona's second high school, it became the Civic Center in 1961. The classic Spanish Revival architecture and expansive front lawns make it a recognizable feature in Corona's downtown area.

Grand Boulevard Historic District (1886): This unique circular roadway was a prominent design element in the original layout for the townsite. Corona derives its longstanding moniker "The Circle City" from the boulevard. Internationally acclaimed road races were held on this street in 1913, 1914, and 1916, drawing more than 100,000 spectators, as well as racing legends. The boulevard displays wide parkways, large mature trees, and historic streetlights fronting grand homes and more modest bungalows along its route.

Women's Improvement Club Clubhouse (1913): Southern California architect Thomas Preston designed this one-story, multi-gabled, Craftsman-style bungalow clubhouse that was built in 1913. The club was formed in 1899 as a civic organization called the Town Improvement Association; it changed its name to the Women's Improvement Club of Corona in 1902. The building's architectural features include painted wood shingles on the exterior walls, a steep-gabled main roof with clipped gables over the side wings, an original oak front door with beveled glass, and wooden porch piers on a prominent brick base. It was added to the National Register on November 3, 1988, and is the only remaining structure within Corona city limits with that status.

Corona Theater Landmark Building (1929): The Spanish Revival-style Corona Theater, also known as the Landmark Building, was designed by Southern California architect Carl Boller and dedicated on August 29, 1929. Various celebrities including Al Jolson, Laurel and Hardy, and Irving Berlin attended its grand opening ceremonies. Its L-shaped design features a two-story elevation in front and three stories in the rear, with separate segments of varying heights topped by individual gable roofs and interspersed with hipped roof towers. The building was constructed of brick, with stucco on its front elevation. Some remodeling has been done to the exterior, but significant details remain. Over the years, the building has had various uses, including commercial office space, a Masonic Lodge meeting hall, and a large theater. The building is the only pre-Depression Era theater remaining in Corona, has been determined eligible for the National Register.

The six properties listed on the NRHP are also automatically eligible for listing to the CRHR. In addition, there are nine other properties that are eligible for the CRHR:

1. Jefferson Elementary School (1927)
2. Barber Home (1893) – Eastlake
3. 1101 S Ramona Ave (1915) – Vernacular Wood Frame with Classical revival Elements
4. Terpening House (1899) – Queen Anne
5. Corona First Methodist Church (1914) – Tudor Revival
6. 401 East 8th Street (1908) – Vernacular Wood Frame
7. Camp Haan Barracks (1942) – Vernacular Wood Frame
8. 517 E 8th Street (1896)
9. El Gordo Caballo Ranch (1939)

Within the City of Corona, there are no State Historic Landmarks. Within the SOI, outside the boundaries of the City of Corona, there are five State Historic Landmarks:

1. Butterfield Stage Station (No. 188): Site of Butterfield Stage Station where mail was delivered and horses changed. The first stage carrying overland mail left Tipton, Missouri on September 15, 1858 and, passing through Temescal, arrived in Los Angeles October 7, 1858.
2. Painted Rock (No. 190): In tribute to the earliest record of any people in this region, the Santa Fe Railway has preserved this rock with its ancient pictograph, and the Committee of the Corona Women's Improvement Club has placed a tablet.
3. Ruins of the Third Serrano Adobe (No. 224): Don Leandro Serrano set out orchards and vineyards and cultivated some of the fertile lands of the Temescal Valley. In the 1840s he built his third adobe, which the Serrano family occupied until 1898, on the well-traveled road between San Diego and Los Angeles.
4. Old Temescal Road (No. 638): This route was used by Luiseño and Gabrielino Indians, whose villages were nearby. Leandro Serrano established a home here in 1820. Jackson and Warner traveled the road in 1831, and Frémont in 1848. It was the southern emigrant road for gold seekers from 1849 to 1851, the Overland Mail route from 1858 to 1861, and a military road between Los Angeles and San Diego from 1861 to 1865.
5. Corona Founders Monument (No. 738): R.B. Taylor, George L. Joy, Samuel Merrill, A.S. Garretson, and Adolph Rimpau, after purchasing lands of La Sierra Rancho and El Temescal grant, founded the citrus colony and town of Corona on May 4, 1886.

The City of Corona contains two State Historical Points of Interest:

1. Bandini-Cota Adobe Site
2. Temescal Tin Mines California Register of Historical Resources

The City of Corona contains 10 historic districts and 47 historic landmarks (Table 4 below):

Table 4. City of Corona Historic Districts and Historic Landmarks

Historic District (HD)/ Historic Landmark (HL Number	Address	APN	Description	Date Approved by Corona City Council
HD-001	510 W Foothill Avenue	114-350-046	Heritage Park District	May 16, 2001
HD-002	2750 S Rimpau Av	120-121-028	Lemonia Grove District	May 16, 2001
HD-003	2837 S Kellogg Av	120-072-008	Kammeyer Ranch District	May 16, 2001
HD-004	1125 S Rimpau Av	111-290-024	Sunny Slope Cemetery District	May 16, 2001
HD-005	930 E Sixth St	117-310-001	City Park District	May 16, 2001
HD-006	Grand Blvd Circle	Not Available	Grand Blvd. Streetscape District	May 16, 2001
HD-007	Chase Dr (Garretson To Foothill)	Not Available	Chase Drive Palm Trees District	May 16, 2001
HD-008	Rimpau Av (Old Temescal Rd To Chase)	Not Available	Rimpau Ave. Palm Trees District	May 16, 2001
HD-009	Main St (Olive To Chase)	Not Available	South Main Street Palm Trees District	May 16, 2001
HD-010	Palisades Dr (1 Mile From Green River/Wardlow Wash Bridge)	Not Available	Palisades Drive Roadway District	June 3, 2015
HL-001	1101 S Main St	117-266-006	Woman's Improvement Club	May 16, 2001

Historic District (HD)/ Historic Landmark (HL Number	Address	APN	Description	Date Approved by Corona City Council
HL-002	815 W Sixth St	118-270-049	Historic City Hall	May 16, 2001
HL-003	900 S Victoria Av	117-236-001	Victoria Park/Old Lincoln Cemetery	May 16, 2001
HL-004	722/423 S Joy St/Eighth	117-206-009	Joy Street Market and Residence	Revoked On Nov 18, 2009
HL-005	1169 E Grand Blvd	Not Available	Not Available	May 16, 2001
HL-006	1156 E Grand Blvd	Not Available	Not Available	May 16, 2001
HL-007	1148 E Grand Blvd	Not Available	Not Available	May 16, 2001
HL-008	1136 E Grand Blvd	Not Available	Not Available	May 16, 2001
HL-009	1036 E Grand Blvd	Not Available	Not Available	May 16, 2001
HL-010	822 S Joy St	117-241-001	Not Available	September 17, 2001
HL-011	1314 S Victoria Av	109-041-014	Not Available	July 17, 2001
HL-012	1147 E Grand Blvd	Not Available	Not Available	September 18, 2002
HL-013	123 W Eleventh St	117-254-012	Vernacular Wood Frame	July 16, 2003
HL-014	1214 S Belle Av	110-192-018	Vernacular Wood Frame	July 16, 2003
HL-015	616 W Eleventh St	110-172-009	Provincial Revival	January 7, 2004
HL-016	1315 S Main St	109-041-002	Mediterranean/Spanish Revival	October 20, 2004
HL-017	818 S Howard St	117-233-022	Queen Anne	October 20, 2004
HL-018	1128 E Grand Blvd	117-263-016	Vernacular Wood Frame	October 19, 2005
HL-019	1052 E Grand Blvd	117-264-005	Victorian (mixed style)	May 3, 2006, Dec. 19, 2007
HL-020	809 E Grand Blvd	111-022-011	Not Available	May 3, 2006
HL-021	1052 E Grand Blvd	Not Available	Not Available	July 5, 2006
HL-022	1170 E Grand Blvd	117-265-010	Mediterranean/Spanish Revival	August 16, 2006
HL-023	1301 S Main St	109-041-004	Vernacular Wood Frame w/Craftsman Bungalow Elements	October 4, 2006
HL-024	1124 Palm Av	109-033-005	Vernacular Wood Frame	October 18, 2006
HL-025	920 S Victoria Av	117-237-002	Bungalow	October 18, 2006
HL-026	1107 W Grand Blvd	117-252-022	Vernacular Wood Frame	May 16, 2007
HL-027	1120 Palm Av	109-033-004	Vernacular Wood Frame	June 20, 2007
HL-028	824 S Sheridan St	117-221-001	Vernacular Wood Frame	June 20, 2007
HL-029	623 S Merrill St	117-173-016	Victorian (mixed style)/Queen Anne	July 18, 2007
HL-030	1047 E Grand Blvd	109-031-002	Not Available	September 5, 2007
HL-031	1101/1103 S Victoria Av	117-263-014	Transitional Bungalow	October 17, 2007
HL-032	1133 E Grand Blvd	109-022-002	Not Available	August 6, 2007

Historic District (HD)/ Historic Landmark (HL Number	Address	APN	Description	Date Approved by Corona City Council
HL-033	914 S Victoria Av	117-237-012	Vernacular Wood Frame w/Bungalow Elements	October 17, 2007
HL-034	1164 E Grand Blvd	117-265-009	Not Available	July 16, 2008
HL-035	1208 Palm Av	109-033-007	Bungalow	September 17, 2008
HL-036	122 E Olive St	109-041-006	Bungalow	September 17, 2008
HL-037	1222 S Victoria Av	109-021-011	Vernacular Wood Frame	September 17, 2008
HL-038	934 E Grand Blvd	117-243-009	Not Available	September 17, 2008
HL-039	802 W Grand Blvd	110-112-007	Not Available	October 21, 2009
HL-040	805/809 S Ramona Av	117-232-007	Gothic Revival	August 5, 2009
HL-041	1127 E Grand Blvd	109-022-003	Not Available	September 1, 2010
HL-041	1127 E Grand Blvd	109-022-003	Not Available	September 1, 2010
HL-042	353 E Olive St	109-033-012	Not Available	July 17, 2013
HL-043	1031 E Grand Blvd	109-031-004	Not Available	September 17, 2014
HL-044	1518 S Main St	109-072-008	Not Available	September 16, 2015
HL-045	119 E Kendall St	109-041-021	Vernacular Wood Frame	September 17, 2016
HL-046	502 W Eleventh St	110-172-020	Mission Revival	October 18, 2017

The City of Corona also contains 10 historic markers (Table 5 below):

Table 5. City of Corona Historic Markers

Historic Marker Number	Description	Location	Date Built	Date Dedicated
HM-00	Corona Road Races	W. Grand Blvd and Main Street	1913	1986
HM-01	Corona High School and Civic Center	W. Sixth Street and Buena Vista Avenue	1023	Date Not Available
HM-02	First Congregational Church	Ramona and Eighth Street	1887, 1911	Date Not Available
HM-03	First Corona Police Office Killed in Line of Duty Memorial	Sixth Street and Howard	1913	Date Not Available
HM-04	Jefferson Elementary	Tenth St and Vicentia Street	1927	Date Not Available
HM-05	Site of Corona's First Fire Station	S. Main and Eighth Street	1898	1998
HM-06	Site of Lincoln Elementary School	Howard and Ninth Street	1889, 1914	1998
HM-07	Original Site of Victoria Hotel	E. Sixth Street and Victoria Avenue	1904	1999
HM-08	Site of First Corona Hospital	Eighth St and Belle Street	1933	1999
HM-09	Corona's First High School and Middle School	Main Street and Grand Blvd	1937	2000

4.1.2 NAHC Record Search Results

A record search of the SLF held by the NAHC was requested on March 30, 2020. On April 2, 2020 the NAHC responded that the record search of the SLF was positive. The NAHC provided a list of 37 Native American tribal organizations and individuals that might have additional knowledge of cultural resources in the Project area. On April 6, 2020 Red Tail Environmental sent letters to the 37 Native American tribal organizations and individuals requesting any information they may have on cultural resources in the RWMP Project area. The 37 contacts provided by the NAHC are from the following Native American groups:

- Agua Caliente Band of Cahuilla Indians
- Augustine Band of Cahuilla Mission Indians
- Cabazon Band of Mission Indians
- Cahuilla Band of Indians
- Campo Band of Diegueno Mission Indians
- Ewiiaapaayp Band of Kumeyaay Indians
- Gabrielino Band of Mission Indians - Kizh Nation
- Gabrielino/Tongva San Gabriel Band of Mission Indians
- Gabrielino /Tongva Nation
- Gabrielino Tongva Indians of California Tribal Council
- Gabrielino-Tongva Tribe
- Jamul Indian Village
- Juaneno Band of Mission Indians Acjachemen Nation – Belardes
- La Jolla Band of Luiseno Indians
- La Posta Band of Diegueno Mission Indians
- Los Coyotes Band of Cahuilla and Cupeño Indians
- Manzanita Band of Kumeyaay Nation
- Mesa Grande Band of Diegueno Mission Indians
- Morongo Band of Mission Indians
- Pala Band of Mission Indians
- Pauma Band of Luiseno Indians
- Pechanga Band of Luiseno Indians
- Quechan Tribe of the Fort Yuma Reservation
- Ramona Band of Cahuilla
- Rincon Band of Luiseno Indians
- San Fernando Band of Mission Indians
- San Luis Rey Band of Mission Indians
- San Pasqual Band of Diegueno Mission Indians
- Santa Rosa Band of Cahuilla Indians
- Soboba Band of Luiseno Indians
- Sycuan Band of the Kumeyaay Nation
- Torres-Martinez Desert Cahuilla Indians
- Viejas Band of Kumeyaay Indians

To date, three responses have been received. Jill McCormick, Historic Preservation Officer for the Fort Yuma Quechan Tribe, responded on April 14, 2020 that the tribe has no comments on the project. Cheryl Madrigal, Tribal Historic Preservation Officer and Cultural Resources Manager for the Rincon Band of Luiseño Indians responded that the project is within the Territory of the Luiseño people and within the Band's specific Area of Historic Interest. They have identified Luiseño place names within the project area but no known Tribal Cultural Resources or Traditional Cultural Properties and they recommend at

archaeological/cultural resources study to be conducted and a final copy of the study to be provided to the Rincon Band for their review and comment, as well the inclusion of appropriate provisions for inadvertent discoveries. On June 9, 2020 Patricia Garcia Plotkin, Director of Historic Preservation, Agua Caliente Band of Cahuilla Indians, responded that the project is not located within the Tribe's Traditional Use Area, they defer to other tribes in the area, and this concludes their consultation efforts.

All correspondence pertaining to the NAHC is included in Appendix B.

4.2 ARCHIVAL RESEARCH RESULTS

USGS topographic maps from 1901, 1902, and 1904 show the Santa Ana River, Temescal Wash, the railroad, early streets within Corona, and the several land grants that bisect the project area. Additional USGS topographic maps are not available until the 1940s. The 1942 map shows development at the historic center of Corona and agricultural use in the remainder of the valley (USGS 2020).

Aerial photographs of the project area begin in 1938, however this aerial photograph includes only the far north wester corner of the project area. It shows the meandering alignment of the Santa Ana River, prior to the construction of the Prado Dam, along with agricultural use of the northwest corner of the project area. The 1946 aerial photograph shows a slightly larger portion of the north west corner of the project area and shows that the Prado dam has been constructed along with several transportation routes in the vicinity of the dam. The 1948 and subsequent aerial photographs show the entirety of the project area. The 1948 aerial photograph shows the residential and commercial development surrounding Grand Boulevard and that much of the project area is in use for agriculture, with residential or agricultural infrastructure and streets common across the project area. Aerial photographs from 1966, 1967 and 1980 show considerable additional development on the norther side of the project area spreading out from Grand Boulevard with the remainder of the project area in use for agriculture. The next aerial photograph which includes the entire project area is from 2005 and shows that most of the project area has been developed and little agricultural or undeveloped land remains (Historicaerial.com 2020).

The *City of Corona General Plan Update: Cultural Resources Technical Report* (SWCA 2018) received parcel information with building dates for Corona and the SOI. Historic development within the RWMP project area began in the late 1800s within the vicinity of Grand Boulevard. Development within the RWMP project area was focused around the Grand Boulevard circle through the 1920s. By the 1930s additional development spread farther out from Grand Boulevard and within El Cerrito. Through the 1940s development continued to be focused along Grande Boulevard, south of 6th Street, and in El Cerrito and south of El Cerrito Road. The 1950s show a large increase of development in Coronita, in Corona south of 6th Street, and in the vicinity of El Cerrito. The 1960s shows the first large scale residential development of track homes within the RWMP project area and this style development continued through the 1970s. The 1980s through the 2010s show a huge increase in development especially in the southern half of Corona and along the northern boundary of the City (SWCA 2018). As of 2018 there were at least 5,390 parcels that contain properties that were constructed prior to 1968 and therefore are at least 50 years old. There are an additional 3,217 parcels that contain buildings constructed between 1969 and 1978 (SWCA 2018).

4.3 TRIBAL CULTURAL RESOURCES RESULTS

A Scared Lands File search conducted by the Native American Heritage Commission (NAHC) for the project site. The NAHC identified 37 local Native American representatives from the following Native American groups as potentially having local knowledge of Tribal Cultural Resources:

- Agua Caliente Band of Cahuilla Indians
- Augustine Band of Cahuilla Mission Indians

- Cabazon Band of Mission Indians
- Cahuilla Band of Indians
- Campo Band of Diegueno Mission Indians
- Ewiiaapaayp Band of Kumeyaay Indians
- Gabrieleno Band of Mission Indians - Kizh Nation
- Gabrieleno/Tongva San Gabriel Band of Mission Indians
- Gabrielino /Tongva Nation
- Gabrielino Tongva Indians of California Tribal Council
- Gabrielino-Tongva Tribe
- Jamul Indian Village
- Juaneno Band of Mission Indians Acjachemen Nation – Belardes
- La Jolla Band of Luiseno Indians
- La Posta Band of Diegueno Mission Indians
- Los Coyotes Band of Cahuilla and Cupeño Indians
- Manzanita Band of Kumeyaay Nation
- Mesa Grande Band of Diegueno Mission Indians
- Morongo Band of Mission Indians
- Pala Band of Mission Indians
- Pauma Band of Luiseno Indians
- Pechanga Band of Luiseno Indians
- Quechan Tribe of the Fort Yuma Reservation
- Ramona Band of Cahuilla
- Rincon Band of Luiseno Indians
- San Fernando Band of Mission Indians
- San Luis Rey Band of Mission Indians
- San Pasqual Band of Diegueno Mission Indians
- Santa Rosa Band of Cahuilla Indians
- Soboba Band of Luiseno Indians
- Sycuan Band of the Kumeyaay Nation
- Torres-Martinez Desert Cahuilla Indians
- Viejas Band of Kumeyaay Indians

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5. CULTURAL RESOURCE SENSITIVITY ANALYSIS

The RWMP project area has been categorized into three cultural resource sensitivity levels rated low, moderate, or high based on the results of the archival research, the NAHC Sacred Lands File record search, regional environmental factors, and historic and modern development (Figure 11 and Confidential Appendix C). A low sensitivity rating indicates areas where there is a high level of disturbance or development and the area has been subject to previous cultural resource surveys, such as areas developed after the late-1970s, since the introduction of environmental laws requiring archaeological studies or in areas where specific geographic features that have a low potential for cultural resources, such rugged areas with a slope over 20%. Within these areas, the potential for additional cultural resources to be identified is low. A moderate sensitivity rating indicates that some previously recorded resources have been identified, and/or the area has a moderate potential for cultural resources, or if the area has not been previously surveyed for cultural resources, the geographic features of the area cause the potential for cultural resources to be moderate. A high sensitivity rating indicates areas where significant resources have been documented, and/or have the potential to be identified, such as alluvial areas and areas near historic or prehistoric water sources. The resources in high sensitivity areas are generally complex in nature with unique and/or abundant artifact assemblages. In some cases, the previously identified resources in high sensitivity areas may have been determined to be significant under local, State or Federal guidelines.

City of Corona General Plan Update: Cultural Resources Technical Report, identified that much of the City and the SOI has not been systematically surveyed to identify cultural resources and that some cultural resources may have been paved over during development (SWCA 2018). In addition, the 2001 *Draft Program Environmental Impact Report for the City of Corona Recycled Water Master Plan Project SCH# 99031097* identified that much of the RWMP project area has a moderate to high sensitivity for cultural resources (Parsons Engineering Science, Inc. 2001). The 2001 DEIR identified that portions of the project area located on the Black Star Canyon, California 7.5' USGS topographic quad maps have a low potential for archaeological resources, however the remainder of the project area has a moderate to high level of sensitivity.

While much of the RWMP Project area has been developed, archaeological research identified Native American use of the RWMP Project area for thousands of years, and it is possible that intact subsurface cultural deposits are present in areas that have been previously developed or alluvial areas, as well as in areas that have had little ground disturbance. Developments constructed through the 1970s may not have been subject to cultural resource assessments as part of compliance with environmental laws and the cultural resource sensitivity of these areas may still be moderate to high depending on the amount of ground disturbance and mass grading previously conducted. The potential to encounter prehistoric cultural resources across the RWMP Project area is moderate to high, expected resource types include: lithic scatters, bedrock milling features, habitation areas, and resource procurement areas.

In addition to prehistoric resources, historic archaeological resources or built environment resources may also be present. Based on the historic and archival research conducted historic archaeological resources may include archaeological deposits and features associated with agriculture, especially ranching and citrus cultivation, as well as early development, such as trash scatters, wells and privy pits, and built environment resources. Historic development within the RWMP project area began in the late 1800s within the vicinity of Grand Boulevard and expanded, mostly southward into the project area through the 1920s. By the 1930s additional development spread farther out from Grande Boulevard and within El Cerrito. Through the 1940s development continued to be focused along Grande Boulevard, south of 6th Street, and in El Cerrito and south of El Cerrito Road. The 1950s show a large increase of development in Coronita, in Corona south of 6th Street, and in the vicinity of El Cerrito. The 1960s shows the first large scale residential development of track homes within the RWMP Project area and this style development continued through the 2000s. In

addition, portions of the RWMP Project area that were in use prior to the mid-20th century may contain built environment resources that exceed the age threshold for eligibility to the CRHR and Corona Register. In addition, properties constructed prior to the 1920s may contain historic archaeological features associated with privy pits, wells, and trash scatters. While these areas were subject to early development, they may not have been impacted by mass grading and buildings, roads, and hardscapes may have preserved intact subsurface archaeological deposits and features which could be eligible to the CRHR and/or Corona Register and impacted by the implementation of the Project.

Areas shown on Figure 11 as having a high sensitivity for cultural resources are in proximity to known water sources, contain previously recorded cultural resources, or contain areas that were developed prior to the mid-20th century and may contain historic resources. Early development and agricultural uses may have impacted the location of original water sources and drainages. Prehistoric resources are commonly found in proximity to water resources. Due to the presence of the Santa Ana River Basin within the Project and the unknown location of possible obscured or destroyed water sources, the majority of the project area is rated moderate to high for prehistoric archaeological resources. The areas identified as moderate and high sensitivity and unknown represents a prehistorically and historically active environment.

Areas identified as moderate sensitivity were developed later, and may have been subject to greater disturbances, contained a lower concentration of previously recorded cultural resources, or contain geographic features or distances from water sources which make them less ideal for prehistoric or early historic uses.

The area identified on the western edge of the RWMP Project area as low sensitivity contains steep slopes of greater than 20% which prohibited prehistoric and early historic uses. The area identified on the eastern edge of the RWMP Project area as low sensitivity contains extensive disturbances from mining and other land uses likely destroying any cultural resources which may have been present.

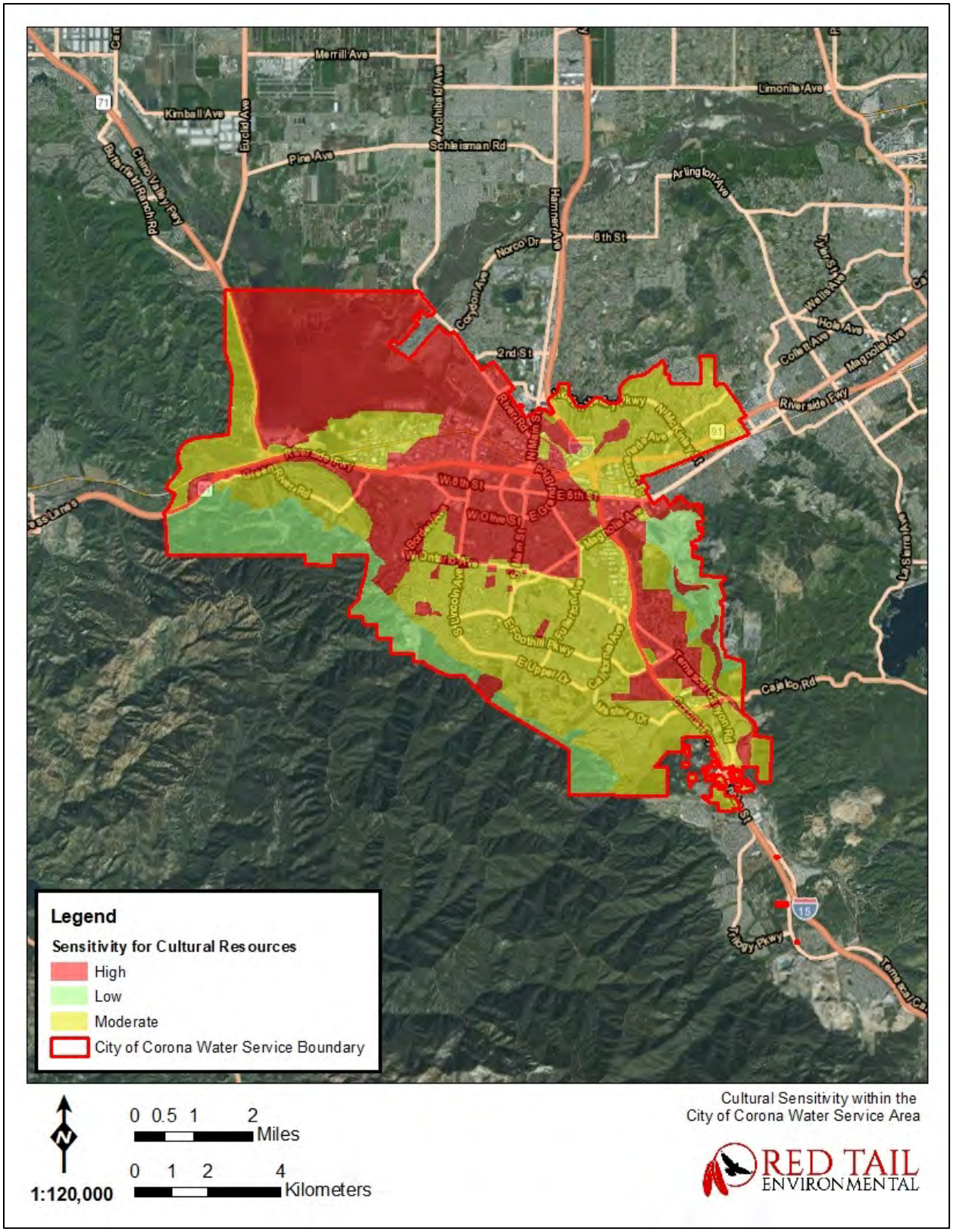


Figure 11. Cultural Resource Sensitivity within the RWMP Project Area.

6. RESOURCE IMPACT ANALYSIS

This impact analysis presents a program level analysis the evaluates the potential impacts of implementing the RWMP on existing pre-historic and historic environmental conditions. Based on the existing conductions described above this impact analysis programmatically assesses the direct and indirect impacts on cultural resources.

6.1 SIGNIFICANCE CRITERIA

Under CEQA, archaeological and/or built environment resources may meet the definition of a historical resource or unique archaeological resource. Any project that may cause a substantial adverse change in the significance of a historical resource would also have a significant effect on the environment. Substantial adverse change to the significance of a historical resource is defined as physical demolition, destruction, alteration, or relocation of the resource or immediate surroundings such that its significance would be materially impaired. CEQA states that when a project would cause damage to a unique archaeological resource, reasonable efforts must be made to preserve the resource in place or leave it in an undisturbed state.

6.2 BUILT ENVIRONMENT RESOURCES IMPACT ANALYSIS

The record search conducted for the *City of Corona General Plan Update: Cultural Resources Technical Report* identified 30 built environment resources, which were assigned a primary number by the EIC. Twelve of the built environment resources are within 100 ft of a Project Component (Table 6, below). In addition, six historic properties defined as listed or eligible for listing on the NRHP and nine other properties were eligible to the CRHR within the City of Corona. There were five State Historic Landmarks within the SOI and two State Historical Points of Interest within the City of Corona. The Corona Register included 10 Historic Districts, 47 Historic Landmarks, and 10 Historic Markers. Furthermore, as of 2018, the *City of Corona General Plan Update: Cultural Resources Technical Report* identified at least 5,390 parcels that contain properties that were constructed prior to 1968 and therefore are at least 50 years old. There are an additional 3,217 parcels that contain buildings constructed between 1969 and 1978, which may meet the 50-year age threshold for eligibility during implementation of the RWMP (SWCA 2018).

Construction of the Project Components of the RWMP would largely occur within existing roadway rights of way and developed areas. The demolition or direct physical alteration of potential historic structures, historic districts, or other built environment resources would be unlikely based on the description of the Project Components. For these reasons, direct impacts to historic properties would be less than significant. Once constructed all future maintenance and operational activities would be restricted to the City's existing rights of way or existing site locations and, therefore, no encroachment into adjacent properties would occur. Based on these considerations no impacts would result from future maintenance and operational activities.

Construction of the Project Components of the RWMP could result in temporary vibration-related effects in the immediate vicinity of the construction from the use of heavy equipment and machinery, as construction activities can produce varying degrees of ground vibration depending on the equipment and methods employed and localized soil conditions. Construction techniques that commonly result in excessive vibration, such blasting and pile driving, are not anticipated for RWMP implementation. Based on criteria presented in the Federal Transit Administration's (FTA) Noise and Vibration Manual (2006), "fragile buildings" are subject to damage when vibration exceeds 0.20 PPV. For the RWMP Project construction-related vibration levels would be below the 0.20 PPV threshold for typical building damage

and the 94 VdB threshold for annoyance at a distance of approximately 40 feet. Historic structures are often considered in this category due to their age of construction and the building codes enacted at the time of construction. As a result, construction activities within 40 feet of fragile structures could result in damaging vibration levels for historic structures, where present and eligible for the NRHP, CRHR, and/or Corona Register. However, in the absence of precise information on the location and types of construction, if work is proposed within 40 feet or less of one or more contributing elements to a historic property or district, then vibration-related impacts could potentially be significant. Therefore, Mitigation Measure CULT-1 is recommended to minimize construction-related vibration impacts to historic structures.

6.3 ARCHAEOLOGICAL RESOURCES IMPACT ANALYSIS

Based on the cultural resource sensitivity analysis much of the RWMP Project area has been identified as having a moderate to high sensitivity for cultural resources. The record search conducted for the *City of Corona General Plan Update: Cultural Resources Technical Report* identified 96 previously recorded cultural resources are located within the RWMP Project area, 30 of which are included as built environment resources, discussed above (SWCA 2018). Thirteen of the resources are within 100 feet of a Project Component and an additional three of the resources are intersected by a Project Component (Table 6, below and Confidential Appendix C).

Development in accordance with the proposed project could adversely impact known or previously unrecorded cultural resources that may be eligible to the CRHR or Corona Register. Potential impacts to cultural/archaeological resources could result from clearing, trenching, and grading activities associated with the construction of pipelines, underground structures, or other related facilities, or any rehabilitations of existing pipes, which may result in disturbing native soil outside of previously excavated trenches. Impacts to resources that are determined to be important under criteria provided in CEQA (Section 15064.5) would be considered significant. The precise extent and nature of impacts that could result by the construction of the RWMP Project Components would be determine at the time more engineering detail is developed for each Project Component. Therefore, all potential impacts are assumed to be significant at the program level of analysis. Mitigation Measures CUL-2 and CULT-3 are recommended to minimize the potential for disturbance of archaeological resources.

In addition, there is a potential to identify unexpected human remains during the construction of the Project Components, as the RWMP Project area contained numerous prehistoric and historic settlements. These direct impacts could be significant. Mitigation Measure CULT-4 is recommended to reduce these potential impacts to the unexpected discovery of human remains.

Once constructed the Project Components would not have the potential for additional impacts to archaeological or historic resources. Typical operations and maintenance of the Project Components would not result in additional physical impacts and are recommended as a less than significant impact. No indirect effects to archaeological resources were identified.

Table 6. Impact Analysis and Recommended Mitigation Measure for RWMP Project Components

Project Component Number	Project Component	Known Resources Intersected	Known Resources within 100 ft.	Cultural Resource Sensitivity of the Project Component	Recommended Mitigation Measure
1*	WRCRWA Booster Pump Station*	n/a	n/a	n/a	n/a
2	WRCRWA Transmission Pipeline	None	None	High	CULT-1, CULT-2, CULT-3, CULT-4
3	WRCRWA Flow Control Improvements	None	None	High	CULT-1, CULT-2, CULT-3, CULT-4

4	Rimpau California Pipeline	None	P-33-017926	Moderate, High	CULT-1, CULT-2, CULT-3, CULT-4
5	Chase Booster Pump Station	None	None	Moderate	CULT-1, CULT-2, CULT-3, CULT-4
6	Chase Tank	None	None	Moderate	CULT-1, CULT-2, CULT-3, CULT-4
7	Buena Vista Tenth Pipeline	None	P-33-014754 P-33-024188	High	CULT-1, CULT-2, CULT-3, CULT-4
8	Ontario Slipline	None	P-33-024855	Moderate, High	CULT-1, CULT-2, CULT-3, CULT-4
9	River Pipeline	None	P-33-020211 P-33-020212 P-33-020213 P-33-020225 P-33-020226 P-33-020233 P-33-020235 P-33-020237	Moderate, High	CULT-1, CULT-2, CULT-3, CULT-4
10	Sampson Pipeline	P-33-001438 P-33-003832	P-33-020207 P-33-020202	Moderate, High	CULT-1, CULT-2, CULT-3, CULT-4
11	Old Temescal Pipeline	None	None	Moderate, High	CULT-1, CULT-2, CULT-3, CULT-4
12	Lincoln Foothill Pipeline	None	None	Moderate	CULT-1, CULT-2, CULT-3, CULT-4
13	Avenida Del Vista Pipeline	None	None	High	CULT-1, CULT-2, CULT-3, CULT-4
14	Border Pipeline	None	None	Moderate, High	CULT-1, CULT-2, CULT-3, CULT-4
15	Promenade Pipeline	None	None	Moderate	CULT-1, CULT-2, CULT-3, CULT-4
16	Research Promenade Pipeline	None	None	Moderate, High	CULT-1, CULT-2, CULT-3, CULT-4
17	Smith Pipeline	None	None	Moderate, High	CULT-1, CULT-2, CULT-3, CULT-4
18	Via Pacifica Pipeline	None	None	Moderate	CULT-1, CULT-2, CULT-3, CULT-4
19	Tehachapi Pipeline	None	None	Moderate	CULT-1, CULT-2, CULT-3, CULT-4
20	Jenks Pipeline	None	None	Moderate	CULT-1, CULT-2, CULT-3, CULT-4
21	Airport Circle Pipeline	None	None	Moderate	CULT-1, CULT-2, CULT-3, CULT-4
22	Helicopter Pipeline	None	None	Moderate	CULT-1, CULT-2, CULT-3, CULT-4
23	Glider Pipeline	None	None	Moderate	CULT-1, CULT-2, CULT-3, CULT-4
24	Citation Pipeline	None	None	Moderate	CULT-1, CULT-2, CULT-3, CULT-4
25	Klug Pipeline	None	None	Moderate	CULT-1, CULT-2, CULT-3, CULT-4
26	Monica Pipeline	None	None	Moderate	CULT-1, CULT-2, CULT-3, CULT-4
27	Chase Hudson Pipeline	None	None	Moderate	CULT-1, CULT-2, CULT-3, CULT-4
28	Cessna Pipeline	None	None	Moderate	CULT-1, CULT-2, CULT-3, CULT-4
29	Main Citrus Pipeline	None	None	Moderate, High	CULT-1, CULT-2, CULT-3, CULT-4

* WRCRWA Booster Pump Station, is located outside of the RWMP Project area, and was analyzed separately.

6.4 TRIBAL CULTURAL RESOURCES IMPACT ANALYSIS

The record search of the SLF held by the NAHC was positive. The NAHC identified 37 Native American organizations which may wish to consult with the City regarding Tribal Cultural Resources. Consultation with tribal organizations is ongoing.

The construction of Project Components as part of the RWMP would involve ground disturbing construction activities that would occur within 100 ft of potentially significant known or unknown archaeological resources. These direct impacts could be significant to Tribal Cultural Resources. Mitigation Measures CULT-2, CULT-3, and CULT-4 are recommended to mitigate impacts to Tribal Cultural Resources.

Once constructed the Project Components would not have the potential for additional impacts to Tribal Cultural Resources. Typical operations and maintenance of the Project Components would not result in additional physical impacts and are recommended as a less than significant impact.

During construction activities, indirect adverse effects may result from increased accessibility to archaeological or Tribal Cultural Resources (such as artifacts) that could lead to resource looting or

vandalism activities. This is considered a significant impact. Mitigation Measures CULT-2, CULT-3 and CULT-4 are recommended to mitigate this potential indirect impact.

7. RECOMMENDATIONS

7.1 RESOURCE MANAGEMENT

Within the RWMP Project area 96 cultural resources have been previously recorded, and 13 of the resources are within 100 feet of a Project Component and an additional three of the resources are intersected by a Project Component. The *City of Corona General Plan Update: Cultural Resources Technical Report* identified that much of the RWMP has not been systematically surveyed for cultural resources (SWCA 2018). Due to continued use and development of the project area, it is assumed that many of the cultural resources within the RWMP Project area have been disturbed. However, it is possible that intact cultural resources are present in areas of the RWMP Project area that have not been previously developed, are buried in alluvial deposits, or have been preserved under hardscapes and pavement. This study reveals that cultural sensitivity varies across the RWMP Project area and the majority of the project area has been identified as moderate to high sensitivity for cultural resources. Therefore, there is a potential that cultural resources will be impacted during the implementation RWMP, especially within areas that have been categorized as moderate or high sensitivity for cultural resources.

Mitigation Measures CULT-1, -2, -3, and -4, outlined below, are recommended to avoid adverse effects to historical resources during implementation of the RWMP.

7.2 MITIGATION MEASURES

Implementation of the following recommended mitigation measures would reduce potentially significant impacts. This report was completed in compliance with state and local regulations. Separate mitigation measures are not required. Rather, each mitigation measure has been designed to fulfill the requirements of CEQA and the Corona Historic Resources Ordinance. The City is the lead agency implementing cultural resource mitigation measures.

7.2.1 Mitigation Measure CULT-1: Construction Related Vibration

Construction plans for individual projects under the 2018 RWMP shall include a requirement that no vibratory equipment be operated within 40 feet of a structure eligible or listed on the NRHP, CRHR, and/or Corona Register. Instead, alternative construction equipment shall be used, such as smooth wheel rollers without a vibratory component.

For structures that have not been previously evaluated, the City Engineer shall consult with a qualified Architectural Historian, approved by the City, to conduct an evaluation of the structure. If the structure is determined eligible or already eligible or listed in the NRHP, CRHR, or Corona Register, structural evaluation shall be conducted by a Professional Structural Engineer to identify maximum allowable levels of vibration during construction. If a historic determination is required, the engineer shall provide recommendations on approaches to stabilization in conjunction with vibration monitoring. Permanent stabilization measures shall follow the Secretary of the Interior's guidelines for the treatment of historic properties. If the buildings are temporarily stabilized for the duration of construction activities, when removed, the buildings shall be restored to their pre-construction condition when the stabilization measures are removed.

7.2.2 Mitigation Measure CULT-2: Project Specific Archaeological Survey

Each Project Component should be reviewed by the City to determine if a site-specific archaeological survey should be conducted. Site specific archaeological surveys should be conducted for Project Components which are located in areas that have not been previously developed, that will impact land with visible ground surface, and/or projects which may impact built environment resources that meet the age threshold for eligibility.

If cultural resources are identified during the site-specific archaeological survey then evaluation of the resources to the CRHR and the Corona Register should be conducted to determine if the resource is significant under CEQA, and would be adversely impacted by the project. A Native American monitor from a culturally affiliated Tribe should be present during any archaeological excavations involving prehistoric cultural resources. If no significant resources are found, and site conditions are such that there is no potential for further discoveries, then no further action is required. Resources found to be non-significant as a result of a survey and/or evaluation will require no further work beyond documentation of the resources on the appropriate Department of Parks and Recreation (DPR) site forms and inclusion of results in a technical report.

If significant resources are present, then avoidance, preservation in place, or a data recovery program is recommended. The data recovery program is subject to the provisions as outlined in CEQA, Section 21083.2. The data recovery program should be conducted in accordance with the Office of Historic Preservation's *Archaeological Resource Management Reports (ARMR): Recommended Contents and Format* (1990) and *Guidelines for Archaeological Research Designs* (1991). The data recovery program must be reviewed and approved by the City

If no significant resources are found, but if there is a potential for unknown archaeological resources, or Tribal Cultural Resources to be uncovered during construction activities then Mitigation Measure CULT-3, an archaeological and Native American monitoring program, is recommended.

7.2.3 Mitigation Measure CULT-3: Archaeological and Native American Monitoring Program

As there is always a potential for encountering cultural resources during excavation, therefore the creation of an archaeological and Native American monitoring program is recommended for Project Components which will conduct new ground disturbance in areas identified as moderate or high sensitivity for cultural resources and for Project Components that are located within 100 ft of previously recorded archaeological resources. The archaeological and Native American monitoring program shall consist of the full-time presence of a qualified archaeologist and traditionally and culturally affiliated Native American monitor during new ground disturbing activities. New ground disturbance can include new trenching, or expanding previously excavated trenches, grading, and vegetation removal. The archaeological and Native American monitoring program should include the following:

1. The requirement for the archaeological and Native American monitoring to be noted on applicable construction documents, including plans;
2. The archaeologist and Native American monitor should attend the preconstruction meeting with the contractor and/or the City;
3. The archaeologist shall maintain ongoing collaborative consultation with the Native American Monitor during all ground disturbing or altering activities, as identified above;
4. The archaeologist and/or Native American Monitor may halt ground disturbing activities if archaeological artifact deposits or cultural features are discovered. In general, ground-disturbing activities shall be directed away from these deposits for a short time to allow a determination of

potential significance, the subject of which shall be determined by the archaeologist and the Native American Monitor. Ground disturbing activities shall not resume until the archaeologist, in consultation with the Native American Monitor and the City, deems the cultural resource or feature has been appropriately documented and/or protected;

5. Archaeological isolates and non-significant materials will be minimally documented in the field and ground disturbance will be allowed to resume;
6. The avoidance and protection of discovered unknown and significant cultural resources and/or unique archaeological resources is the preferable mitigation for the proposed project. If avoidance is not feasible, a Data Recovery Plan may be authorized by the City as the Lead Agency under CEQA; and
7. Prior to the release of any Bonds associated with the construction of the Project Components a Monitoring Report and/or Evaluation Report, which describes the results, analysis and conclusions of the archaeological and Native American monitoring program (such as, but not limited to, a Data Recovery Program) shall be submitted by the archaeologist, along with the Native American monitor's notes and comments, to the City for approval.

7.2.4 Mitigation Measure CULT-4: Identification and Treatment of Human Remains

In the event that human remains or possible human remains are encountered during any work associated with the RWMP all ground disturbance within 25 ft of the remains shall halt and CEQA Guidelines Section 15064.5, subdivision (e), California Public Resource Code Section 5097.98, and California Health and Safety Code §7050.5 should be followed. If Native American remains are discovered, the remains shall be kept *in situ* (in place), or in a secure location, as approved by the Native American monitor until the repatriation process can be completed.

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APPENDICES

APPENDIX A: RESUMES

RED TAIL ENVIRONMENTAL

Shelby Castells, M.A., RPA
Director of Archaeology

Professional Profile

Ms. Castells is the Director of Archaeology for Red Tail Environmental and acts as the Project Manager and Principal Investigator for all cultural resource studies. She has over fourteen years of experience in archaeology and cultural resource management in Southern California. She has been the Principal Investigator and Project Manager for numerous survey, monitoring, testing, and data recovery projects within the counties of San Diego, Imperial, Orange, Riverside, San Bernardino, and Kern. Ms. Castells has extensive experience providing regulatory compliance for CEQA, NEPA, NHPA, NAGPRA, and local guidelines and regulations. Ms. Castells is a Registered Professional Archaeologist, and exceeds the Secretary of the Interior Professional Qualifications Standards for Archaeology. Her interests focus on historical archaeology and the regional history and prehistory of Southern California.

Education

M.A., Anthropology, San Diego State University
B.A., Anthropology, University of California, San Diego

Registrations

Register of Professional Archaeologists (3748180)
San Diego County CEQA Consultant List for Archaeological Resources
Orange County's Reference List for Certified Archaeologists
Riverside County Cultural Resources Consultants List

Selected Archaeological Experience

City of San Diego Cultural and Paleontological Resources On-Call As-Needed Environmental Consulting Agreement (R-309919/H146284), San Diego, CA
Principal Investigator / Project Manager | San Diego County, CA
Provides cultural resources and paleontological support of the City of San Diego's utilities undergrounding program. Conducts cultural resources inventories including record searches and archaeological surveys to identify project areas which may contain cultural resources in support of multiple MNDs and a programmatic EIR. Recommends mitigation measures including resource testing and evaluation, avoidance, and construction monitoring. Works with the City and contractors to fulfill mitigation measures including construction monitoring, resource identification, recordation, and evaluation. City of San Diego, Transportation and Storm Water Department is the lead agency.

University of California, San Diego, Hillcrest Campus Long Range Development Plan EIR Project
Principal Investigator / Project Manager | San Diego, CA
Conducted a cultural resources survey and prepared a technical report in support of the project's EIR. Identified a cultural resource with human remains within the project area. Recommended mitigation measures for the resource to avoid adverse effects. Assisted UCSD with their AB-52 tribal consultation, including organizing, scheduling, facilitating, and reporting on tribal consultation meetings. UCSD was the lead agency.

SANDAG Bayshore Bikeway – Segment 8B Project
Principal Investigator / Project Manager | San Diego and National Cities
Conducted a cultural resource study for the Project including: delineating and mapping the area of potential effect, conducting a record search and an archaeological survey of the APE, preparing the Historic Property Survey Report,

Archaeological Survey Report, Finding of Effect document, and Department of Parks and Recreation Archaeological Site Forms for a railroad line eligible for and listed in the San Diego Register of Historical Resources and for a historic district that was eligible for the National Register of Historic Places. Created mitigation measures to avoid an adverse impact to these historic properties during implementation of the Project. Conducted AB-52 consultation on behalf of SANDAG. Assisted in SHPO consultation.

Heritage Road Bridge Replacement Project
Principal Investigator / Project Manager | City of Chula Vista, CA
Conducted a cultural resource study for the Project including: delineating and mapping the area of potential effect (APE), conducting a record search and an archaeological survey of the APE, preparing the Historic Property Survey Report and the Archaeology Survey Report, and creating mitigation measures. City of Chula Vista and Caltrans were the lead agencies.

North County Transit District Advanced Train Control and Positive Train Control Antennas at Five Locations for the Elvira to Morena Double Track Project
Principal Investigator / Project Manager | San Diego, CA
Conducted a cultural resources survey of the five areas of potential effect and prepared the associated Archaeological Resources Management Reports. Prepared the Federal Communications Commission's Form 620, public outreach and Tower Construction Notification System for each antenna. Consulted with the California State Historic Preservation. Federal Communication Commission was the lead agency.

Harbor View Hotel Project,
Principal Investigator / Project Manager | San Diego, CA
Prepared an archaeological assessment of the Project area and a construction monitoring plan in compliance with the City of San Diego's Mitigation Monitoring requirements. Managed the archaeological monitoring of the Project's construction during the initial ground disturbance and grading of the Project area. Identified, documented, and evaluated for significance under CEQA, to the CRHR, and to the City of San Diego Historical Resources Register a feature containing the remains of a historic boat. Documented the boat feature on DPR 523 forms. Provided a technical report with the results of the monitoring, testing, evaluation and data recovery, including an artifact analysis and historic research. City of San Diego was the lead agency.

Machado Smith Excavation, Old Town San Diego State of California Historic Park
Principal Investigator / Project Manager | San Diego, CA
Prepared a work plan and California State Parks permit application for the excavation in order to identify the location of two 19th century structures, evaluate the archaeological remains for eligibility to the CRHR and significance under CEQA, and to assist in the recreation of the buildings in Old Town San Diego State of California Historic Park. Directed excavations including mechanical trenching and hand excavations. Excavated 19th century features. Directed laboratory work associated with the excavations, cataloged the artifacts, performed the artifact analysis, and prepared the artifact collection for curation. Evaluated the cultural resource for eligibility to the NRHP and CRHR, and for significance under CEQA. Prepared a technical report providing the results of the excavation, artifact analysis, evaluation of the resources to the CRHR, provided mitigation measures, and guidance to the building recreation process. Prepared DPR 523 forms for the cultural resource. California State Parks was the lead agency.

San Diego County Administration Center Parking Garage, Cedar and Ketter Project
Principal Investigator / Project Manager | San Diego, CA
Prepared an archaeological assessment of the project area and a construction monitoring plan in compliance with CEQA and the City of San Diego's Mitigation Monitoring requirements. Managed the archaeological monitoring of the project's construction during the initial ground disturbance and grading of the Project area. Identified, documented, and evaluated

for significance under CEQA, to the CRHR, and to the City of San Diego Historical Resources Register a historic well. Performed a data recovery on the well feature. Provided a technical report with the results of the monitoring, testing, evaluation and data recovery, including an artifact analysis and historic research. Documented cultural resources on DPR 523 forms. Prepared the artifact collection, artifact analysis, and historic research to be incorporated into a display to be placed in the parking garage and the County Administration Center. City of San Diego was the lead agency.

Archaeological Survey for the County of San Diego Fuel Reduction Parcel Preparation Program in Julian, Whispering Pines, and Along State Route 78/79
Principal Investigator / Project Manager | San Diego County, CA
Conducted a cultural resources survey of the project area in compliance with CEQA and San Diego County Guidelines. Prepared a technical report and created avoidance measures in consultation with the County of San Diego to avoid all impacts to cultural resources and prepared a technical report. Documented cultural resources on DPR 523 Forms. San Diego County was the lead agency.

Pacifica Vista Self Storage Project
Principal Investigator / Project Manager | Vista, CA
Conducted a cultural resource survey of the project area and prepared technical report in compliance with CEQA and City of Vista Guidelines. Identified two cultural resources within the Project area, evaluated one cultural resource and created avoidance measures to avoid the second resource. Documented cultural resources on DPR 523 Forms. City of Vista was the lead agency.

Broadway Earthen Channel Repairs Project
Principal Investigator / Project Manager | El Cajon, CA
Conducted a cultural resource survey of the project area and prepared a technical report in support of the project's environmental documents. The project is subject to CEQA-Plus and was conducted in compliance with City of EL Cajon, County of San Diego and Section 106 of the NHPA requirements. Identified, documented, and evaluated a cultural resource within the project area. City of El Cajon, County of San Diego, and California Clean Water State Revolving Fund Program were the lead agencies.

Rancho Del Rio Biological Mitigation Parcel Project
Principal Investigator / Project Manager | San Diego, CA
Conducted a cultural resource survey of the project area and prepared a technical report in compliance with the City of San Diego CEQA Guidelines. Identified a cultural resource within the project area and documented the resource on DPR 523 Forms recommended avoidance measures or evaluation of the resource to the CRHR and City Register. City of San Diego was the lead agency.

India and Date Project at 1703 India Street for H.G. Fenton
Principal Investigator / Project Manager | San Diego, CA
Prepared an archaeological assessment of the Project area and a construction monitoring plan in compliance with the City of San Diego's Mitigation Monitoring requirements. Conducted a pre-testing program within the Project area using mechanically excavated trenches to identify possible archaeological deposits. Identified a layer of fill soil that did not need to be monitored. Managed the archaeological monitoring of the Project's construction during the initial ground disturbance and grading of the Project area. Identified, documented, and evaluated for significance under CEQA, to the CRHR, and to the City of San Diego Historical Resources Register two historic trash scatters. Performed evaluation testing on the archaeological deposits. Documented cultural resources on DPR 523 forms. Provided a technical report with the results of the monitoring, testing, and evaluation, including an artifact analysis and historic research. City of San Diego was the lead agency.

RED TAIL ENVIRONMENTAL

Spencer Bietz, B.A.

Senior Archaeologist / GIS Specialist

Professional Profile

Mr. Spencer Bietz is the Archaeological Field Director at Red Tail Environmental and has worked as a qualified archaeologist in California for the past 15 years. Mr. Bietz has completed a wide variety of cultural resource management projects and is a qualified archaeological monitor for the City of San Diego and County of San Diego. Mr. Bietz has worked on cultural resource projects throughout San Diego, Imperial, Orange, Riverside, San Bernardino, Inyo, Kern, Mono, Los Angeles, and Tulare Counties in California. Mr. Bietz has participated in projects for federal agencies such as the Bureau of Land Management and U.S. Forest Service; state agencies, including California State Parks and Caltrans; local governments, including the City and County of San Diego; and private clients. As an archaeologist and paleontologist, Mr. Bietz has experience with construction monitoring, geotechnical sampling, GIS mapping and data management, technical writing, soil screening, field survey and site recordation, resource evaluation, and artifact cataloging and preparation for curation. Mr. Bietz's personal research interests include historical archaeology and the regional history and prehistory of Southern California, GIS data management, modeling, and cartography.

Education

Certificate of Performance as Geographic Information Systems Specialist, San Diego Mesa College
B.A., Anthropology with Concentration in Archaeology, University of California, San Diego

Selected Archaeology Experience

City of San Diego Cultural and Paleontological Resources On-Call As-Needed Environmental Consulting Agreement (R-309919/H146284), San Diego, CA
Senior Archaeologist | San Diego County, CA
Conducts cultural resources inventories including record searches and archaeological surveys to identify project areas which may contain cultural resources in support of multiple MNDs and a programmatic EIR. Recommends mitigation measures including resource testing and evaluation, avoidance, and construction monitoring. Performs archaeological construction monitoring, resource identification, recordation, and evaluation. Also acts as the GIS Specialist to produce report maps and record resources identified during construction monitoring. City of San Diego, Transportation and Storm Water Department is the lead agency.

Archaeological Survey and Monitoring for the Tenaja Fire State and Campground and the Upper San Juan Campground Contract Areas, Trabuco Ranger District
Field Archaeologist | Cleveland National Forest, CA (2018-ongoing)
Conducted cultural resource monitoring and documentation of planned structure demolition within the Upper San Juan Campground Contract Area. Will be performing archaeological monitoring during ground disturbance in 2019. Contributed to technical report and created cartographic figures and digital GIS database. United States Forest Service is the lead agency.

Archaeological and Native American Monitoring for UU525 Block 4J1 Project
Field Director/Archaeological Monitor | San Diego, CA (2018-ongoing)
Field Director and archaeological monitor for the archaeological monitoring for the utility undergrounding project. Worked with construction crews to provide updated schedules. Reviewed notes, created monitoring schedule and archaeological discovery database. Created cartographic figures and digital GIS database. Collected, cleaned, and cataloged artifacts recovered during cultural resource monitoring efforts. City of San Diego is the lead agency.

Ives Residential at 1874 Spindrift Project
Field Director | San Diego, CA (2018-ongoing)
Conducted extended Phase I testing of the project area. Identified, recorded, and evaluated a prehistoric archaeological deposit. Contributed to data recovery technical report and created cartographic figures and GIS digital database. City of San Diego is the lead agency.

Mission Bay Geo-Archaeological Testing
Cultural Resource Monitor | San Diego, CA (2018)
Contributed as the primary cultural resource monitor, assisting in the collection of subsurface core samples for geo-archaeological analysis. Performed subsurface geotechnical bore sampling, photo documentation, sample documentation, GIS map creation and data management, and technical writing. City of San Diego was lead agency.

Crown Point Sewer and Water Group Monitoring, San Diego, California
Cultural Resource Monitor | San Diego, California (2016-2018)
Contributed as a cultural resource monitor during the excavation of trenches and manhole vaults in the community of Crown Point in Pacific Beach, California. City of San Diego was the lead agency.

Pio Pico North Development Project
Field Director | Carlsbad, CA (2016-2017)
Contributed as field director for subsurface testing of multiple resources within a parcel proposed for residential development. Assisted in the creation of the testing protocol and with technical report writing, and directed the excavation of more than 50 mechanically-excavated trenches and 20 TEUs. Additional activities included site recordation and evaluation, historical archival research, recordation and evaluation of a historic-era linear feature (water pipeline), artifact cataloging, shell speciation, GIS data creation and management, and figure creation.

Administration of Courts (AOC) California, San Diego County Courthouse Monitoring
Lead Cultural Resource Monitor | San Diego, CA (2014)
Contributed as the primary cultural resource monitor, assisting in the recording of cultural deposits and features during footing excavation. Oversaw the recording of cultural discoveries, photo documentation, artifact collection, testing of historic features, and site recordation using Trimble GeoXH devices. Assisted in GIS map creation and data management, and artifact preparation.

San Diego Gas and Electric Cultural Resources On-Call, San Diego County, California
Field Archaeologist | Cultural Resource Monitor | San Diego, CA (2014)
Contributed as a field archaeologist assisting in a variety of projects including cultural resource monitoring, deteriorated pole survey, FiRM infrastructure survey, resource testing and evaluation, technical report and summary letter writing, GIS data creation and management, and figure creation.

Sunrise Powerlink Monitoring, San Diego County, California
Cultural Resource Monitor | San Diego, CA (2008-2009)
Contributed as a cultural resource monitor accompanying survey and geo-technical testing crews in the survey and placement of proposed electrical tower locations and their respective access areas along the Sunrise Powerlink. Assisted in site recording, photo documentation, and the identification and marking of sensitive cultural areas for future avoidance by work crews. Additional tasks included writing and compiling of tower cultural data for the final summary report.

APPENDIX B: NAHC CORRESPONDENCE

RED TAIL ENVIRONMENTAL

March 30, 2020

California Native American Heritage Commission
1550 Harbor Blvd, Suite 100
West Sacramento, CA 95691
nahc@nahc.ca.gov

Re: City of Corona Reclaimed Water Project, Riverside County, California

Dear NAHC,

Red Tail Environmental (Red Tail) is conducting an archaeological study for the City of Corona Reclaimed Water Project (project), located within the City of Corona, Riverside County, California. The project area includes the entire city of Corona and the city's sphere of influence. The project is subject to the California Environmental Quality Act (CEQA) and will assess the environmental impact of the City of Corona's Reclaimed Water Master Plan.

Red Tail is currently conducting a records search with the Eastern Information Center. I am writing to request a record search of the Sacred Lands File to determine if you have registered any cultural resources, tribal cultural resources, traditional cultural properties, or areas of heritage sensitivity within the proposed project area. The project area is shown on the following USGS 7.5' Quad Maps:

Prado Dam Quad:
T3S R7W Section 30
T3S R8W Section 25
Unsectioned portions of the La Sierra Yorba land grant

Black Star Canyon Quad:
T3S R7W Sections 32, 33
T3S R8W Section 36
T4S R7W Section 5
Unsectioned portions of the La Sierra Yorba land grant

Corona South Quad:
T3S R7W Section 33
T4S R6W Sections 5, 8, 16, 17, 18, 19, 20, 21, 22
T4S R7W Sections 5, 9, 10
Unsectioned portions of the La Sierra Yorba land grant
Unsectioned portions of the Sobrante De San Jacinto land grant

Lake Matthews Quad:
T4S R6W Section 22
Unsectioned portions of the Sobrante De San Jacinto land grant

Corona North Quad:
Unsectioned portions of the La Sierra Yorba land grant
Unsectioned portions of the Sobrante De San Jacinto land grant

March 30, 2020
City of Corona Reclaimed Water Project

Our investigation will include direct contact with local tribal entities. Please include a list of the appropriate individuals to contact related to this project. Please submit your response via email to Shelby@redtailenvironmental.com.

Sincerely,

Shelby G. Castells

Shelby Castells, M.A., RPA
Director of Archaeology

Attachments: Project Area Maps (1-10)

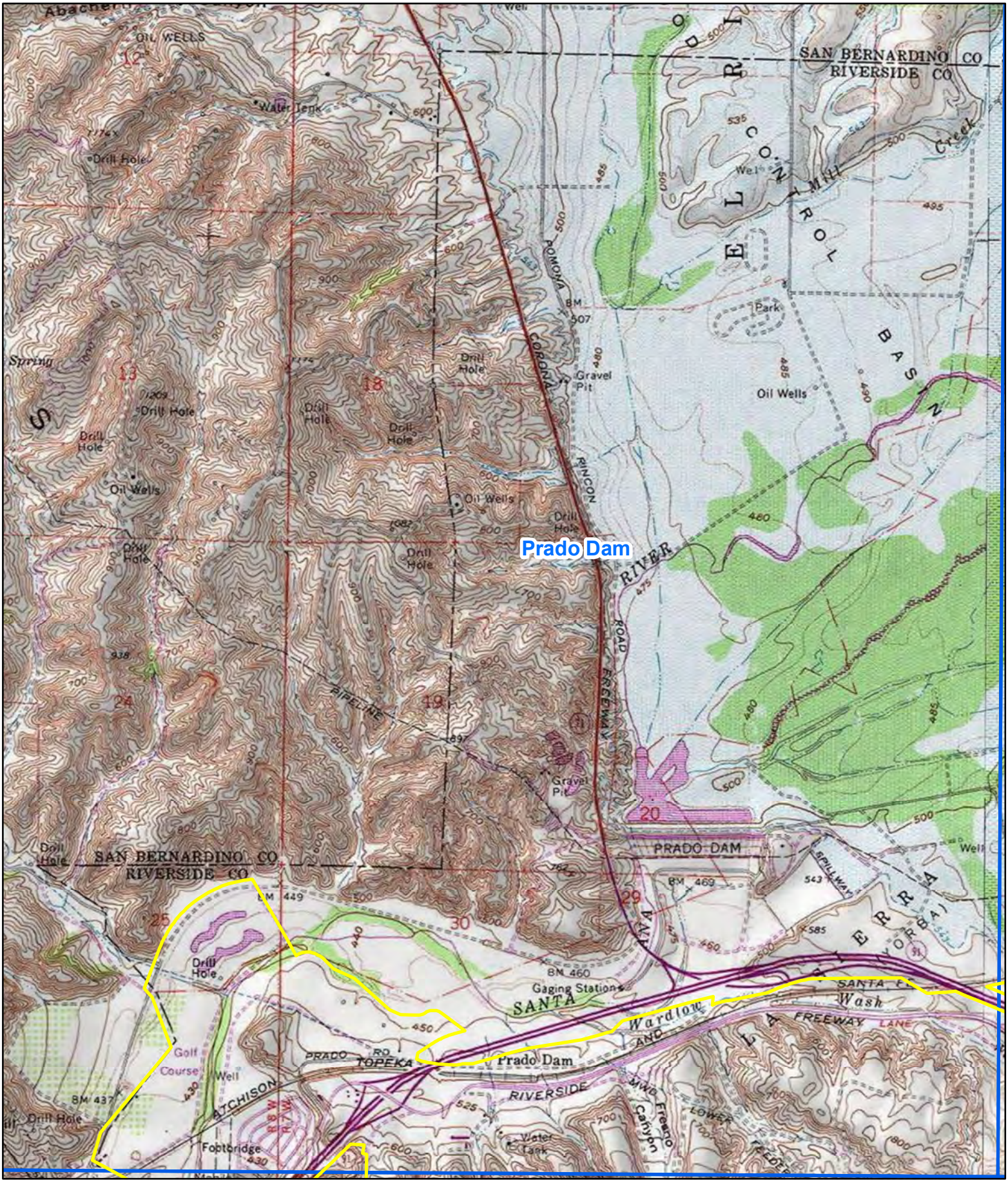


Figure 1. Project Area

RED TAIL ENVIRONMENTAL



Figure 1. Project Area



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0 250 500 1,000 Meters

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Legend

- Project Area
- 7.5' USGS Quads

RED TAIL ENVIRONMENTAL



Figure 1. Project Area

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Legend

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- 7.5' USGS Quads

RED TAIL ENVIRONMENTAL

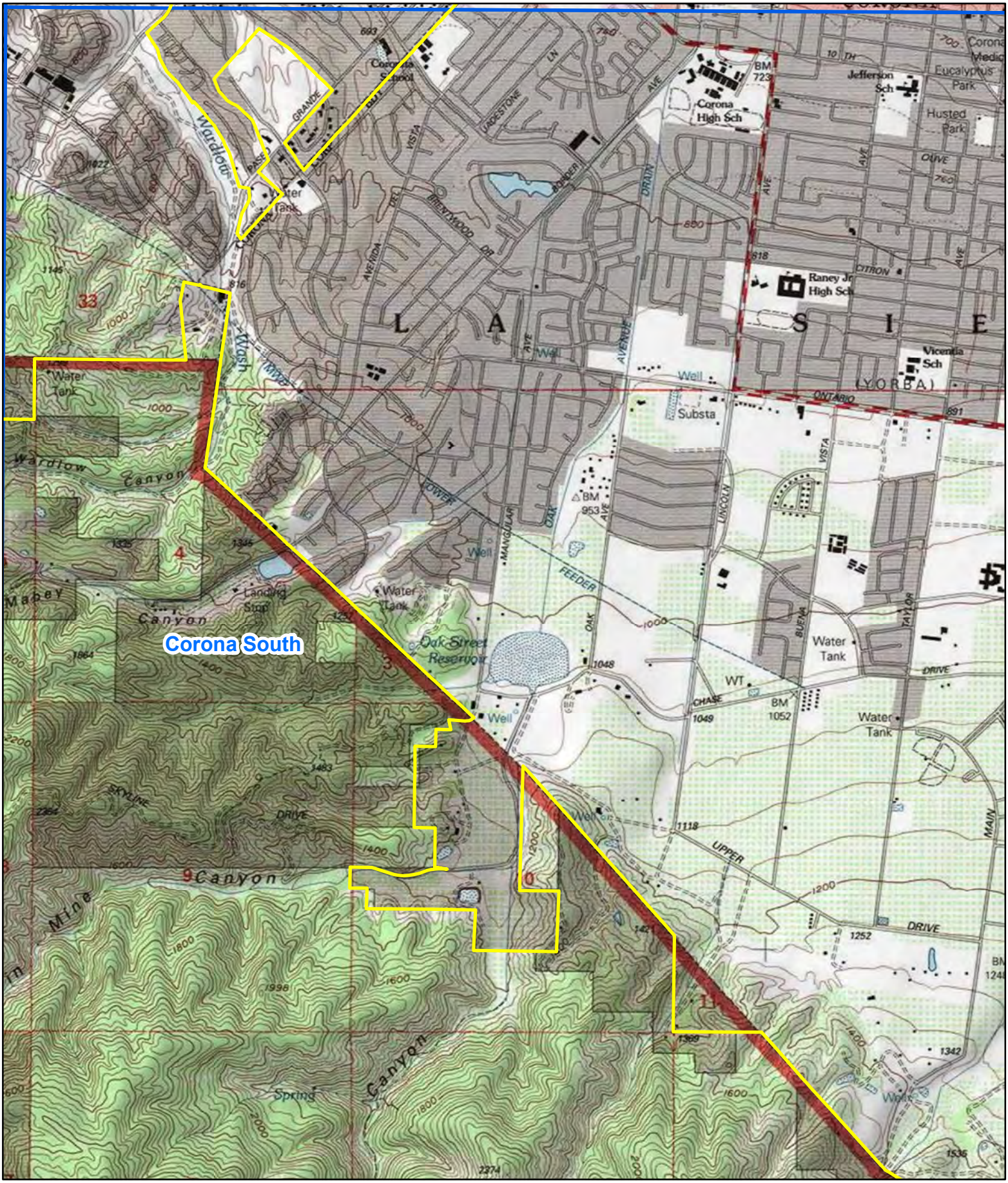


Figure 1. Project Area

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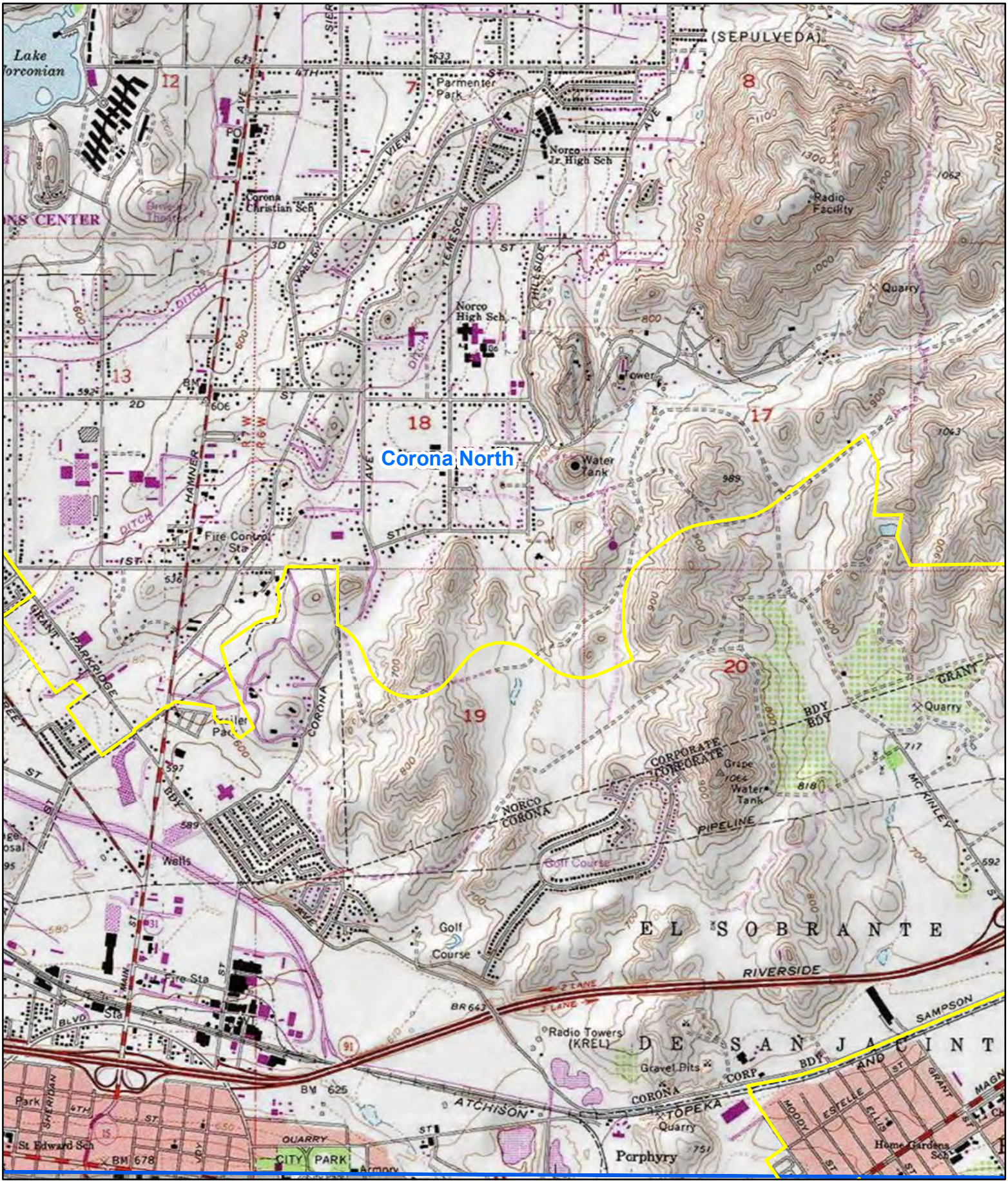
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Legend

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- 7.5' USGS Quads

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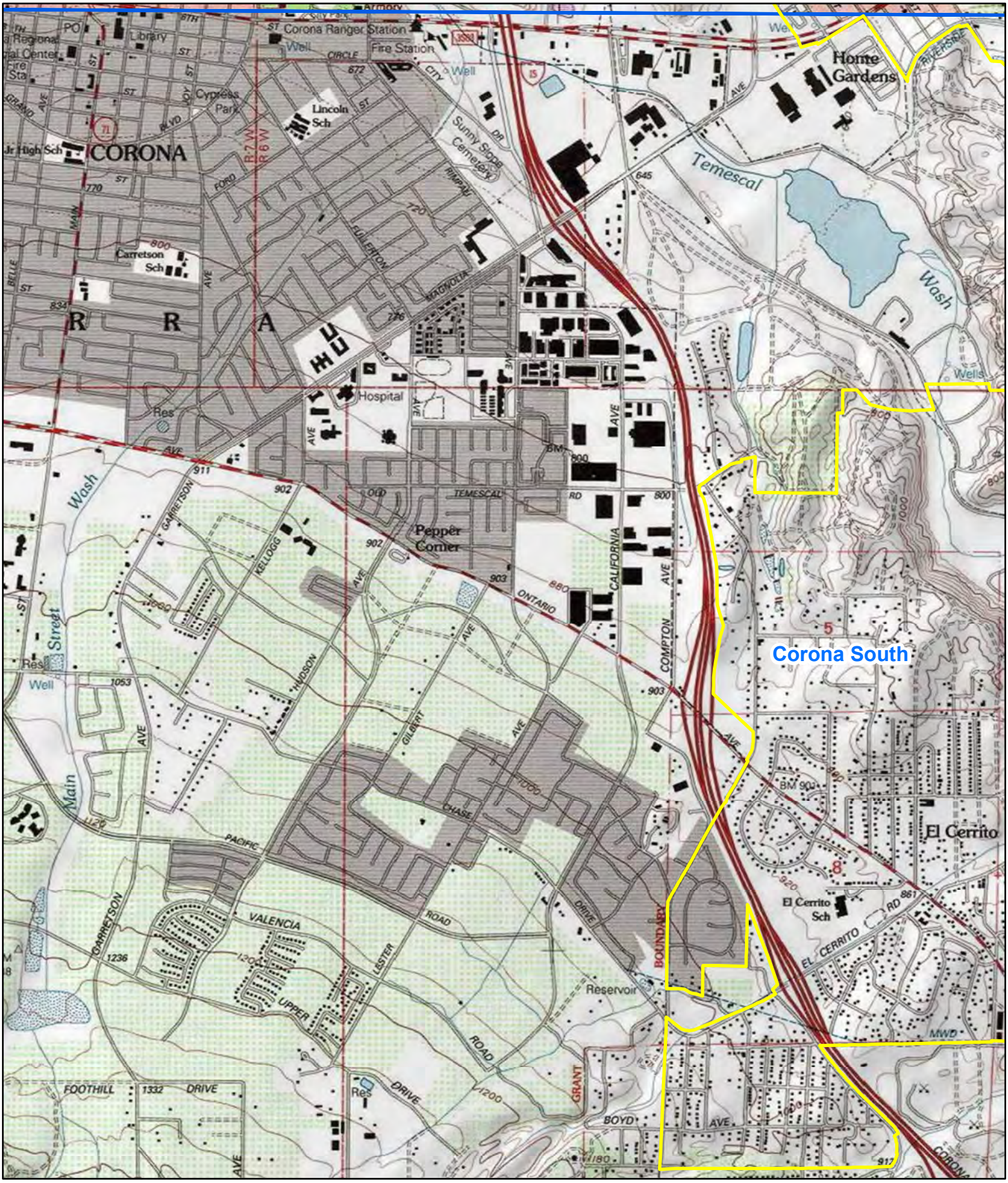


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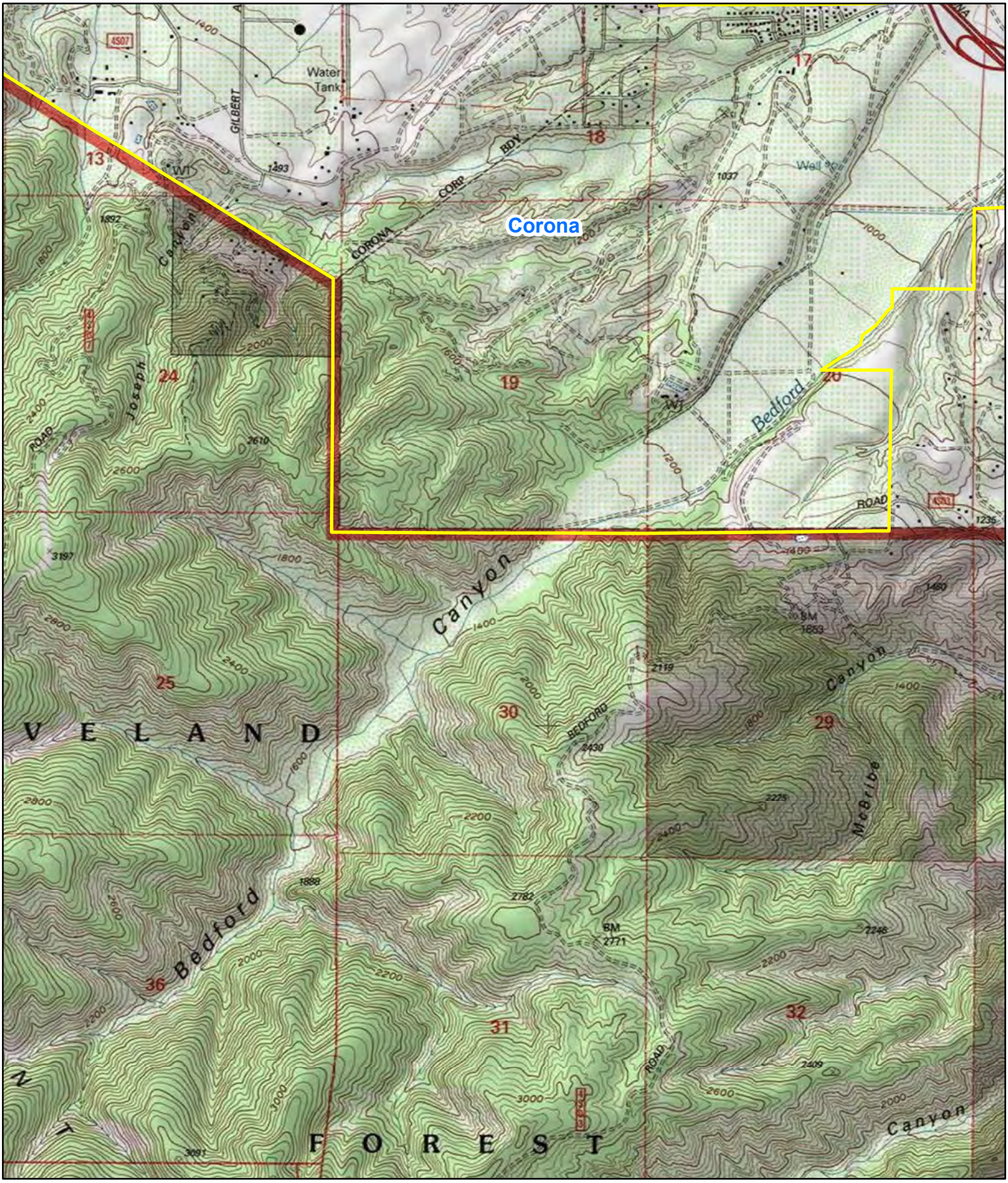
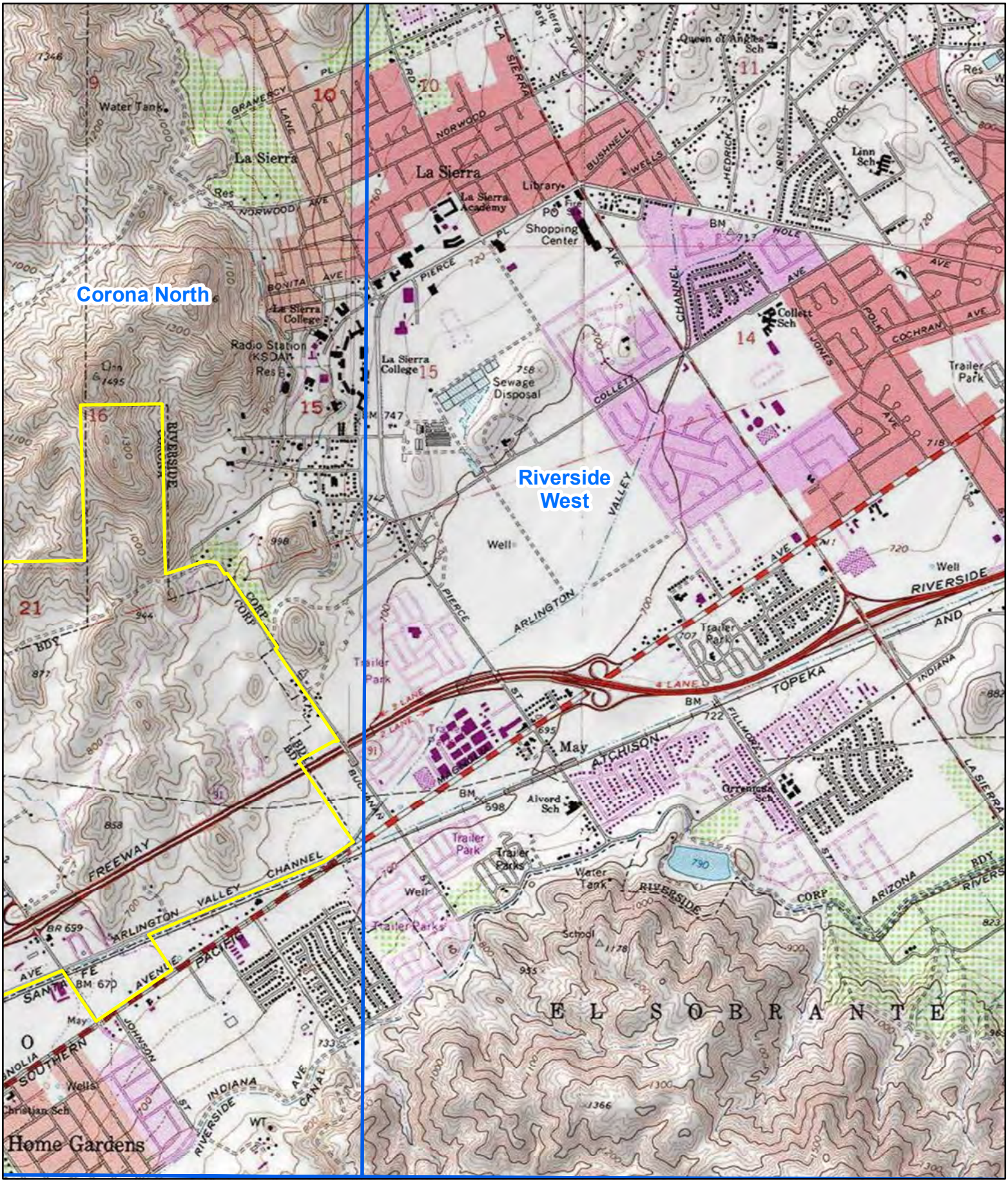


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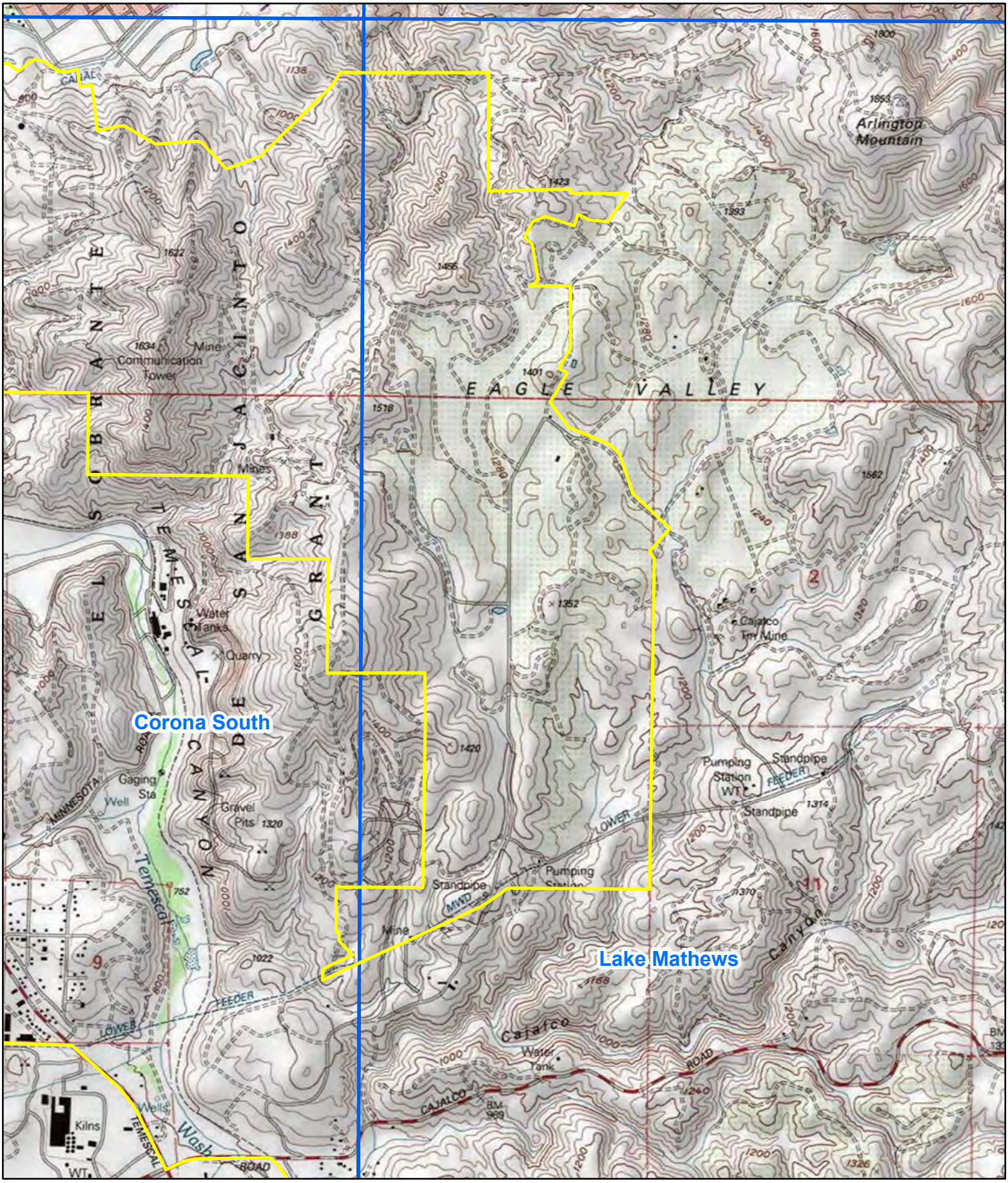
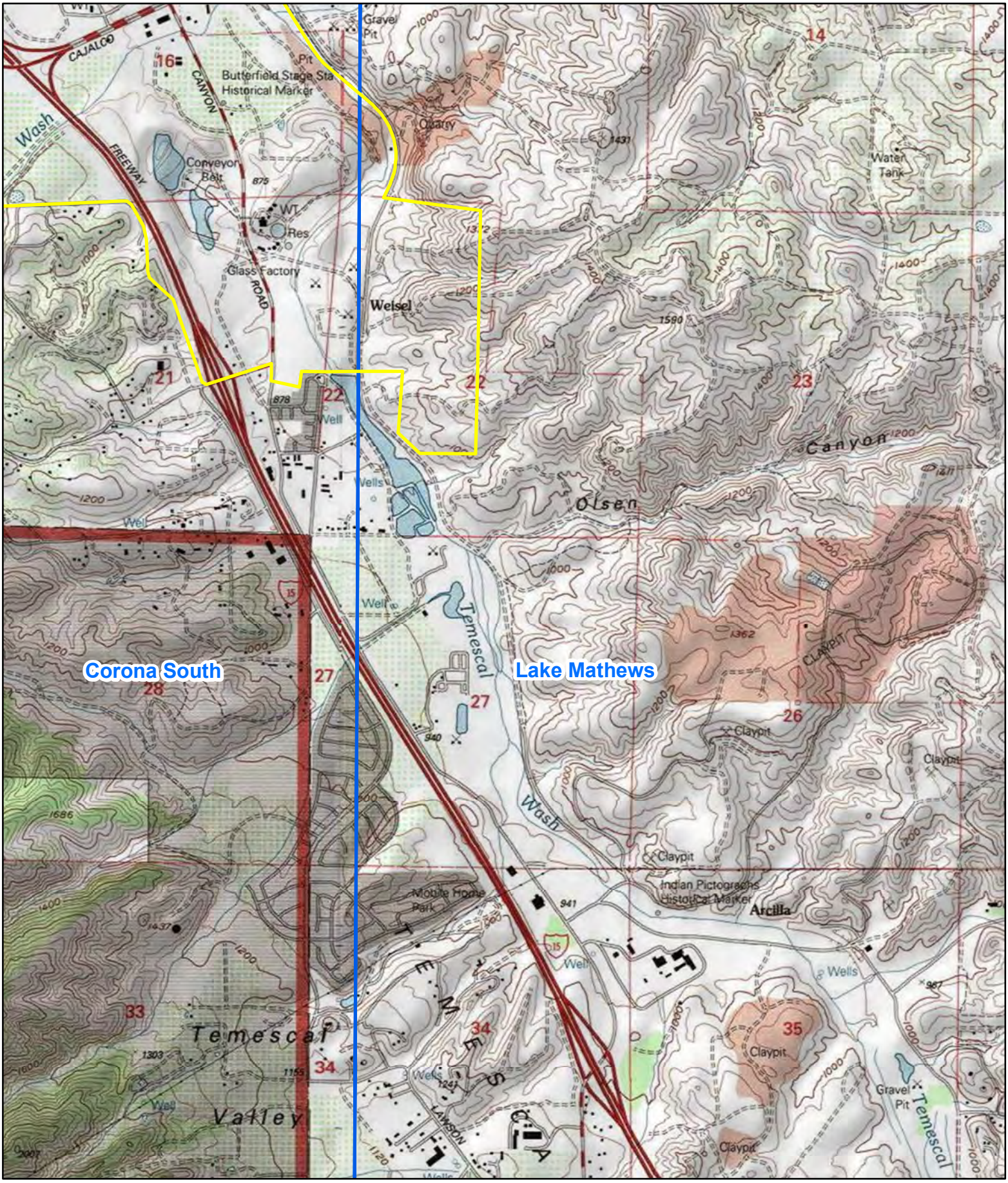


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Figure 1. Project Area

RED TAIL ENVIRONMENTAL

NATIVE AMERICAN HERITAGE COMMISSION

CHAIRPERSON
Laura Miranda
Luiseño

VICE CHAIRPERSON
Reginald Pagaling
Chumash

SECRETARY
Merri Lopez-Keifer
Luiseño

PARLIAMENTARIAN
Russell Attebery
Karuk

COMMISSIONER
Marshall McKay
Wintun

COMMISSIONER
William Mungary
Paiute/White Mountain Apache

COMMISSIONER
Joseph Myers
Pomo

COMMISSIONER
Julie Tumamait-Stenslie
Chumash

COMMISSIONER
[Vacant]

EXECUTIVE SECRETARY
Christina Snider
Pomo

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

April 2, 2020

Shelby Castells
Red Tail Environmental

Via Email to: Shelby@redtailenvironmental.com

Re: Native American Tribal Consultation, Pursuant to the Assembly Bill 52 (AB 52), Amendments to the California Environmental Quality Act (CEQA) (Chapter 532, Statutes of 2014), Public Resources Code Sections 5097.94 (m), 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2 and 21084.3, City of Corona Reclaimed Water Project, Riverside County

Dear Ms. Castells:

Pursuant to Public Resources Code section 21080.3.1 (c), attached is a consultation list of tribes that are traditionally and culturally affiliated with the geographic area of the above-listed project. Please note that the intent of the AB 52 amendments to CEQA is to avoid and/or mitigate impacts to tribal cultural resources, (Pub. Resources Code §21084.3 (a)) ("Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.")

Public Resources Code sections 21080.3.1 and 21084.3(c) require CEQA lead agencies to consult with California Native American tribes that have requested notice from such agencies of proposed projects in the geographic area that are traditionally and culturally affiliated with the tribes on projects for which a Notice of Preparation or Notice of Negative Declaration or Mitigated Negative Declaration has been filed on or after July 1, 2015. Specifically, Public Resources Code section 21080.3.1 (d) provides:

Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section.

The AB 52 amendments to CEQA law does not preclude initiating consultation with the tribes that are culturally and traditionally affiliated within your jurisdiction prior to receiving requests for notification of projects in the tribe's areas of traditional and cultural affiliation. The Native American Heritage Commission (NAHC) recommends, but does not require, early consultation as a best practice to ensure that lead agencies receive sufficient information about cultural resources in a project area to avoid damaging effects to tribal cultural resources.

The NAHC also recommends, but does not require that agencies should also include with their notification letters, information regarding any cultural resources assessment that has been completed on the area of potential effect (APE), such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

- A listing of any and all known cultural resources that have already been recorded on or adjacent to the APE, such as known archaeological sites;
- Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
- Whether the records search indicates a low, moderate, or high probability that unrecorded cultural resources are located in the APE; and
- If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

    - Any report that may contain site forms, site significance, and suggested mitigation measures.

      All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code section 6254.10.

3. The result of any Sacred Lands File (SLF) check conducted through the Native American Heritage Commission was positive. Please contact the tribes on the attached list for more information.

4. Any ethnographic studies conducted for any area including all or part of the APE; and

5. Any geotechnical reports regarding all or part of the APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS are not exhaustive and a negative response to these searches does not preclude the existence of a tribal cultural resource. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the event that they do, having the information beforehand will help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our consultation list remains current.

If you have any questions, please contact me at my email address: Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green

Andrew Green
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Tribal Consultation List
Riverside County
4/2/2020

Agua Caliente Band of Cahuilla Indians
Jeff Grubbe, Chairperson
5401 Dinah Shore Drive — Cahuilla
Palm Springs, CA, 92264
Phone: (760) 699 - 6800
Fax: (760) 699-6919

Augustine Band of Cahuilla Mission Indians
Amanda Vance, Chairperson
P.O. Box 846 — Cahuilla
Coachella, CA, 92236
Phone: (760) 398 - 4722
Fax: (760) 369-7161
hhaines@augustinetribe.com

Cabazon Band of Mission Indians
Doug Welmas, Chairperson
84-245 Indio Springs Parkway — Cahuilla
Indio, CA, 92203
Phone: (760) 342 - 2593
Fax: (760) 347-7880
jstapp@cabazonindians-nsn.gov

Cahuilla Band of Indians
Daniel Salgado, Chairperson
52701 U.S. Highway 371 — Cahuilla
Anza, CA, 92539
Phone: (951) 763 - 5549
Fax: (951) 763-2808
Chairman@cahuilla.net

Campo Band of Diegueno Mission Indians
Ralph Goff, Chairperson
36190 Church Road, Suite 1 — Diegueno
Campo, CA, 91906
Phone: (619) 478 - 9046
Fax: (619) 478-5818
rgoff@campo-nsn.gov

Ewiiaapaayp Band of Kumeyaay Indians
Robert Pinto, Chairperson
4054 Willows Road — Diegueno
Alpine, CA, 91901
Phone: (619) 445 - 6315
Fax: (619) 445-9126
wmicklin@leaningrock.net

Ewiiaapaayp Band of Kumeyaay Indians
Michael Garcia, Vice Chairperson
4054 Willows Road — Diegueno
Alpine, CA, 91901
Phone: (619) 445 - 6315
Fax: (619) 445-9126
michaelg@leaningrock.net

Gabrieleno Band of Mission Indians - Kizh Nation
Andrew Salas, Chairperson
P.O. Box 393 — Gabrieleno
Covina, CA, 91723
Phone: (626) 926 - 4131
admin@gabrielenoindians.org

Gabrieleno/Tongva San Gabriel Band of Mission Indians
Anthony Morales, Chairperson
P.O. Box 693 — Gabrieleno
San Gabriel, CA, 91778
Phone: (626) 483 - 3564
Fax: (626) 286-1262
GTTribalcouncil@aol.com

Gabrielino /Tongva Nation
Sandonne Goad, Chairperson
106 1/2 Judge John Aiso St., #231 — Gabrielino
Los Angeles, CA, 90012
Phone: (951) 807 - 0479
sgoad@gabrielino-tongva.com

Gabrielino Tongva Indians of California Tribal Council
Robert Dorame, Chairperson
P.O. Box 490 — Gabrielino
Bellflower, CA, 90707
Phone: (562) 761 - 6417
Fax: (562) 761-6417
gtongva@gmail.com

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and section 5097.98 of the Public Resources Code.

This list is only applicable for consultation with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed City of Corona Reclaimed Water Project, Riverside County.

Gabrielino-Tongva Tribe
Charles Alvarez,
23454 Vanowen Street — Gabrielino
West Hills, CA, 91307
Phone: (310) 403 - 6048
roadkingcharles@aol.com

Jamul Indian Village
Erica Pinto, Chairperson
P.O. Box 612 — Diegueno
Jamul, CA, 91935
Phone: (619) 669 - 4785
Fax: (619) 669-4817
epinto@jiv-nsn.gov

Jamul Indian Village
Lisa Cumper, Tribal Historic Preservation Officer
P.O. Box 612 — Diegueno
Jamul, CA, 91935
Phone: (619) 669 - 4855
lcumper@jiv-nsn.gov

Juaneno Band of Mission Indians Acjachemen Nation - Belardes
Matias Belardes, Chairperson
32161 Avenida Los Amigos — Juaneno
San Juan Capisttrano, CA, 92675
Phone: (949) 293 - 8522
kaamalam@gmail.com

La Jolla Band of Luiseno Indians
Fred Nelson, Chairperson
22000 Highway 76 — Luiseno
Pauma Valley, CA, 92061
Phone: (760) 742 - 3771

La Posta Band of Diegueno Mission Indians
Javaughn Miller, Tribal Administrator
8 Crestwood Road — Diegueno
Boulevard, CA, 91905
Phone: (619) 478 - 2113
Fax: (619) 478-2125
jmiller@LPtribe.net

La Posta Band of Diegueno Mission Indians
Gwendolyn Parada, Chairperson
8 Crestwood Road — Diegueno
Boulevard, CA, 91905
Phone: (619) 478 - 2113
Fax: (619) 478-2125
LP13boots@aol.com

Los Coyotes Band of Cahuilla and Cupeño Indians
Shane Chapparosa, Chairperson
P.O. Box 189 — Cahuilla
Warner Springs, CA, 92086-0189
Phone: (760) 782 - 0711
Fax: (760) 782-0712

Manzanita Band of Kumeyaay Nation
Angela Elliott Santos, Chairperson
P.O. Box 1302 — Diegueno
Boulevard, CA, 91905
Phone: (619) 766 - 4930
Fax: (619) 766-4957

Mesa Grande Band of Diegueno Mission Indians
Michael Linton, Chairperson
P.O Box 270 — Diegueno
Santa Ysabel, CA, 92070
Phone: (760) 782 - 3818
Fax: (760) 782-9092
mesagrandeband@msn.com

Morongo Band of Mission Indians
Robert Martin, Chairperson
12700 Pumarra Rroad — Cahuilla
Banning, CA, 92220 — Serrano
Phone: (951) 849 - 8807
Fax: (951) 922-8146
dtorres@morongo-nsn.gov

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This list is only applicable for consultation with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed City of Corona Reclaimed Water Project, Riverside County.

Pala Band of Mission Indians
Shasta Gaughen, Tribal Historic Preservation Officer
PMB 50, 35008 Pala Temecula Rd.
Pala, CA, 92059
Phone: (760) 891 - 3515
Fax: (760) 742-3189
sgaughen@palatribe.com
Cupeno
Luiseno

Pauma Band of Luiseno Indians
Temet Aguilar, Chairperson
P.O. Box 369
Pauma Valley, CA, 92061
Phone: (760) 742 - 1289
Fax: (760) 742-3422
bennaecalac@aol.com
Luiseno

Pechanga Band of Luiseno Indians
Mark Macarro, Chairperson
P.O. Box 1477
Temecula, CA, 92593
Phone: (951) 770 - 6000
Fax: (951) 695-1778
epreston@pechanga-nsn.gov
Luiseno

Quechan Tribe of the Fort Yuma Reservation
Jill McCormick, Historic Preservation Officer
P.O. Box 1899
Yuma, AZ, 85366
Phone: (760) 572 - 2423
historicpreservation@quechantribe.com
Quechan

Ramona Band of Cahuilla
Joseph Hamilton, Chairperson
P.O. Box 391670
Anza, CA, 92539
Phone: (951) 763 - 4105
Fax: (951) 763-4325
admin@ramona-nsn.gov
Cahuilla

Rincon Band of Luiseno Indians
Cheryl Madrigal, Tribal Historic Preservation Officer
One Government Center Lane
Valley Center, CA, 92082
Phone: (760) 297 - 2635
crd@rincon-nsn.gov
Luiseno

Rincon Band of Luiseno Indians
Bo Mazzetti, Chairperson
One Government Center Lane
Valley Center, CA, 92082
Phone: (760) 749 - 1051
Fax: (760) 749-5144
bomazzetti@aol.com
Luiseno

San Fernando Band of Mission Indians
Donna Yocum, Chairperson
P.O. Box 221838
Newhall, CA, 91322
Phone: (503) 539 - 0933
Fax: (503) 574-3308
ddyocum@comcast.net
Kitanemuk
Vanyume
Tataviam

San Luis Rey Band of Mission Indians
San Luis Rey, Tribal Council
1889 Sunset Drive
Vista, CA, 92081
Phone: (760) 724 - 8505
Fax: (760) 724-2172
cjmojado@slrmissionindians.org
Luiseno

San Pasqual Band of Diegueno Mission Indians
Allen Lawson, Chairperson
P.O. Box 365
Valley Center, CA, 92082
Phone: (760) 749 - 3200
Fax: (760) 749-3876
allenl@sanpasqualtribe.org
Diegueno

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Santa Rosa Band of Cahuilla Indians
Steven Estrada, Chairperson
P.O. Box 391820 Cahuilla
Anza, CA, 92539
Phone: (951) 659 - 2700
Fax: (951) 659-2228
mflaxbeard@santarosacahuilla-nsn.gov

Soboba Band of Luiseno Indians
Scott Cozart, Chairperson
P. O. Box 487 Cahuilla
San Jacinto, CA, 92583 Luiseno
Phone: (951) 654 - 2765
Fax: (951) 654-4198
jontiveros@soboba-nsn.gov

Sycuan Band of the Kumeyaay Nation
Cody Martinez, Chairperson
1 Kwaaypaay Court Kumeyaay
El Cajon, CA, 92019
Phone: (619) 445 - 2613
Fax: (619) 445-1927
ssilva@sycuan-nsn.gov

Torres-Martinez Desert Cahuilla Indians
Thomas Tortez, Chairperson
P.O. Box 1160 Cahuilla
Thermal, CA, 92274
Phone: (760) 397 - 0300
Fax: (760) 397-8146
tmchair@torresmartinez.org

Viejas Band of Kumeyaay Indians
John Christman, Chairperson
1 Viejas Grade Road Diegueno
Alpine, CA, 91901
Phone: (619) 445 - 3810
Fax: (619) 445-5337

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This list is only applicable for consultation with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed City of Corona Reclaimed Water Project, Riverside County.

RED TAIL ENVIRONMENTAL

April 6, 2020

Angela Elliott Santos
Chairperson
Manzanita Band of Kumeyaay Nation
PO Box 1302, Boulevard, CA, 91905
619-766-4930

Re: City of Corona Reclaimed Water Project, Riverside County, California

Dear Ms. Elliott Santos,

Red Tail Environmental (Red Tail) is conducting an archaeological study for the City of Corona Reclaimed Water Project (project), located within the City of Corona, Riverside County, California. The project area includes the entire City of Corona and the city's sphere of influence. The project is subject to the California Environmental Quality Act (CEQA) and will assess the environmental impact of the City of Corona's Reclaimed Water Master Plan. The City of Corona is the lead agency. The project area is shown on the following USGS 7.5' Quad Maps:

- USGS 7.5' Prado Dam Quad map within:
  - Township 3 South Range 7 West Section 30,
  - Township 3 South Range 8 West Section 25,
  - Unsectioned portions of the La Sierra Yorba Land Grant.
- USGS 7.5' Black Star Canyon Quad map within:
  - Township 3 South Range 7 West Sections 32 and 33,
  - Township 3 South Range 8 West Section 36,
  - Township 4 South Range 7 West Section 5,
  - Unsectioned portions of the La Sierra Yorba Land Grant.
- USGS 7.5' Corona South Quad map within:
  - Township 3 South Range 7 West Section 33,
  - Township 4 South Range 6 West Sections 5, 8, 16, 17, 18, 19, 20, 21, and 22,
  - Township 4 South Range 7 West Sections 5, 9, and 10,
  - Unsectioned portions of the La Sierra Yorba Land Grant,
  - Unsectioned portions of the Sobrante De San Jacinto Land Grant.
- USGS 7.5' Lake Matthews Quad map within:
  - Township 4 South Range 6 West Section 22,
  - Unsectioned portions of the Sobrante De Sa Jacinto Land Grant.
- USGS 7.5' Corona North Quad map within:
  - Unsectioned portions of the La Sierra Yorba Land Grant,
  - Unsectioned portions of the Sobrante De San Jacinto Land Grant.

A record search of the Sacred Lands File with the California Native American Heritage Commission was positive. Red Tail also conducted a record search at the Eastern Information Center.

We are contacting you to request additional information regarding the Project area, if you are aware of any issues of cultural concern regarding the area shown on the enclosed map. In particular, we would like to know if you have knowledge of any Traditional Cultural Properties, Sacred Sites, Tribal Cultural Resources, resource collecting areas, or any other areas of concern of which you would wish us to be aware. If you have any questions or concerns regarding the proposed Project, please contact me at the address or phone number listed below, or via email at Shelby@redtailenvironmental.com. We appreciate any input you may have on this project.

Sincerely,



Shelby Castells, M.A., RPA
Director of Archaeology
Attachments: Project Area Maps (1-10)

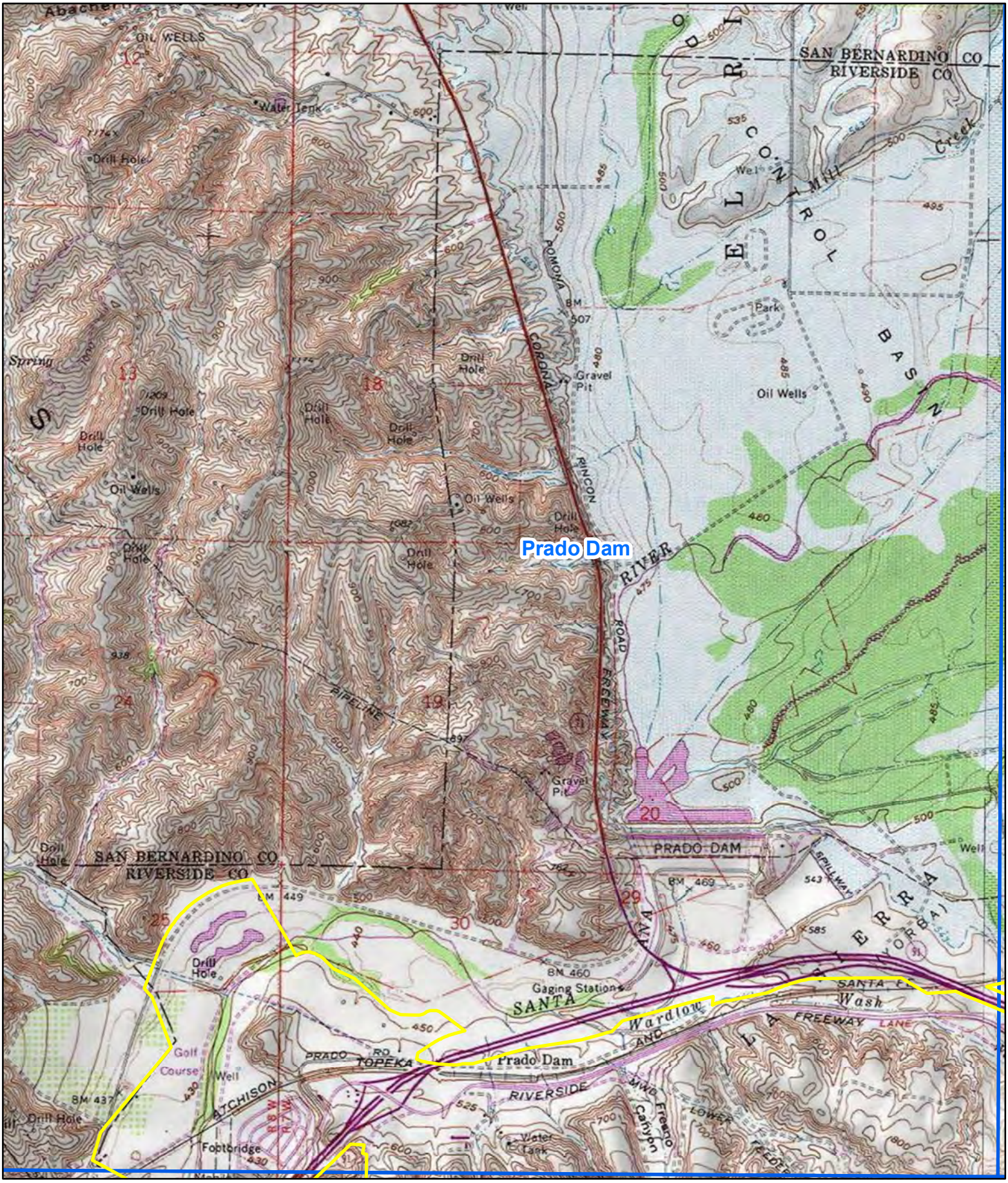


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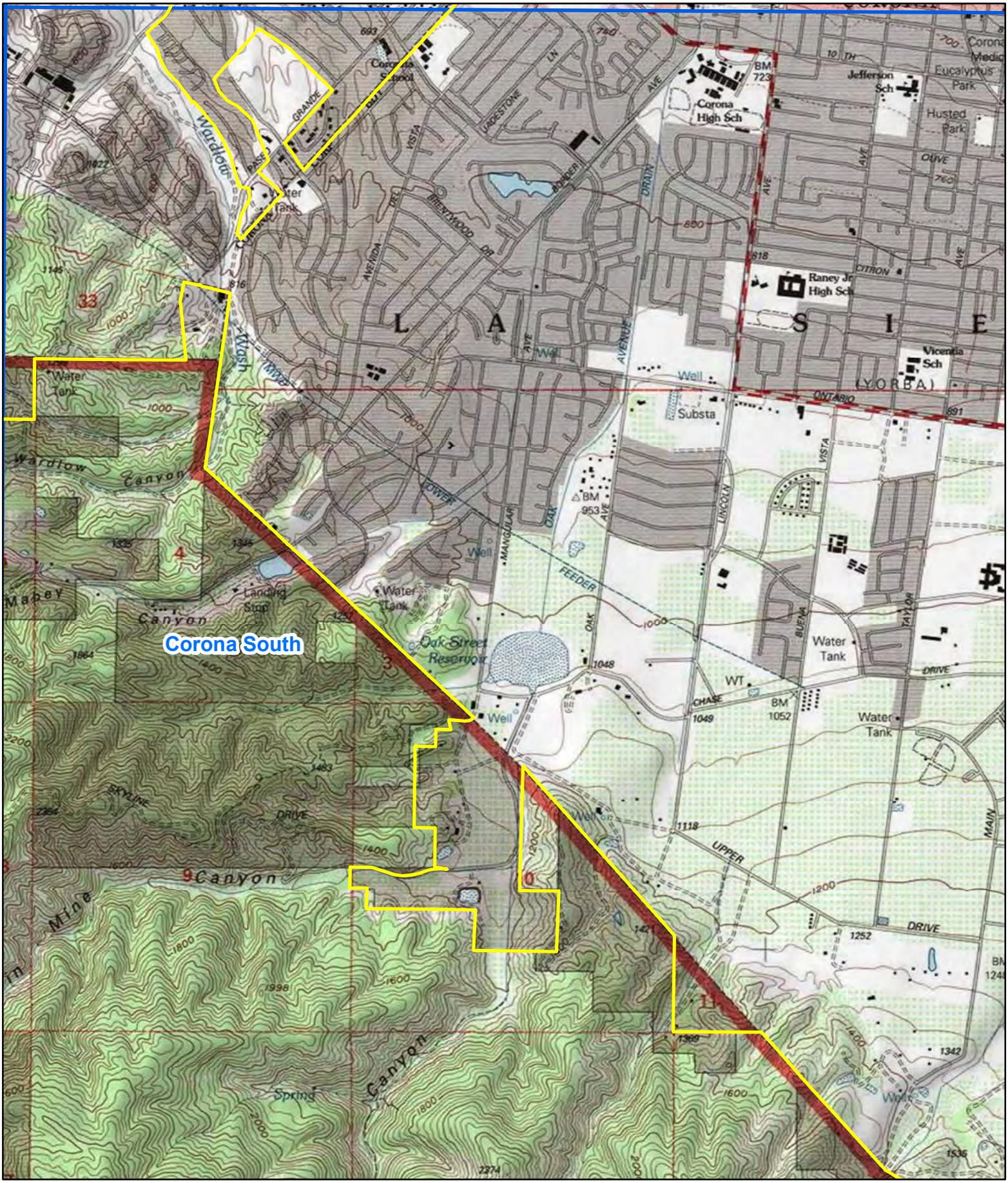


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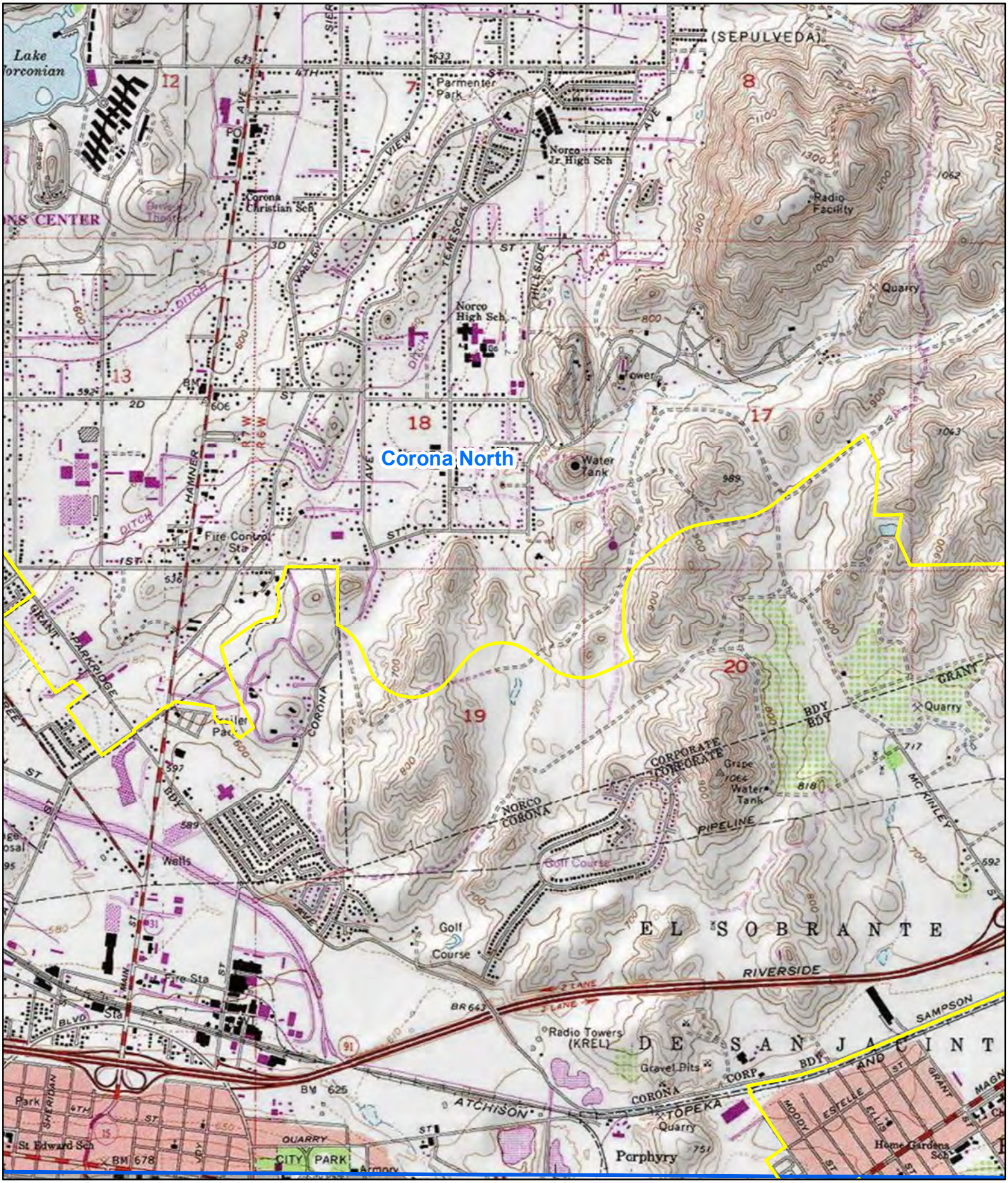
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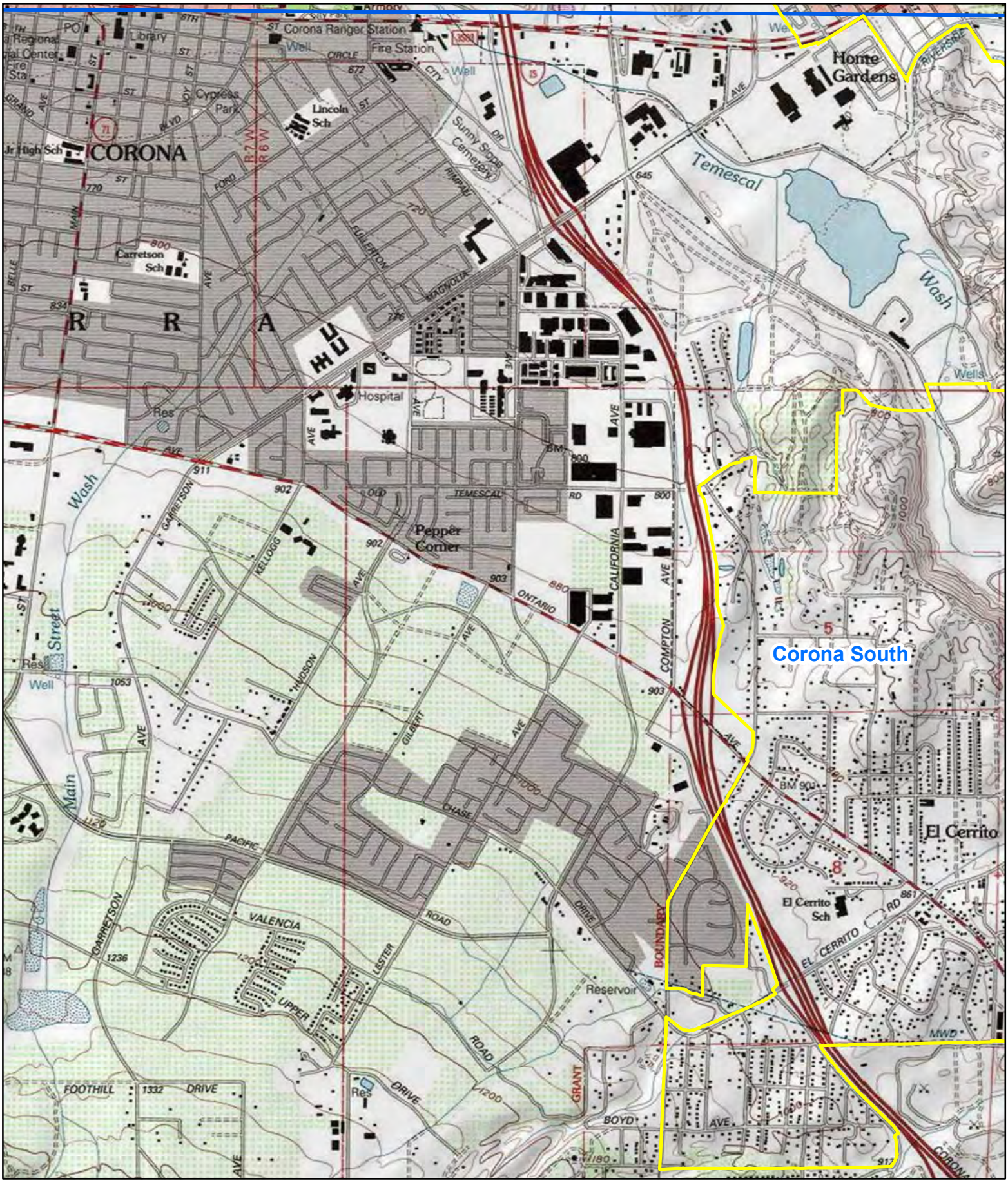


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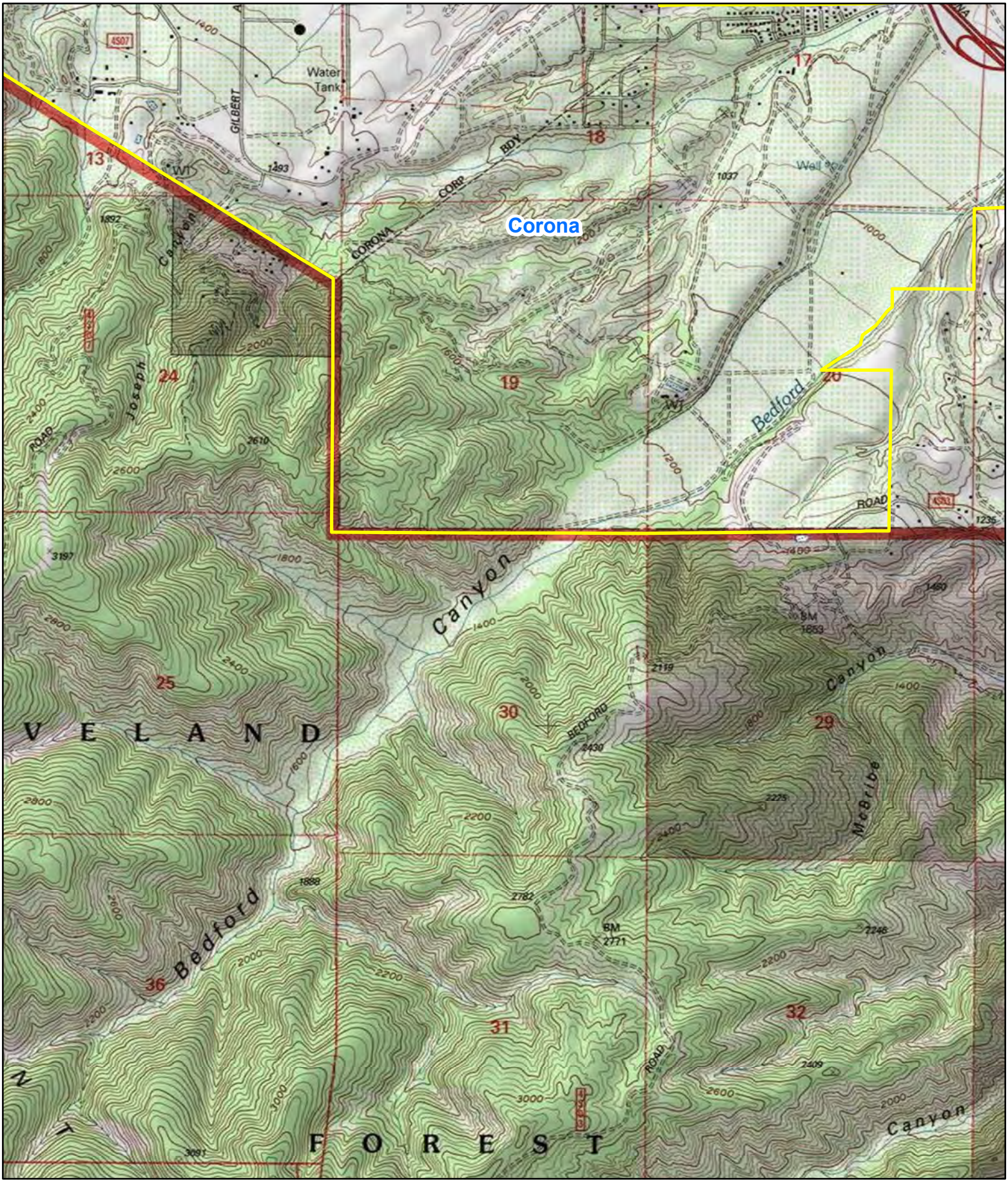


Figure 1. Project Area

RED TAIL ENVIRONMENTAL

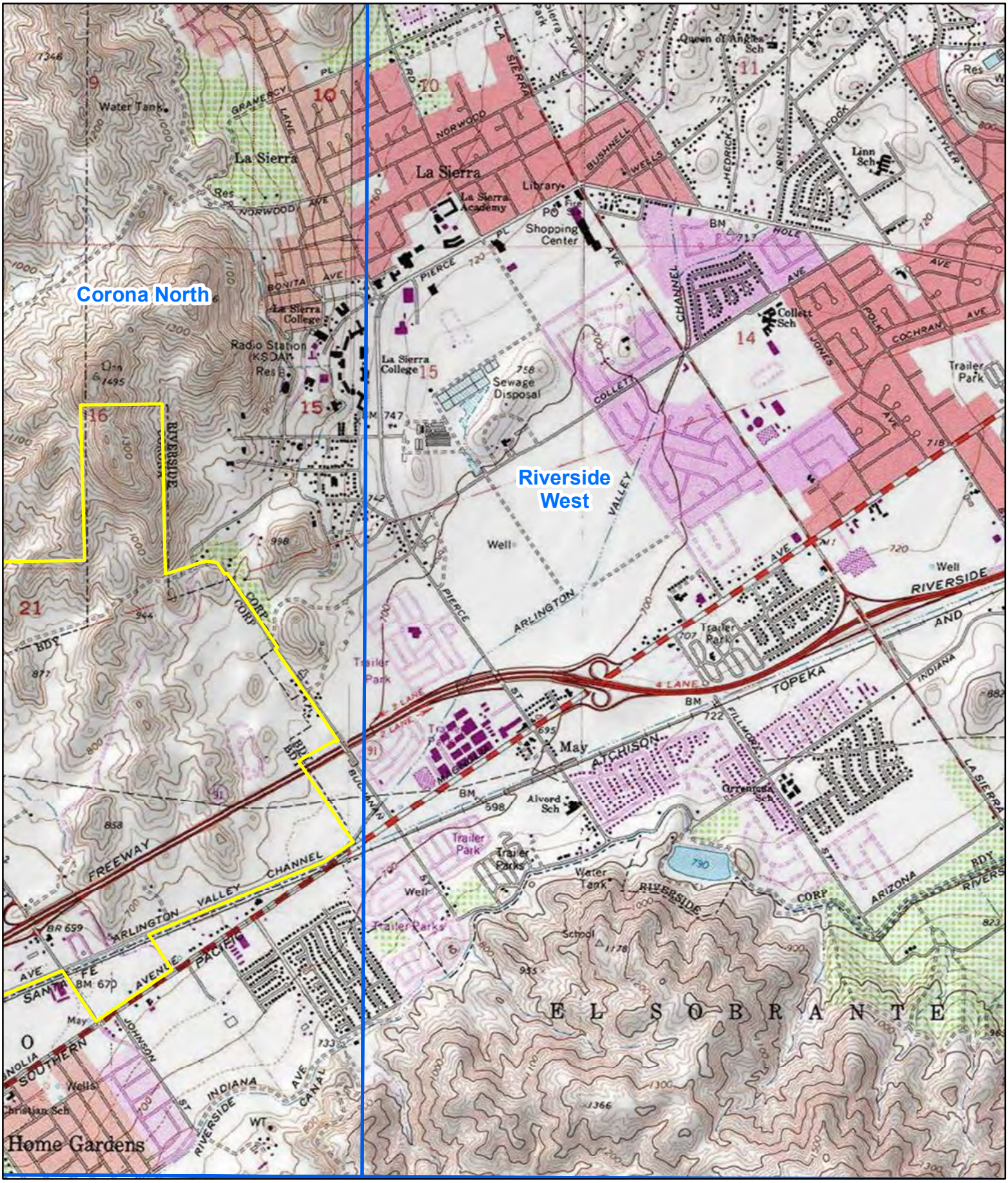


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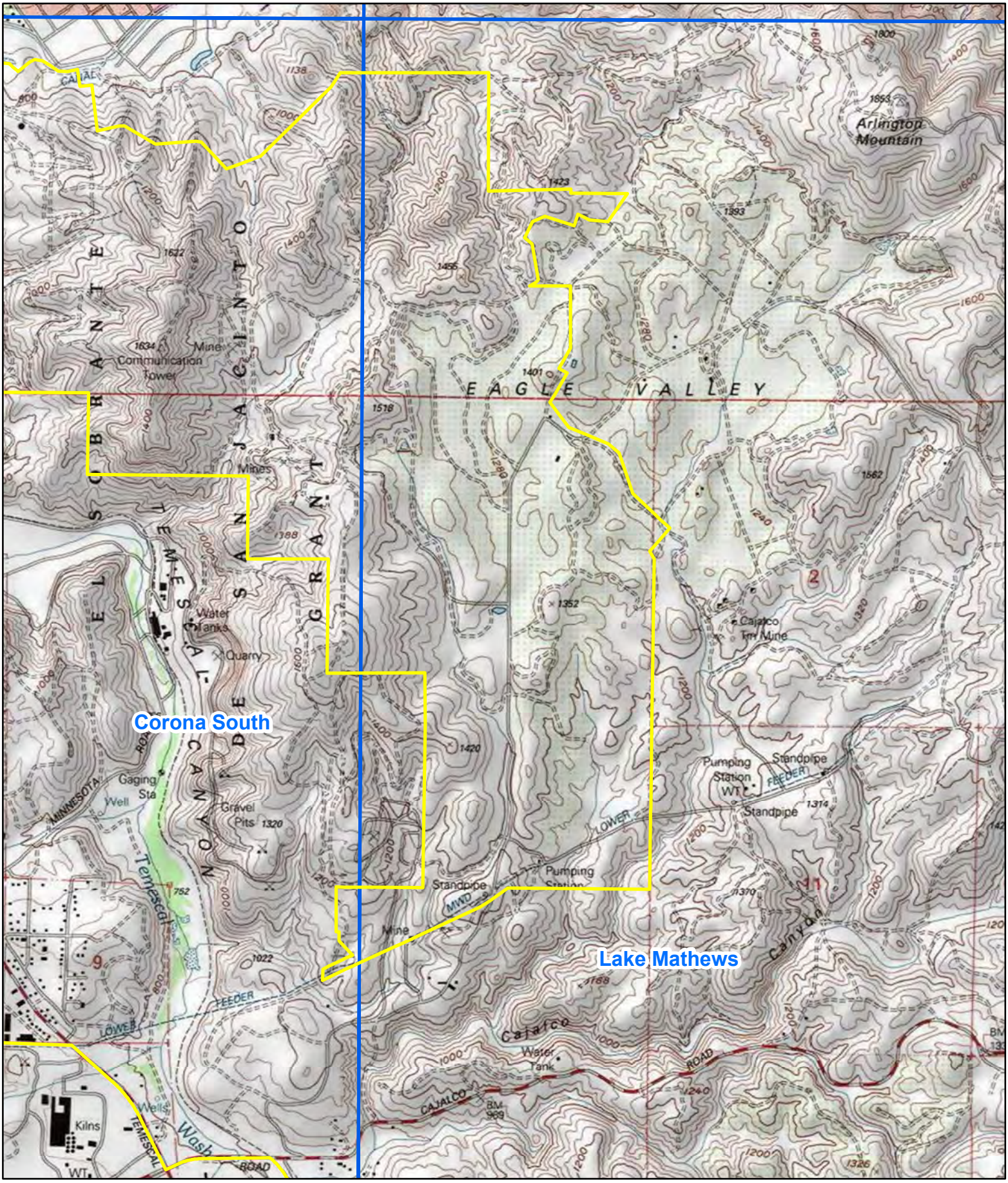
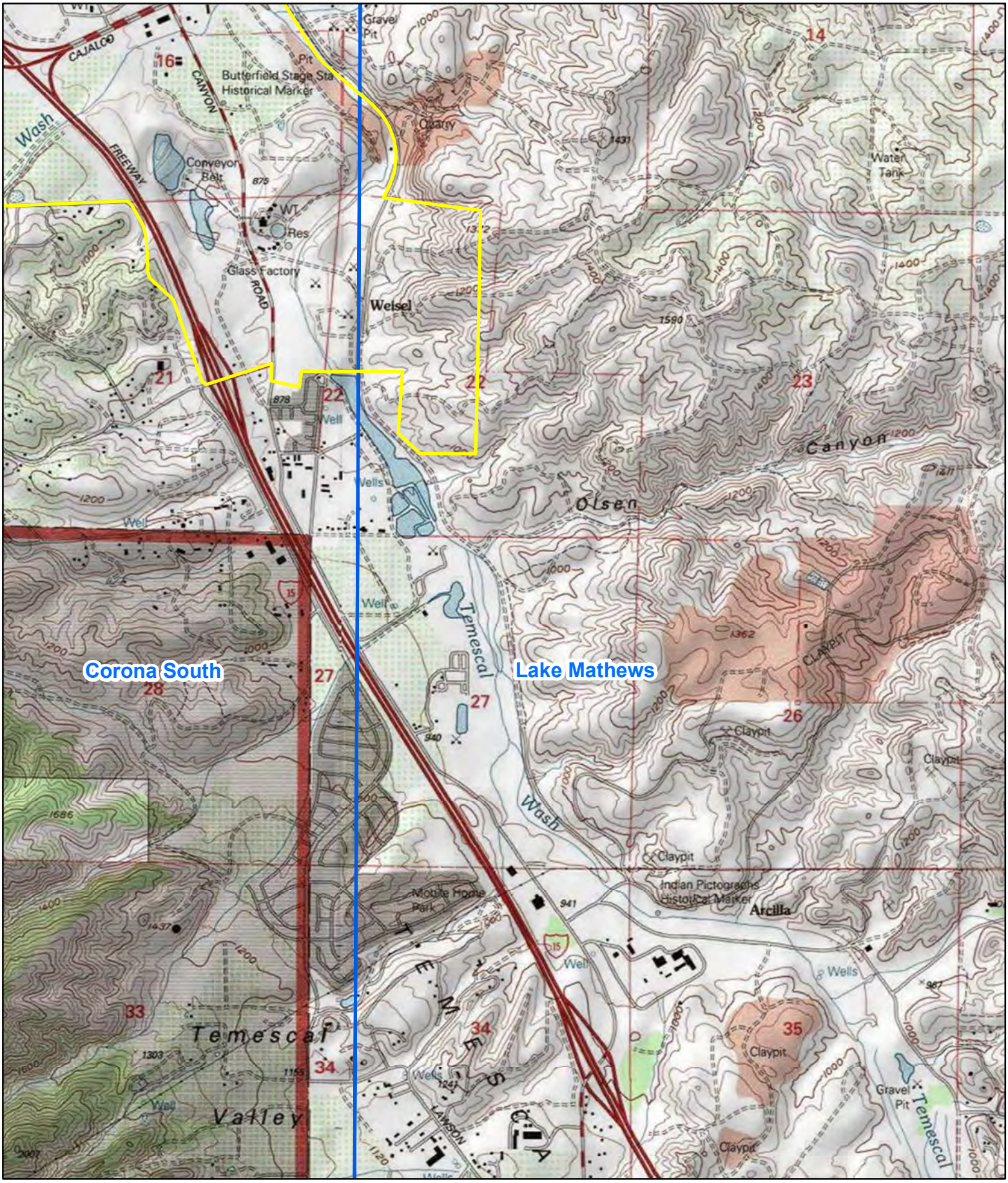


Figure 1. Project Area

RED TAIL ENVIRONMENTAL



1:24,000

0 250 500 1,000 Meters

0 1,000 2,000 4,000 Feet

Legend

- Project Area
- 7.5' USGS Quads

Figure 1. Project Area

RED TAIL ENVIRONMENTAL

RED TAIL ENVIRONMENTAL

April 6, 2020

Allen Lawson
Chairperson
San Pasqual Band of Diegueno Mission Indians
PO Box 365, Valley Center, CA, 92082
760-749-3200
allenl@sanpasqualtribe.org

Re: City of Corona Reclaimed Water Project, Riverside County, California

Dear Mr. Lawson,

Red Tail Environmental (Red Tail) is conducting an archaeological study for the City of Corona Reclaimed Water Project (project), located within the City of Corona, Riverside County, California. The project area includes the entire City of Corona and the city's sphere of influence. The project is subject to the California Environmental Quality Act (CEQA) and will assess the environmental impact of the City of Corona's Reclaimed Water Master Plan. The City of Corona is the lead agency. The project area is shown on the following USGS 7.5' Quad Maps:

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We are contacting you to request additional information regarding the Project area, if you are aware of any issues of cultural concern regarding the area shown on the enclosed map. In particular, we would like to know if you have knowledge of any Traditional Cultural Properties, Sacred Sites, Tribal Cultural Resources, resource collecting areas, or any other areas of concern of which you would wish us to be aware. If you have any questions or concerns regarding the proposed Project, please contact me at the address or phone number listed below, or via email at Shelby@redtailenvironmental.com. We appreciate any input you may have on this project.

Sincerely,



Shelby Castells, M.A., RPA
Director of Archaeology
Attachments: Project Area Maps (1-10)

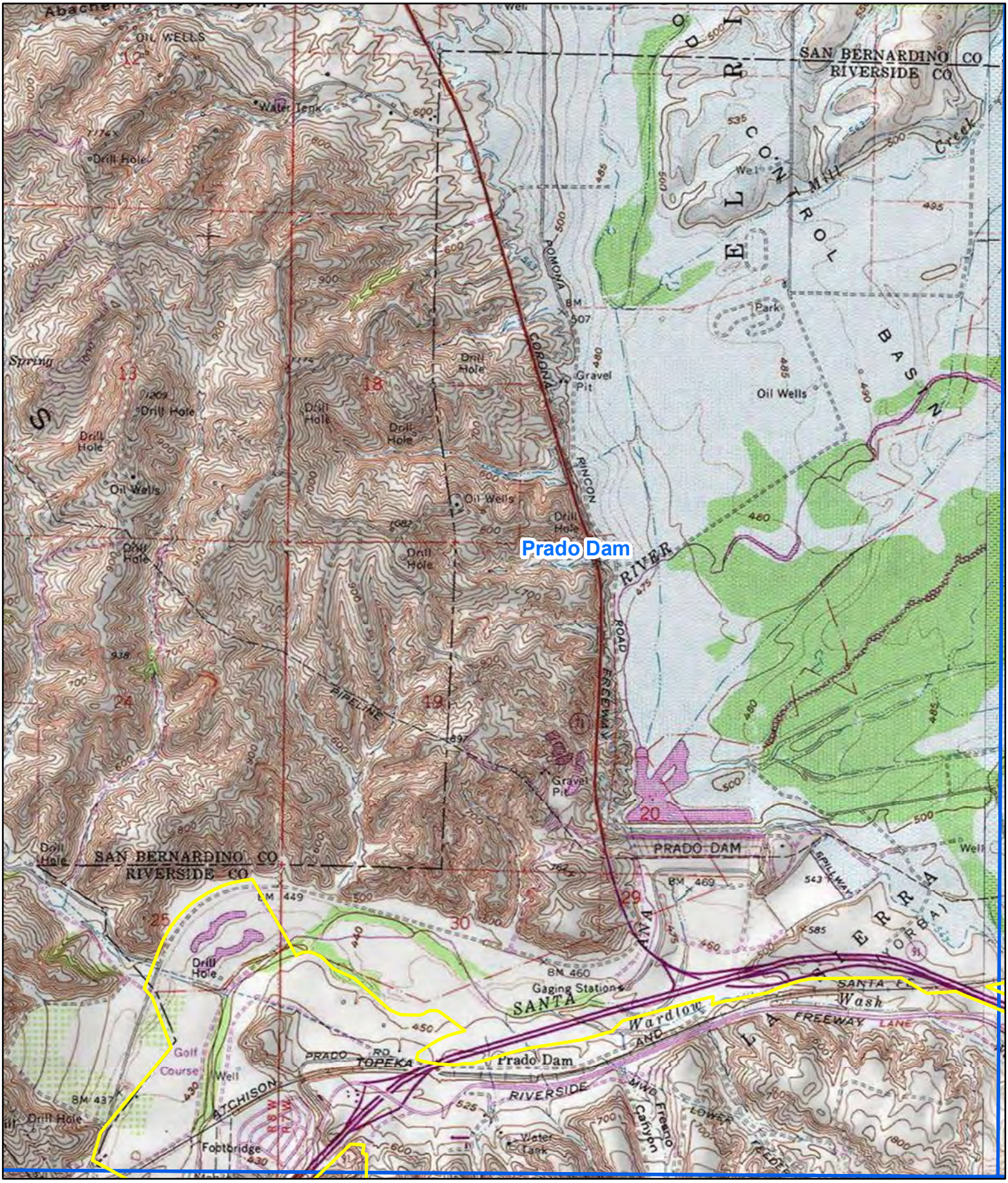


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RED TAIL ENVIRONMENTAL



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RED TAIL ENVIRONMENTAL



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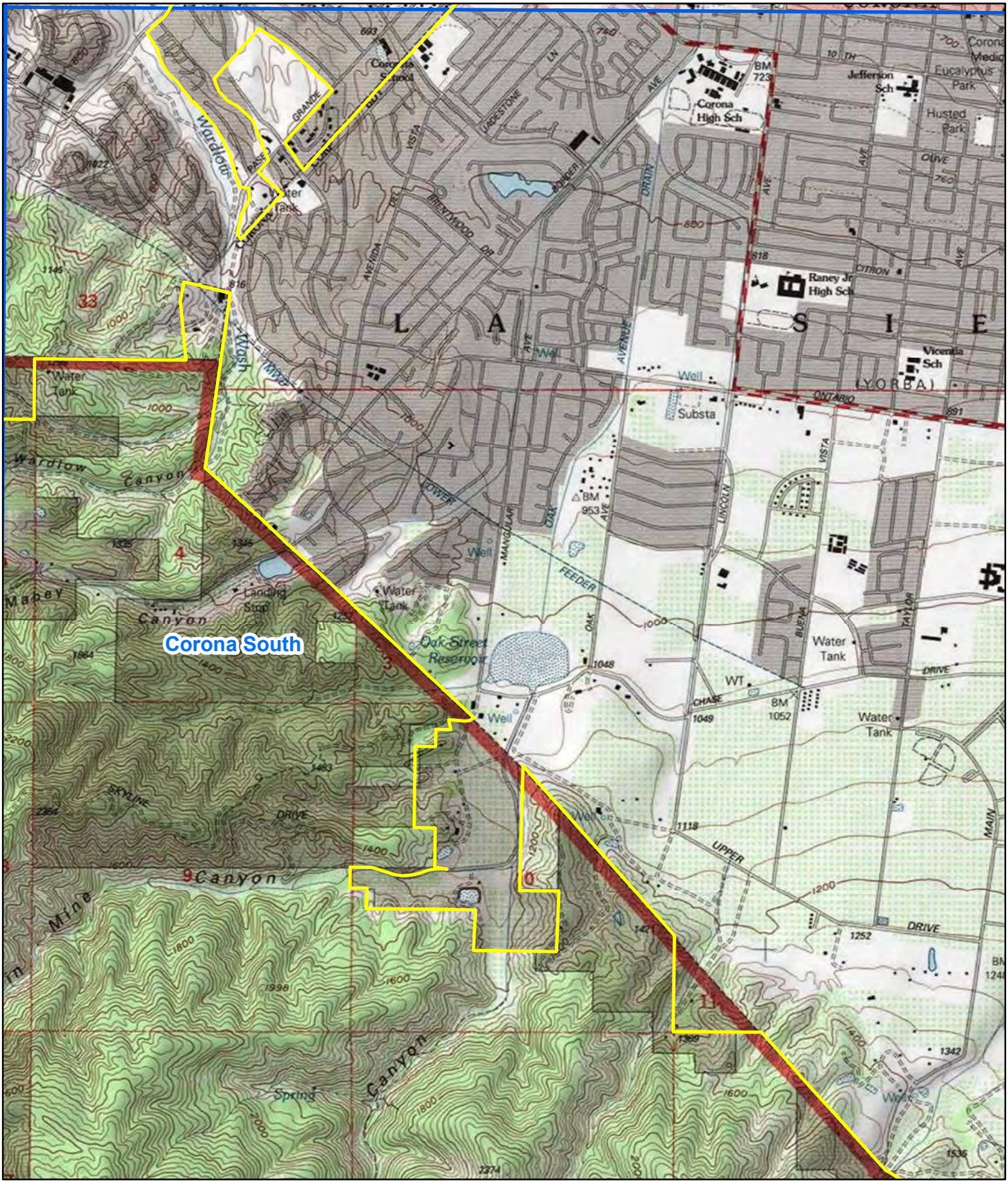


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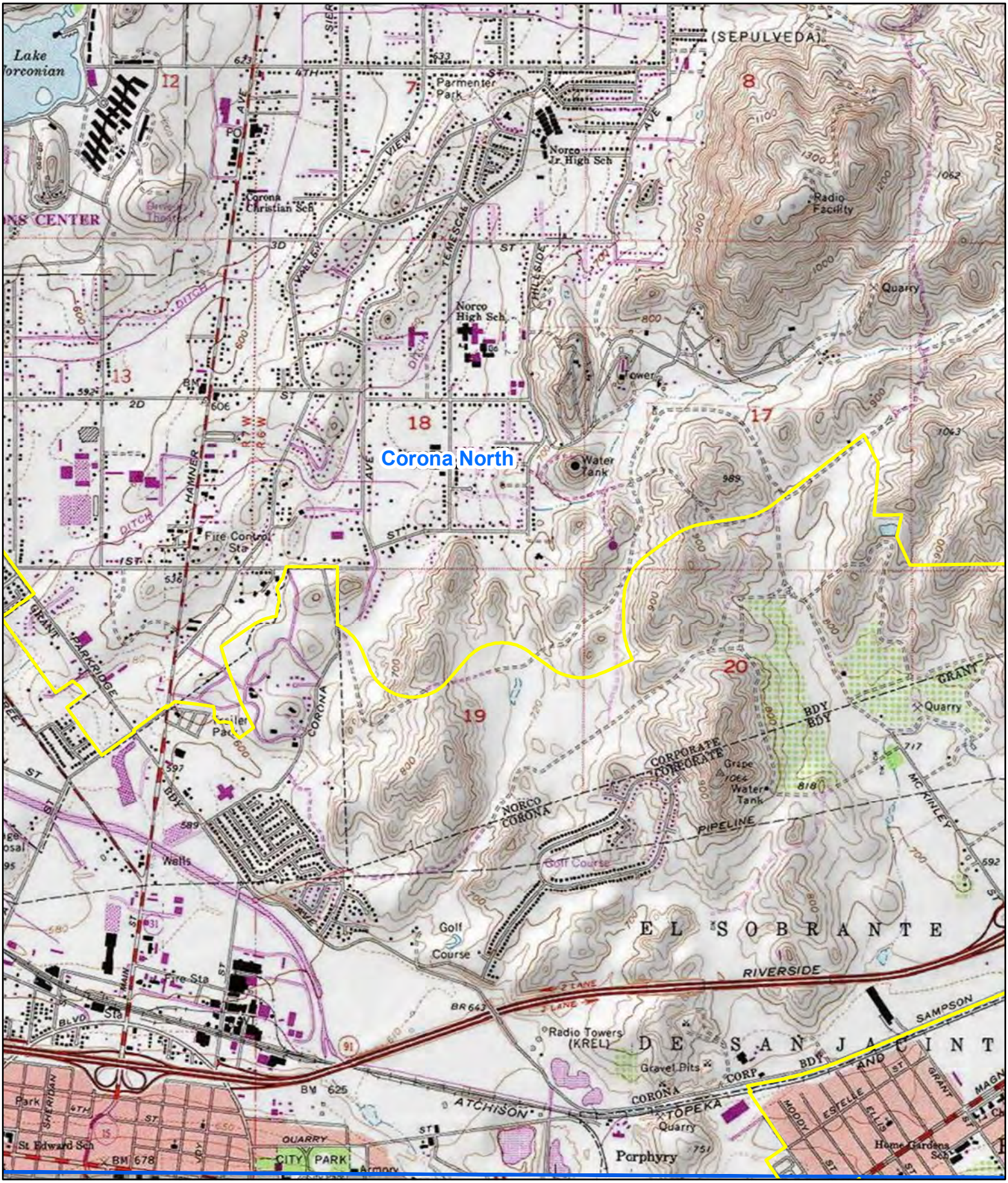
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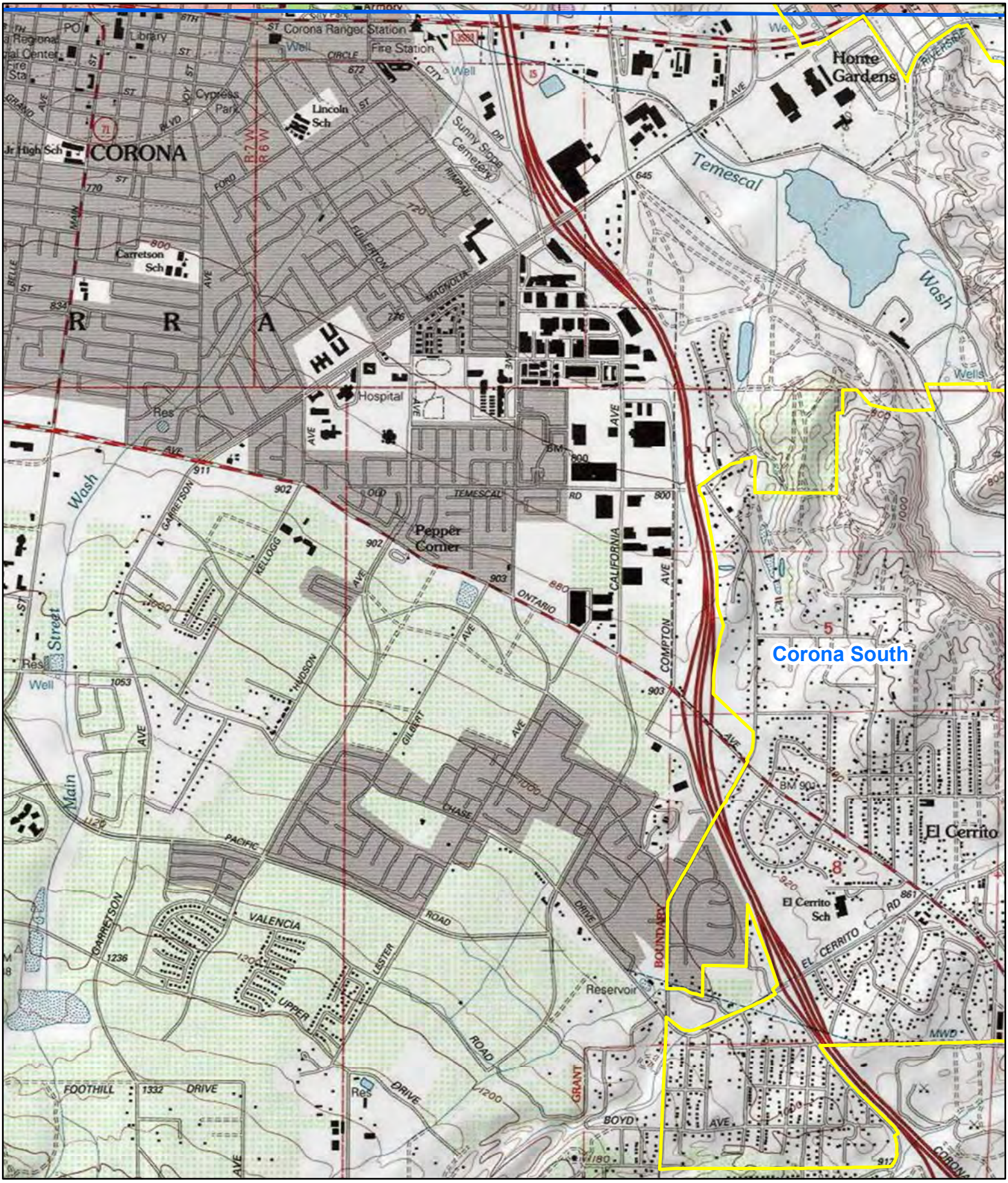


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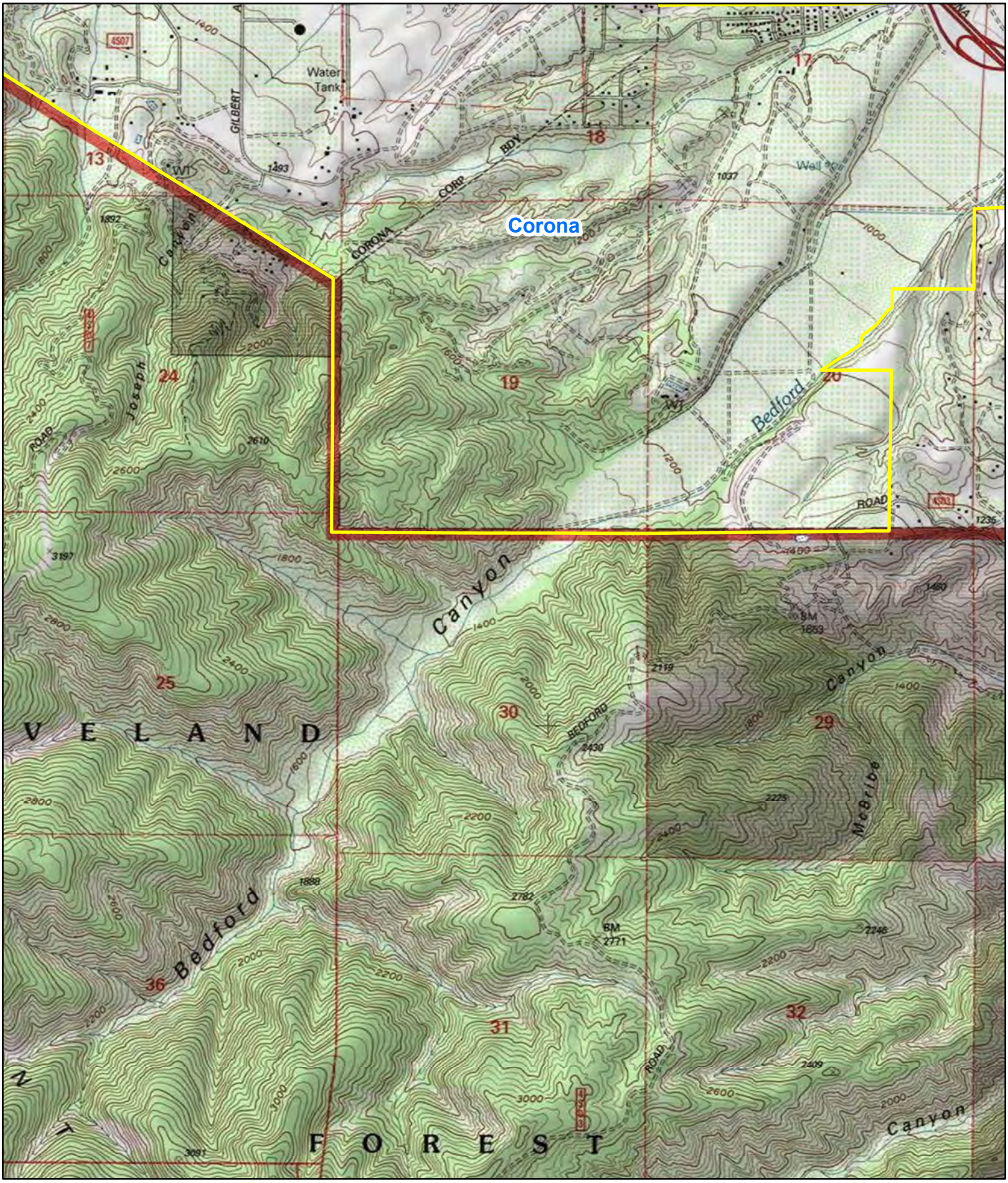


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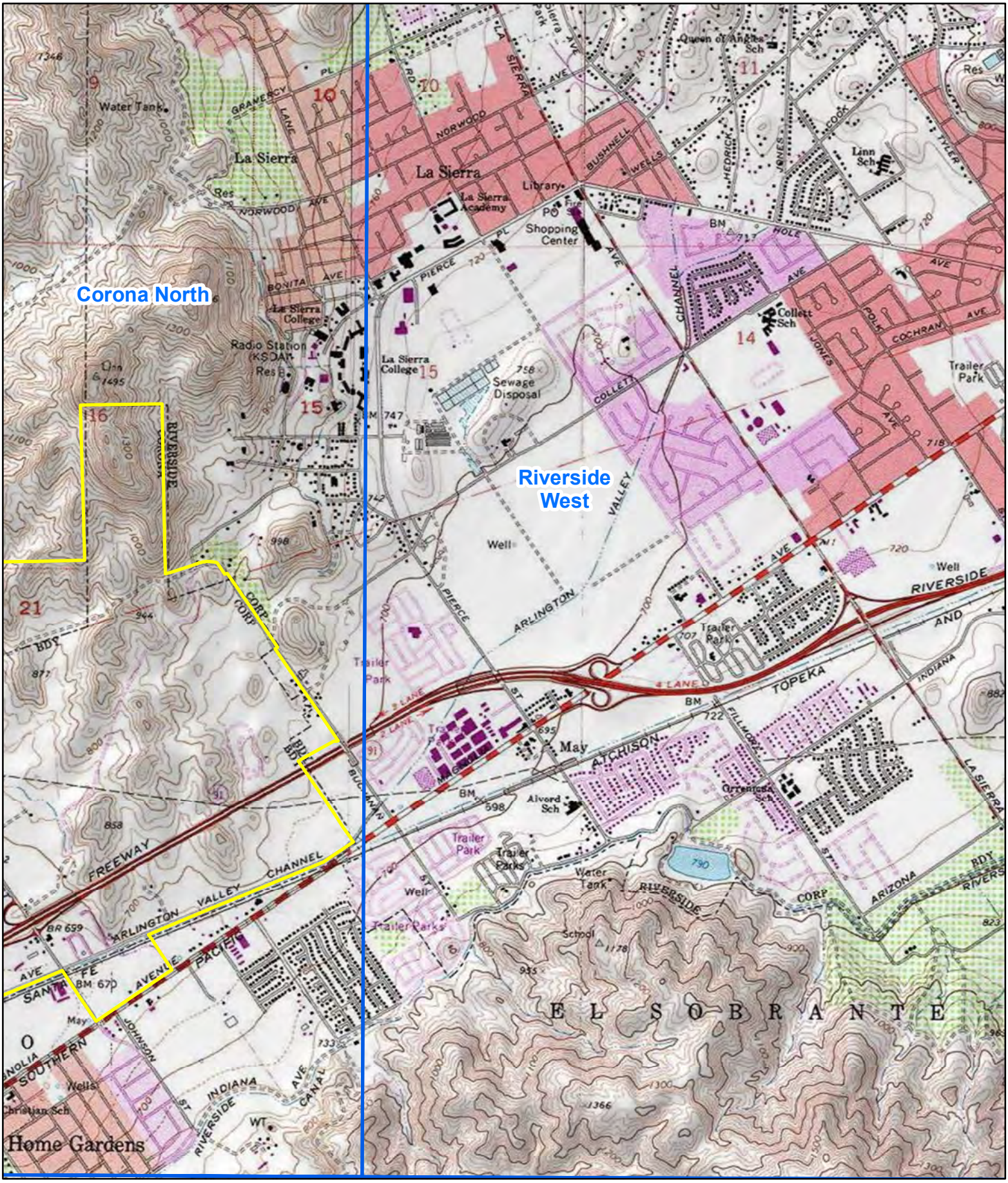


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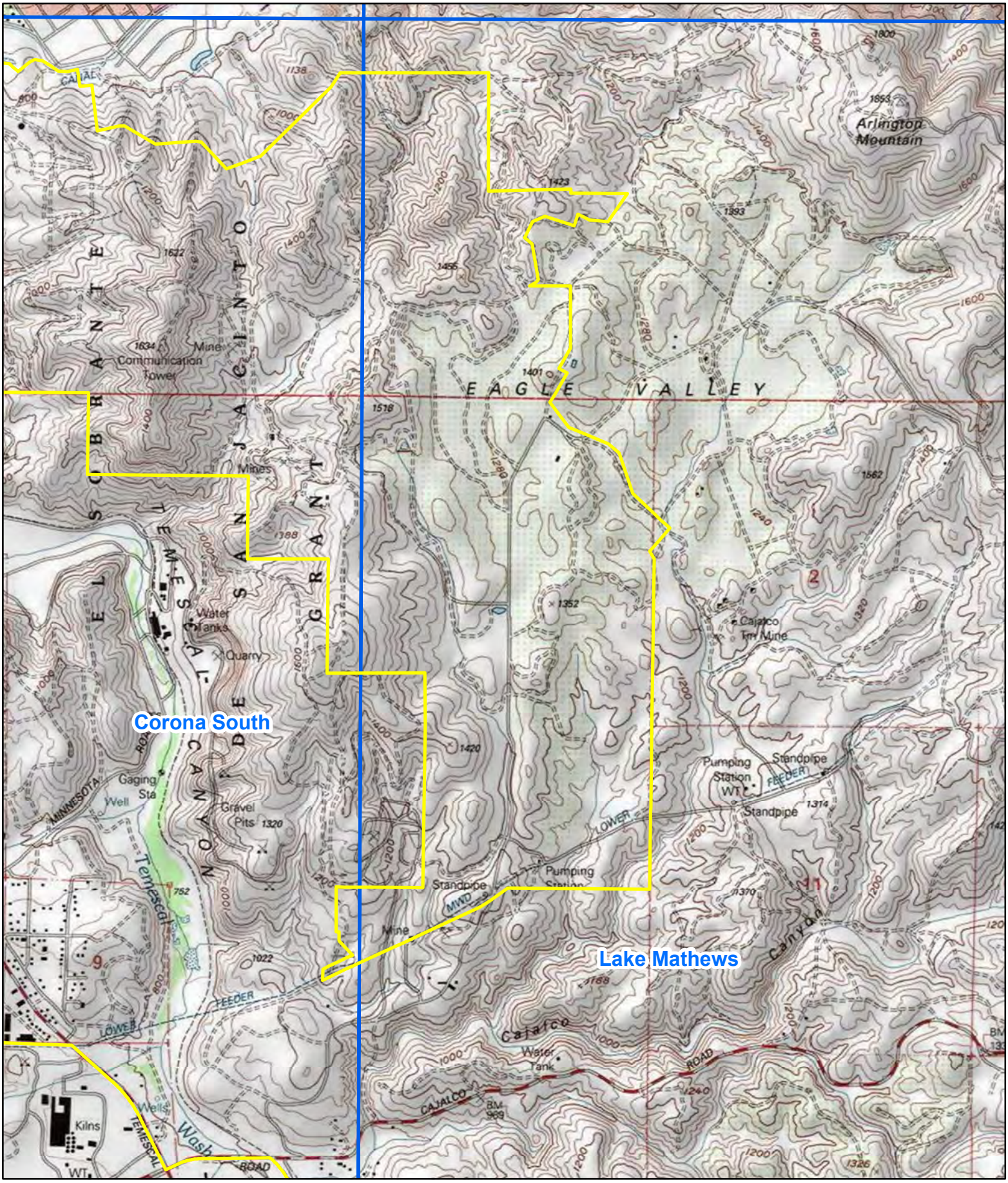
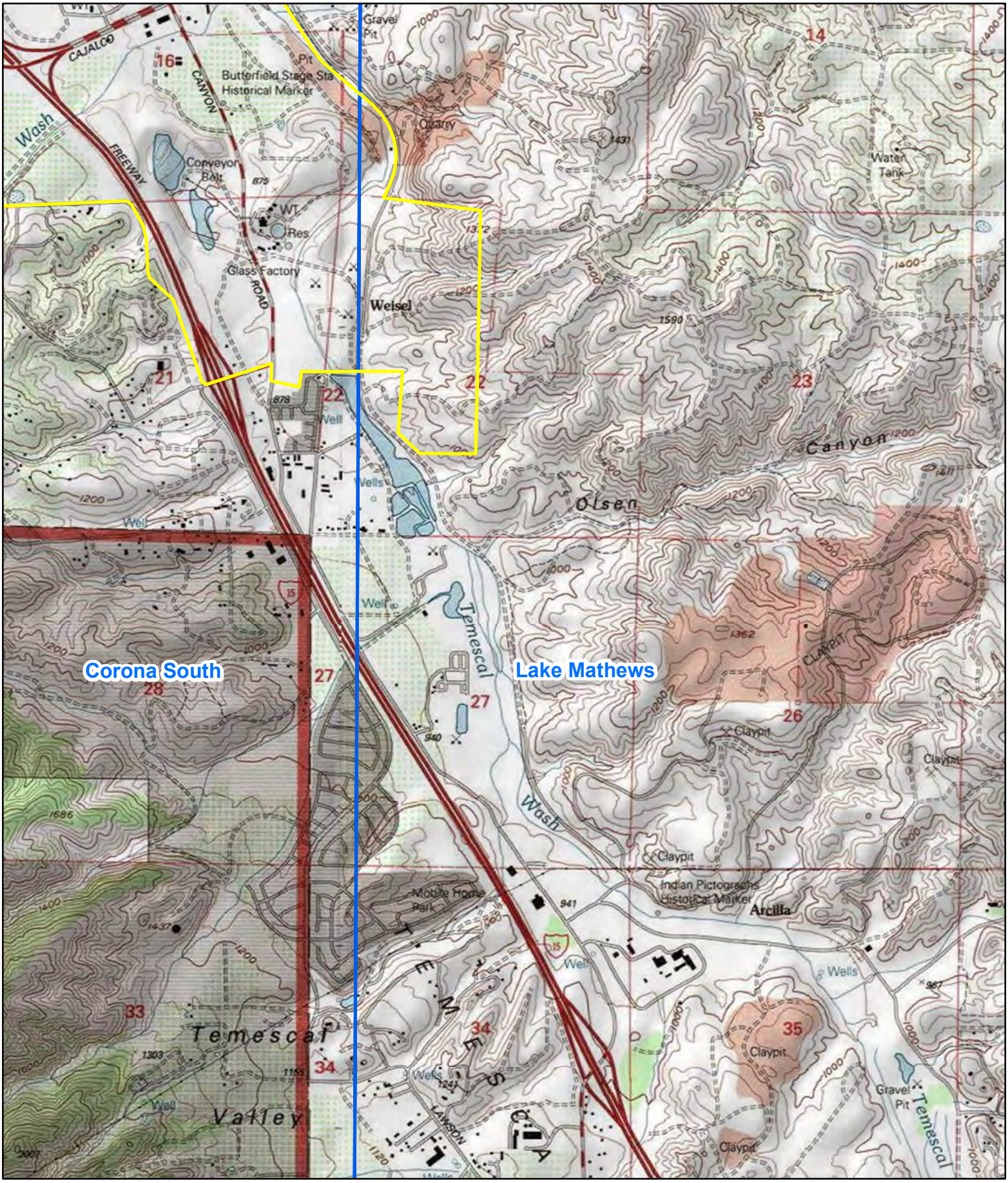


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RED TAIL ENVIRONMENTAL

RED TAIL ENVIRONMENTAL

April 6, 2020

Anthony Morales
Chairperson
Gabrieleno/Tongva San Bagriel Band of Mission Indians
PO Box 693, San Gabriel, CA, 91778
626-483-3564
GTTribalcouncil@aol.com

Re: City of Corona Reclaimed Water Project, Riverside County, California

Dear Mr. Morales,

Red Tail Environmental (Red Tail) is conducting an archaeological study for the City of Corona Reclaimed Water Project (project), located within the City of Corona, Riverside County, California. The project area includes the entire City of Corona and the city's sphere of influence. The project is subject to the California Environmental Quality Act (CEQA) and will assess the environmental impact of the City of Corona's Reclaimed Water Master Plan. The City of Corona is the lead agency. The project area is shown on the following USGS 7.5' Quad Maps:

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We are contacting you to request additional information regarding the Project area, if you are aware of any issues of cultural concern regarding the area shown on the enclosed map. In particular, we would like to know if you have knowledge of any Traditional Cultural Properties, Sacred Sites, Tribal Cultural Resources, resource collecting areas, or any other areas of concern of which you would wish us to be aware. If you have any questions or concerns regarding the proposed Project, please contact me at the address or phone number listed below, or via email at Shelby@redtailenvironmental.com. We appreciate any input you may have on this project.

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Shelby Castells, M.A., RPA
Director of Archaeology
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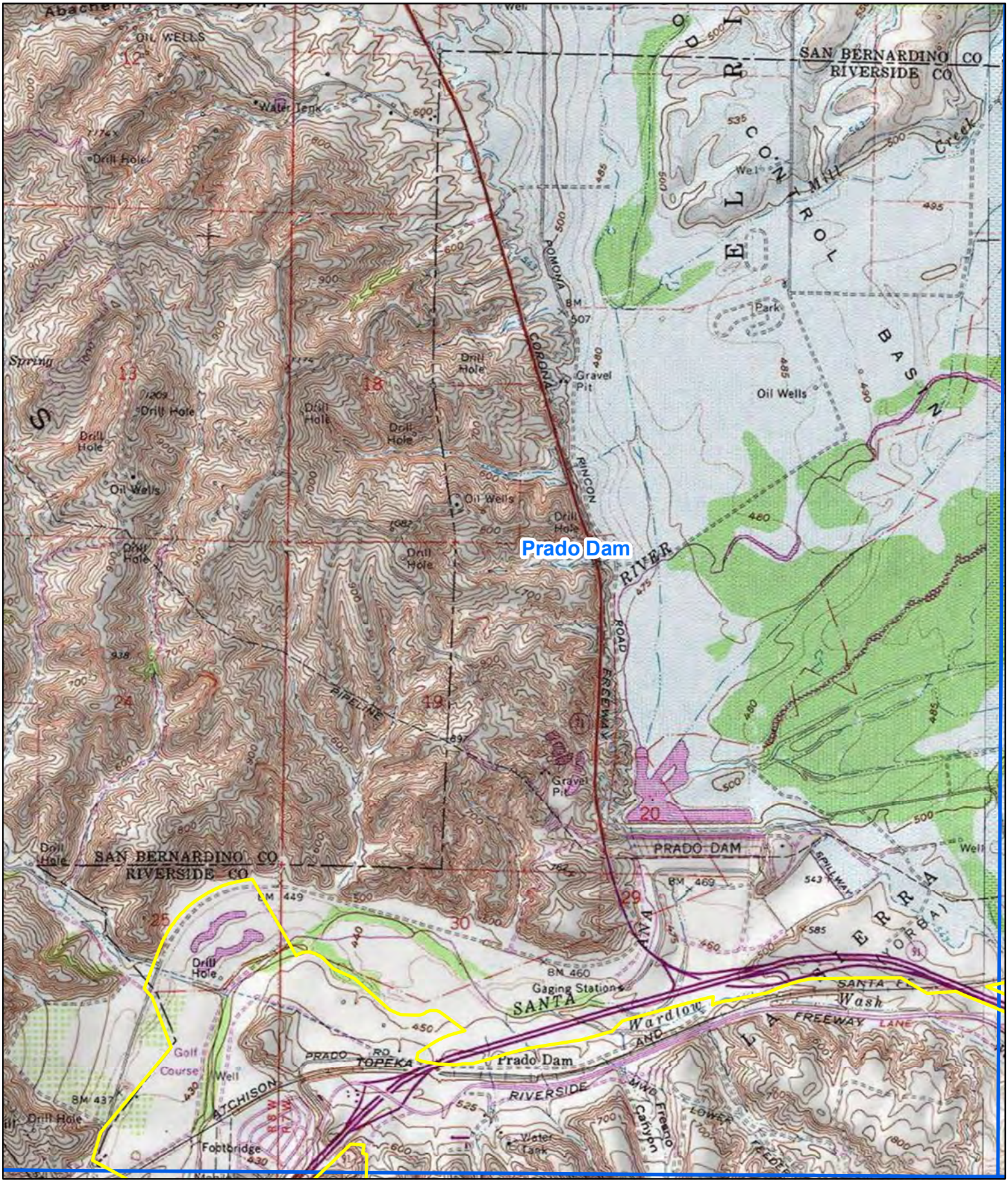


Figure 1. Project Area

RED TAIL ENVIRONMENTAL



Figure 1. Project Area



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Legend

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RED TAIL ENVIRONMENTAL



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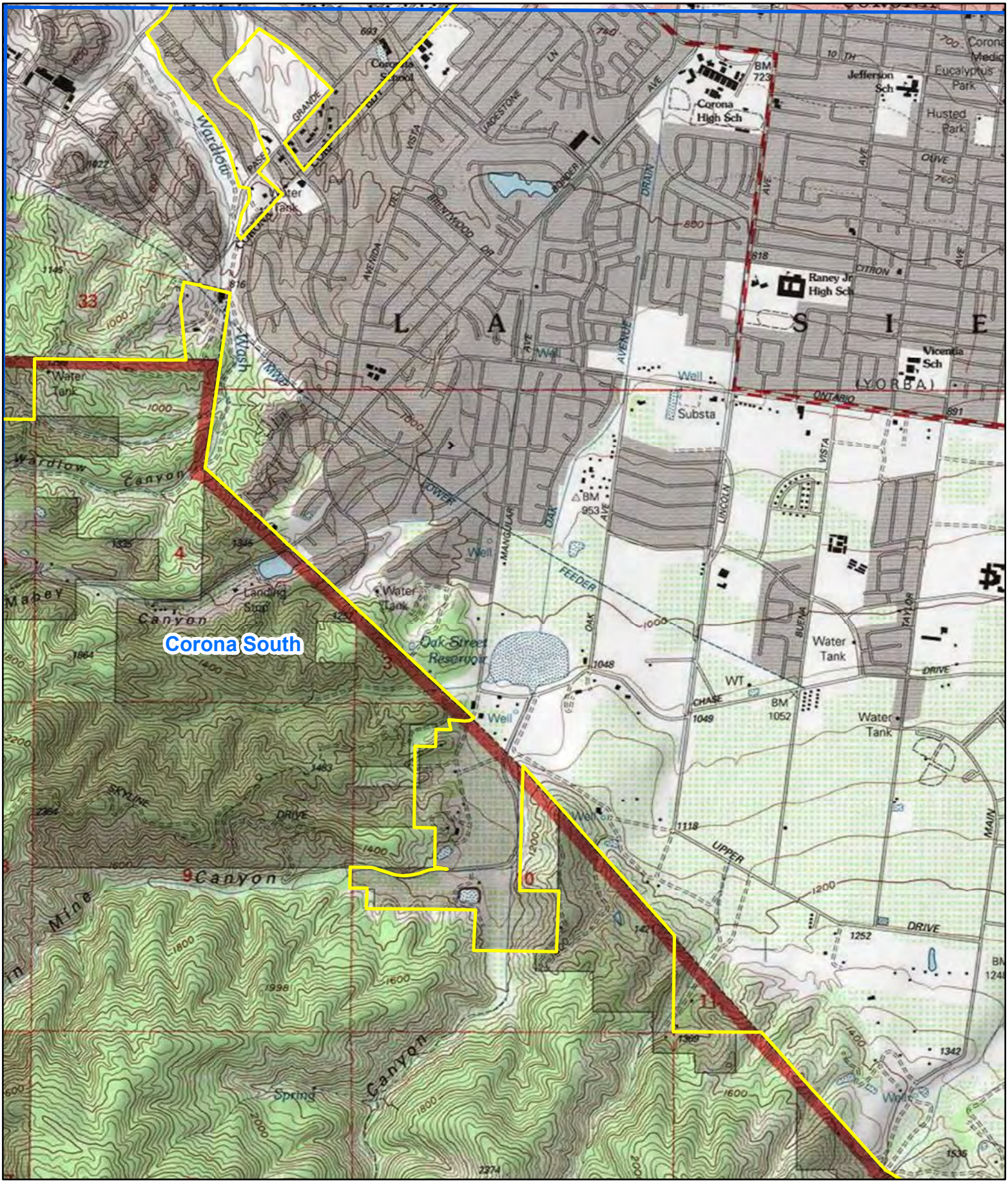


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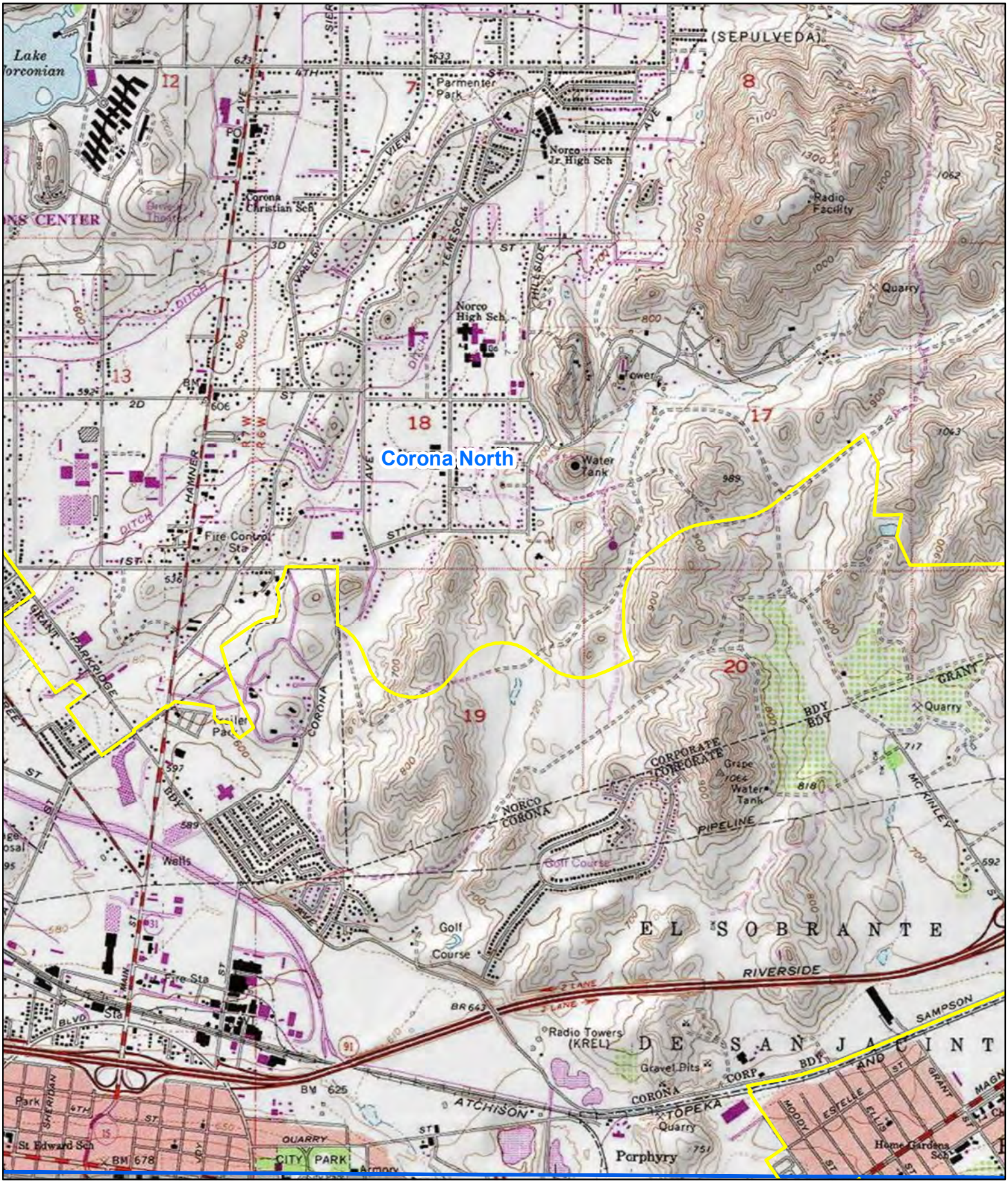
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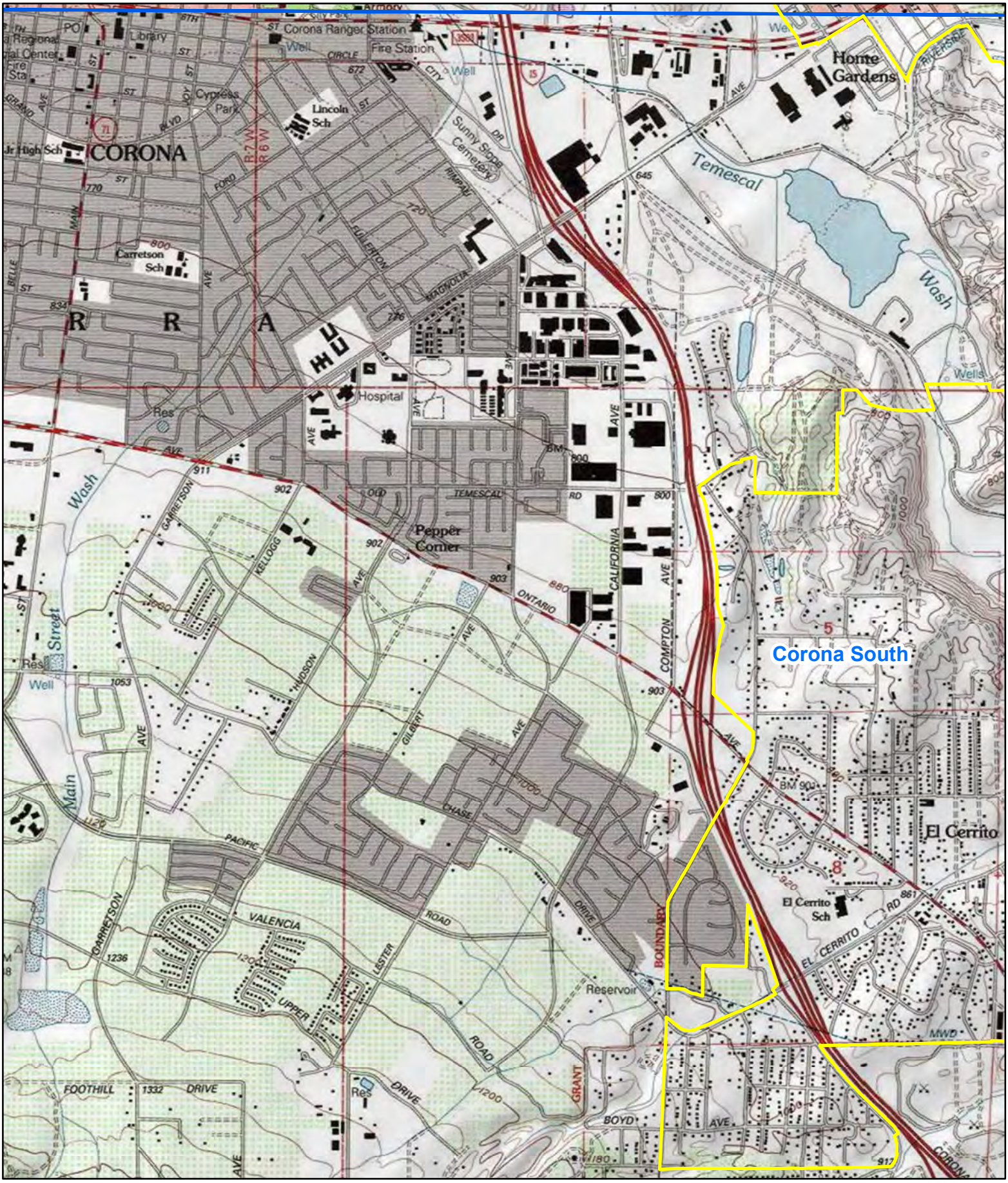


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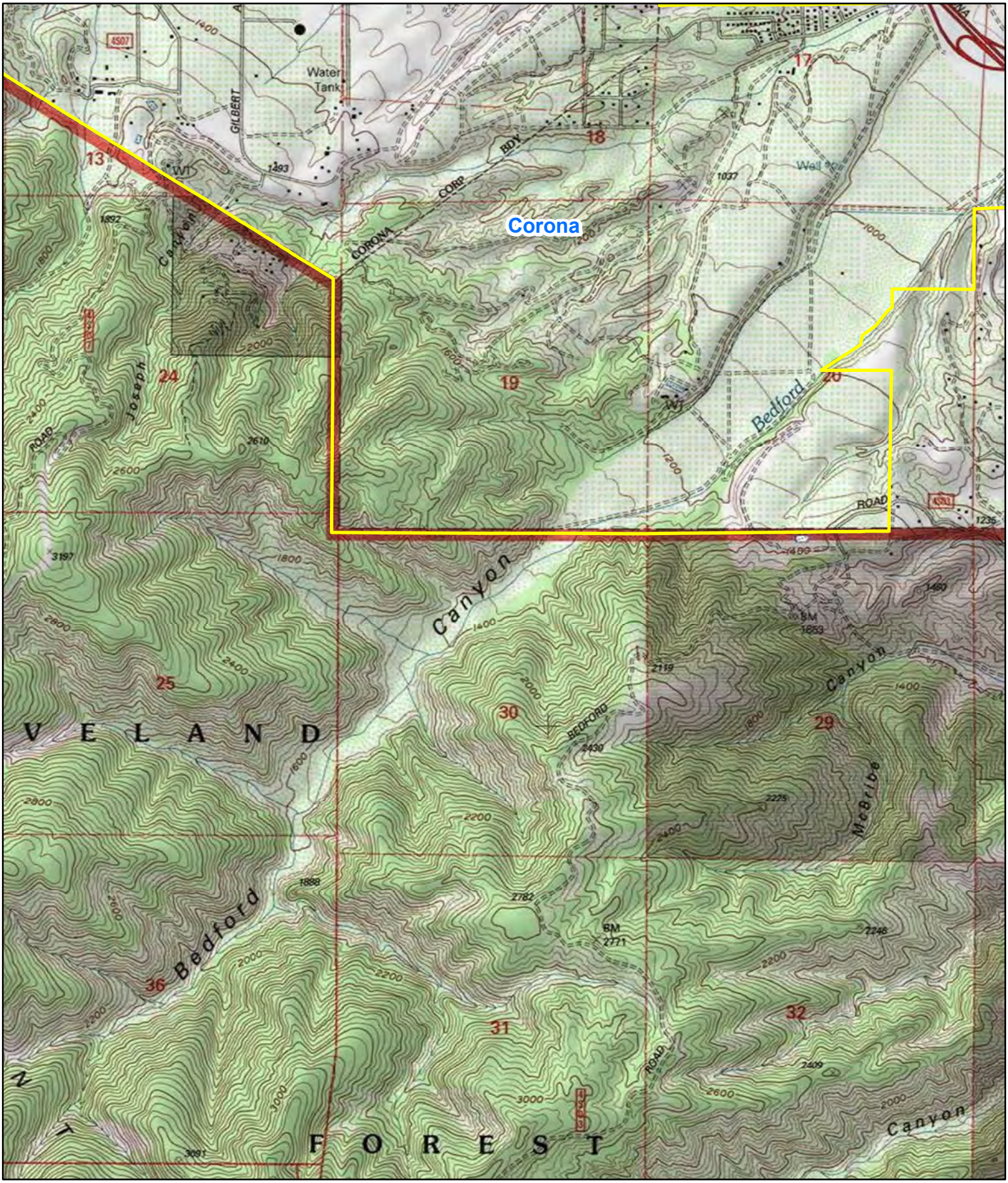
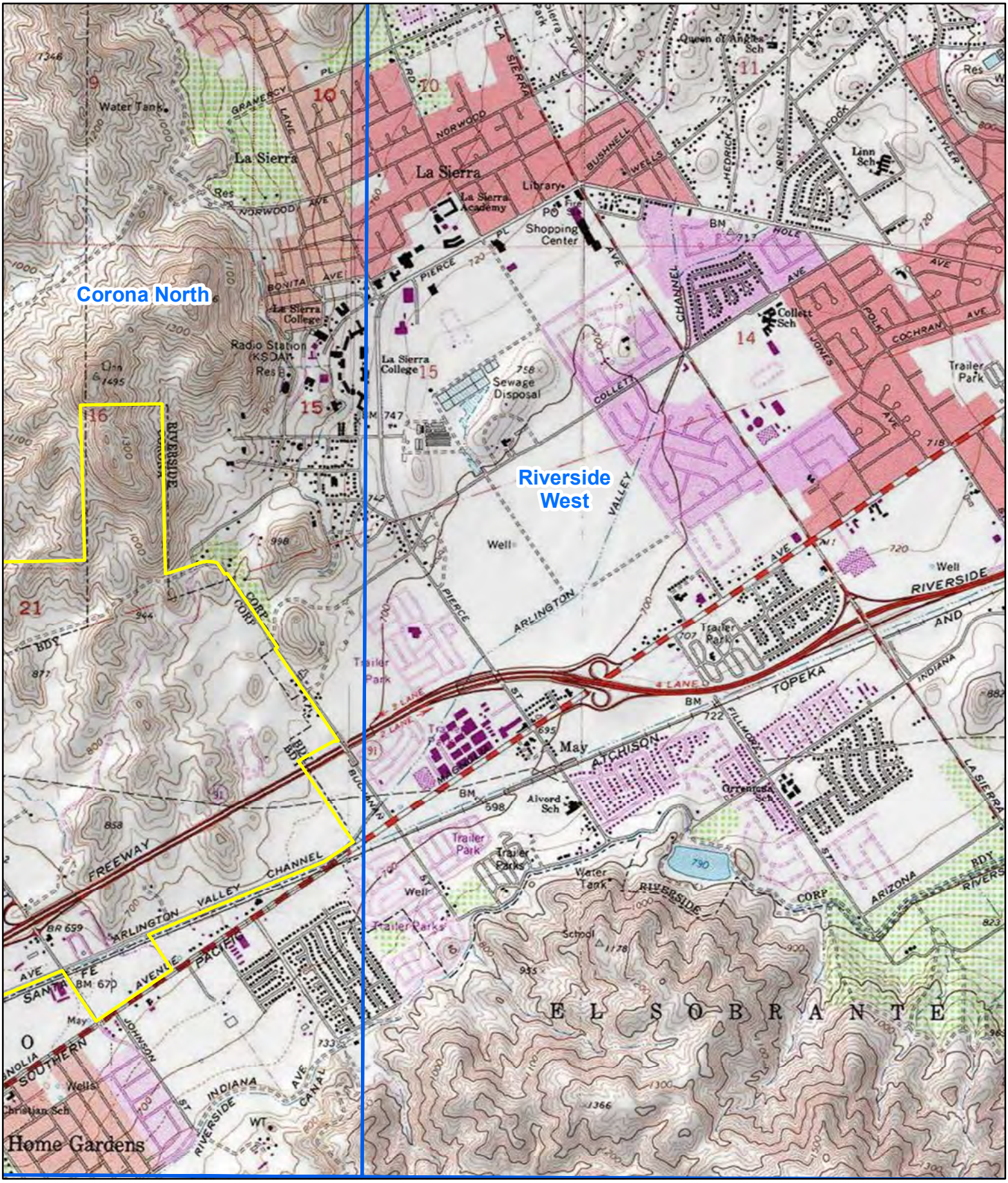


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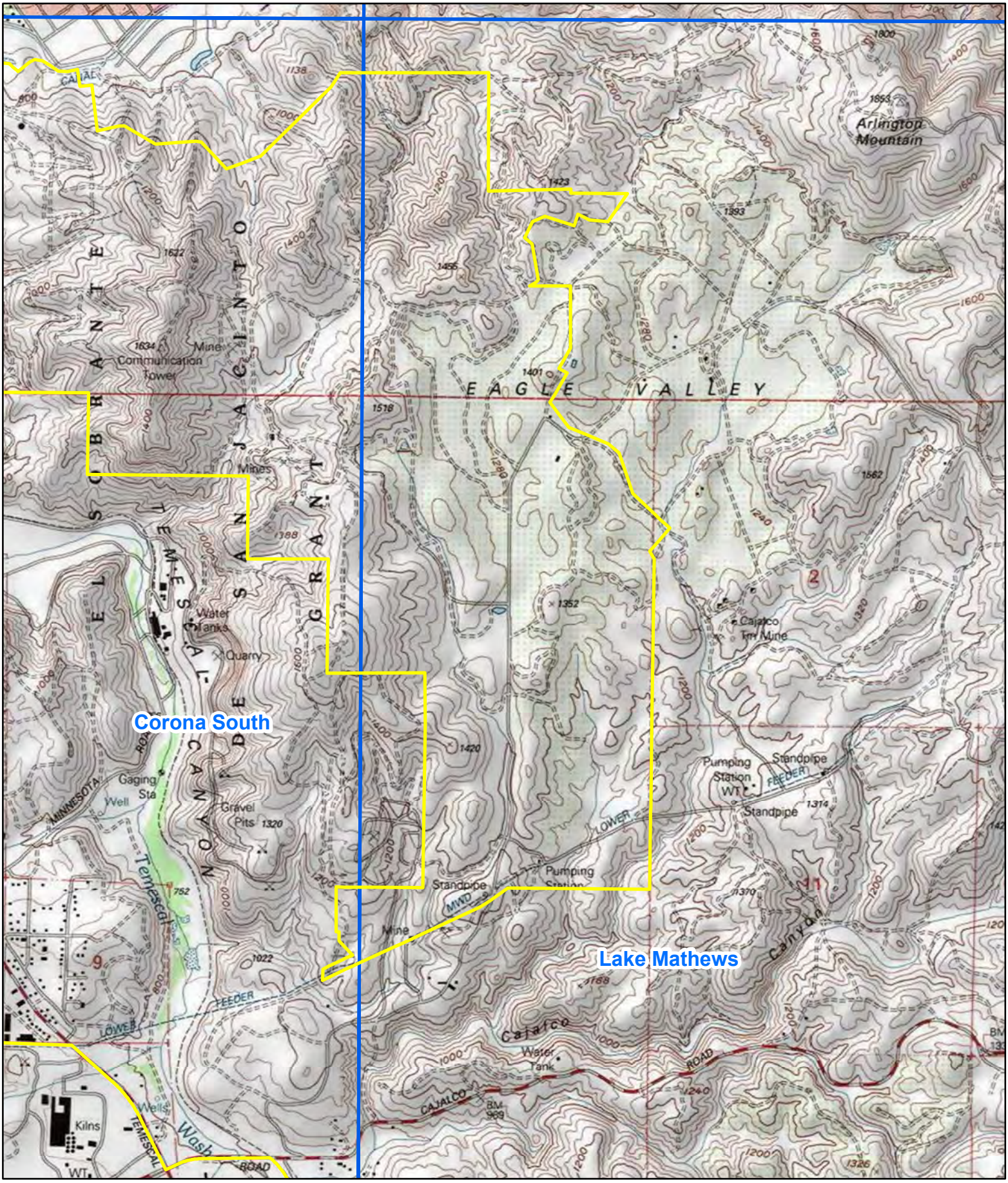
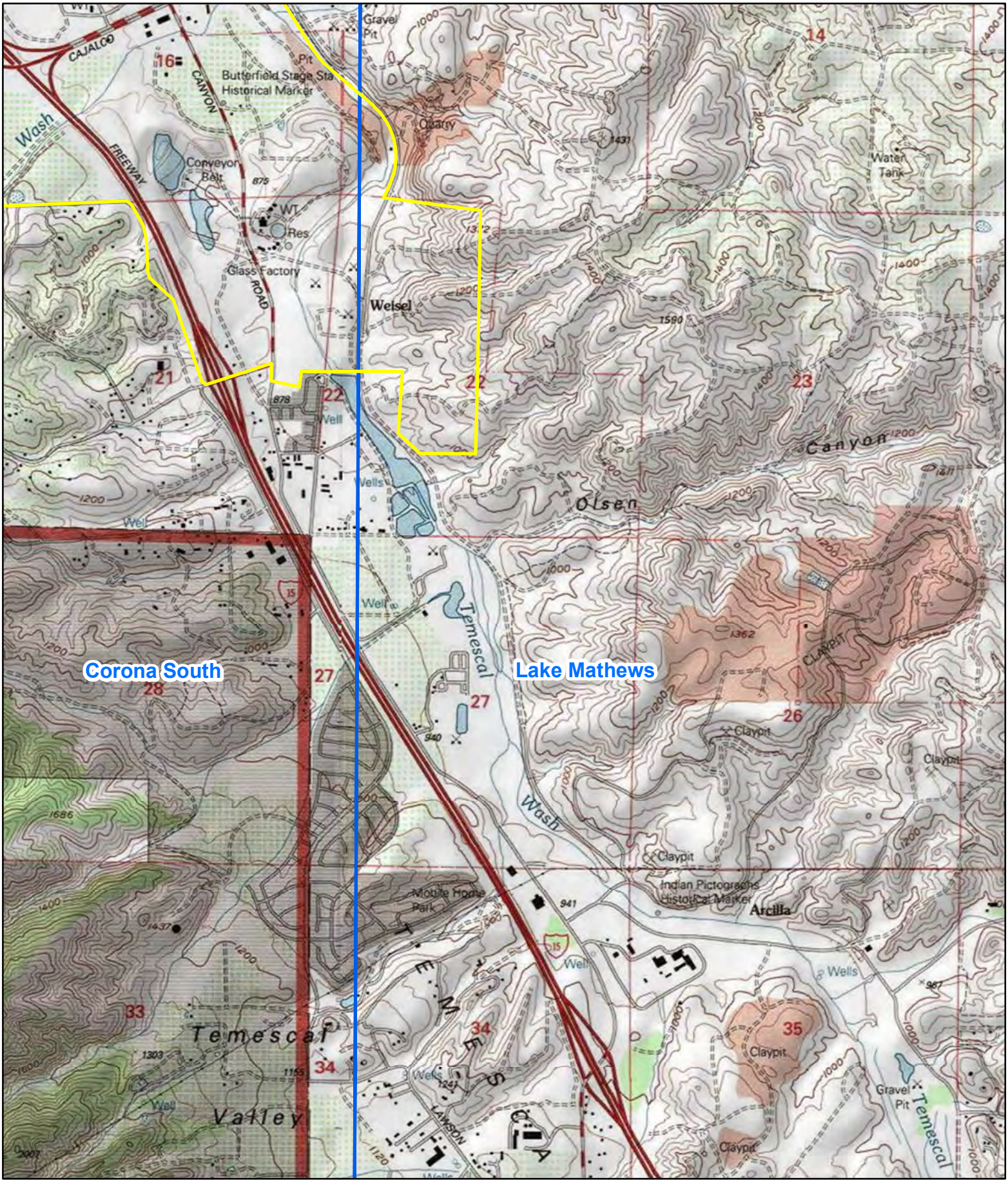


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RED TAIL ENVIRONMENTAL

RED TAIL ENVIRONMENTAL

April 6, 2020

Andrew Salas
Chairperson
Gabrieleno Band of Mission Indians - Kizh Nation
PO Box 393, Covina, CA, 91723
626-926-4131
admin@gabrielenoindians.org

Re: City of Corona Reclaimed Water Project, Riverside County, California

Dear Mr. Salas,

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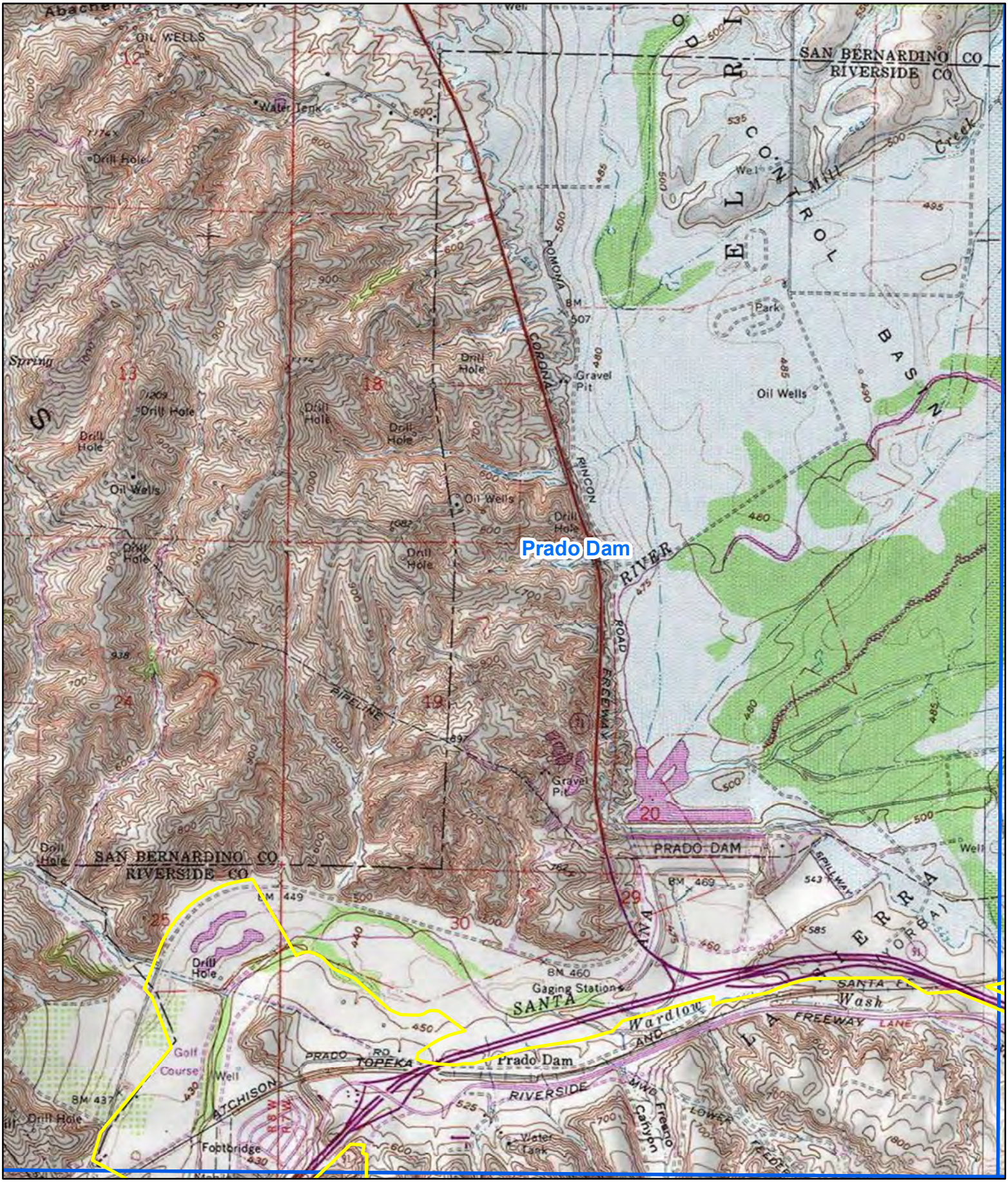


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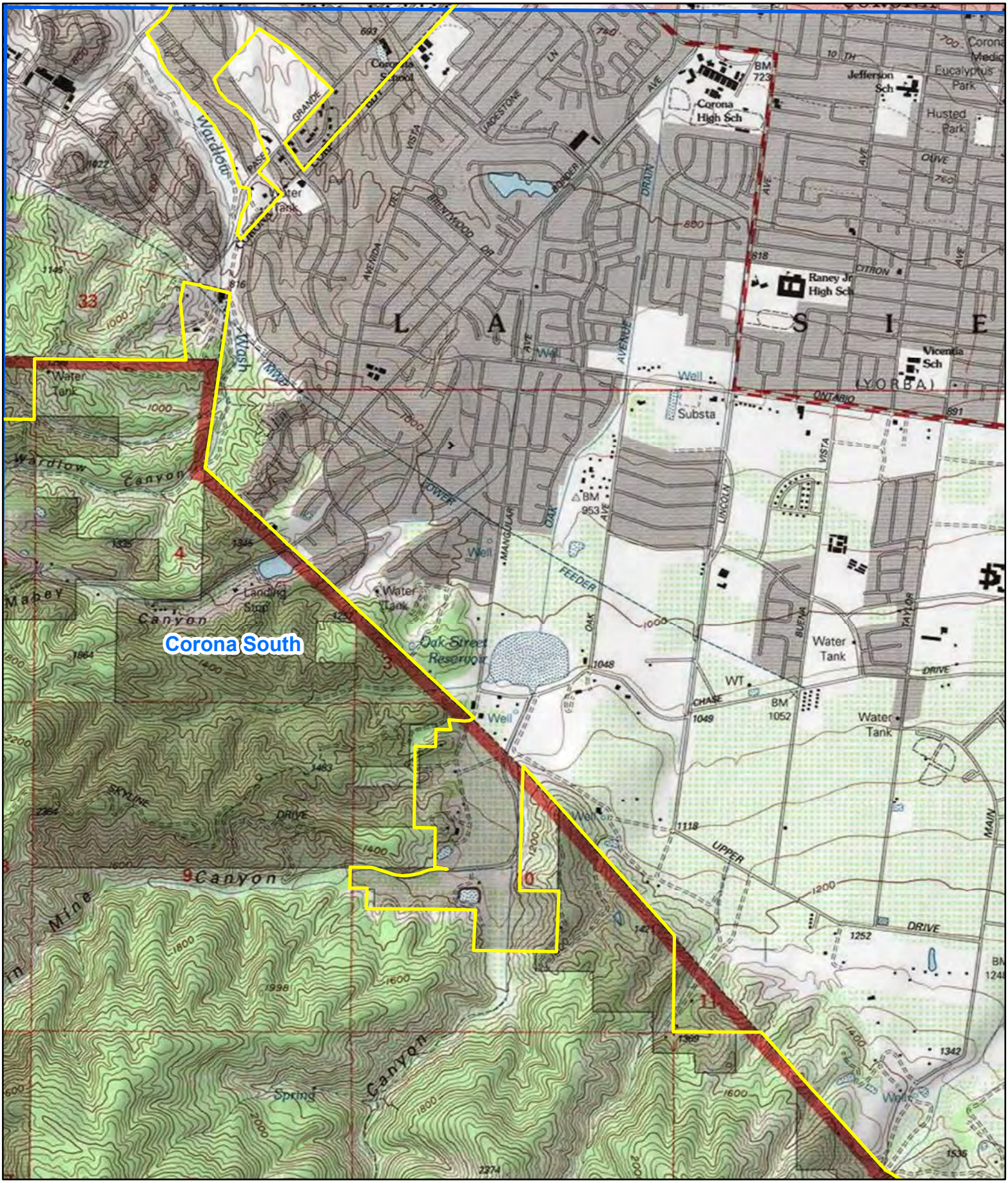


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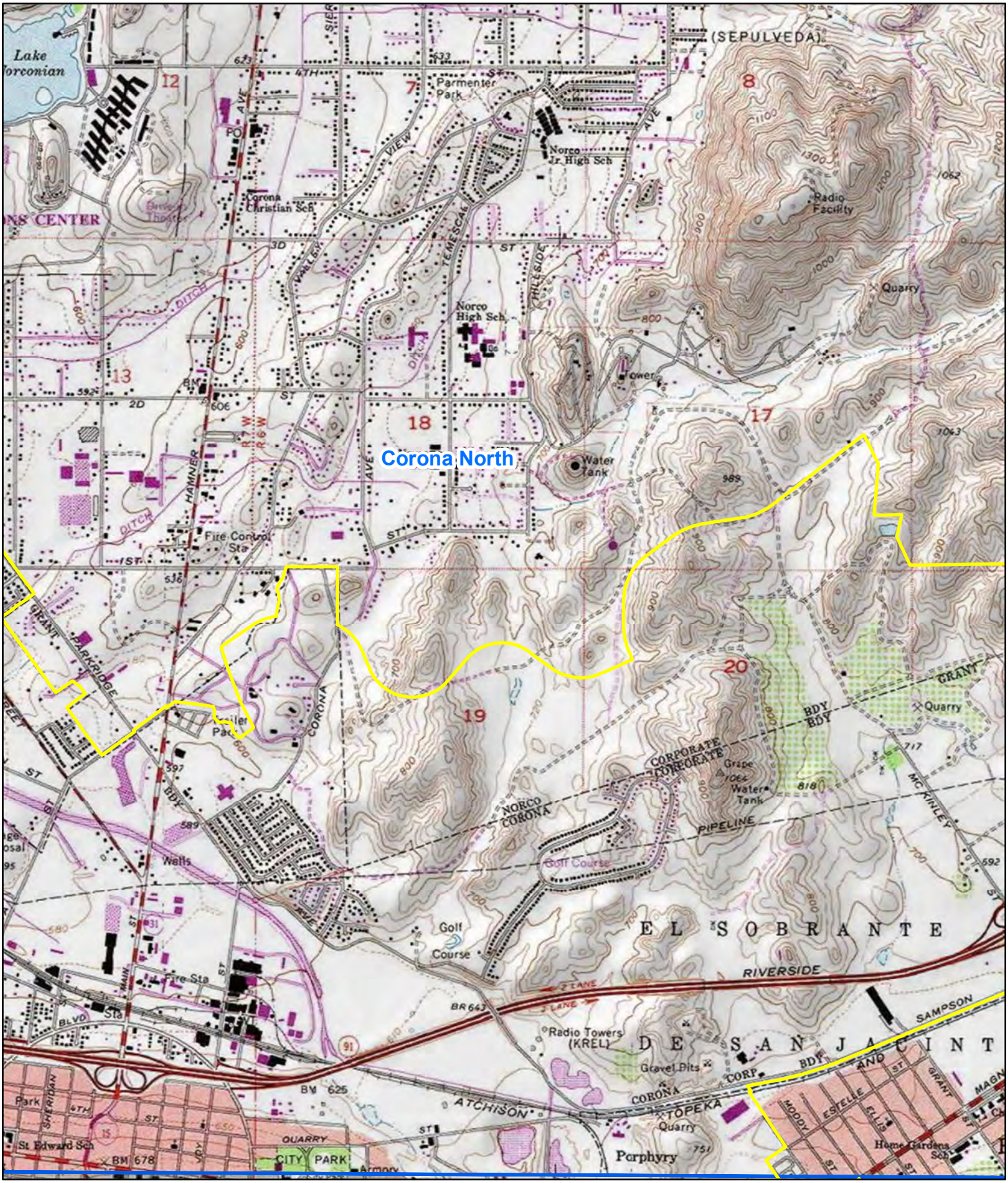
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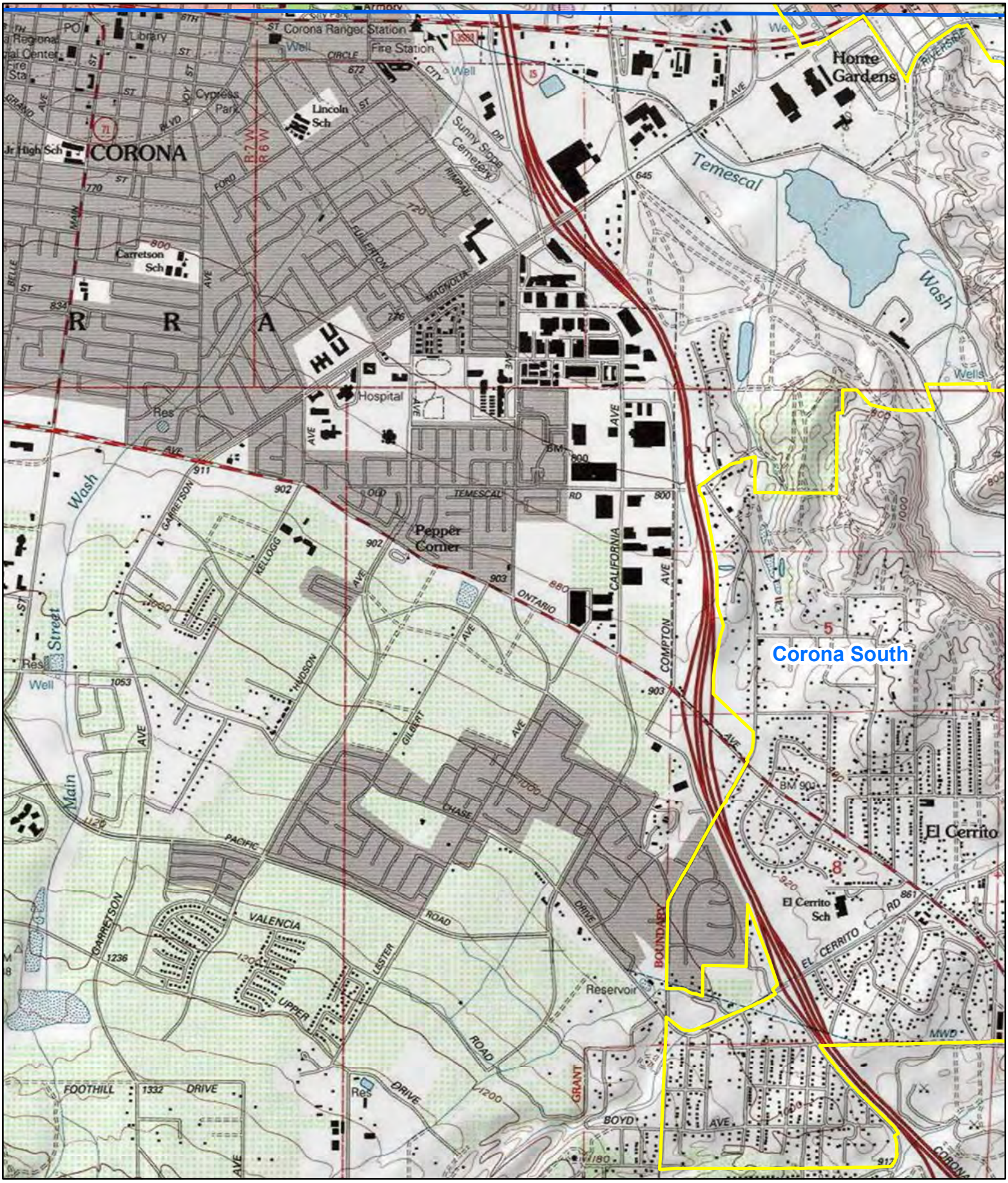


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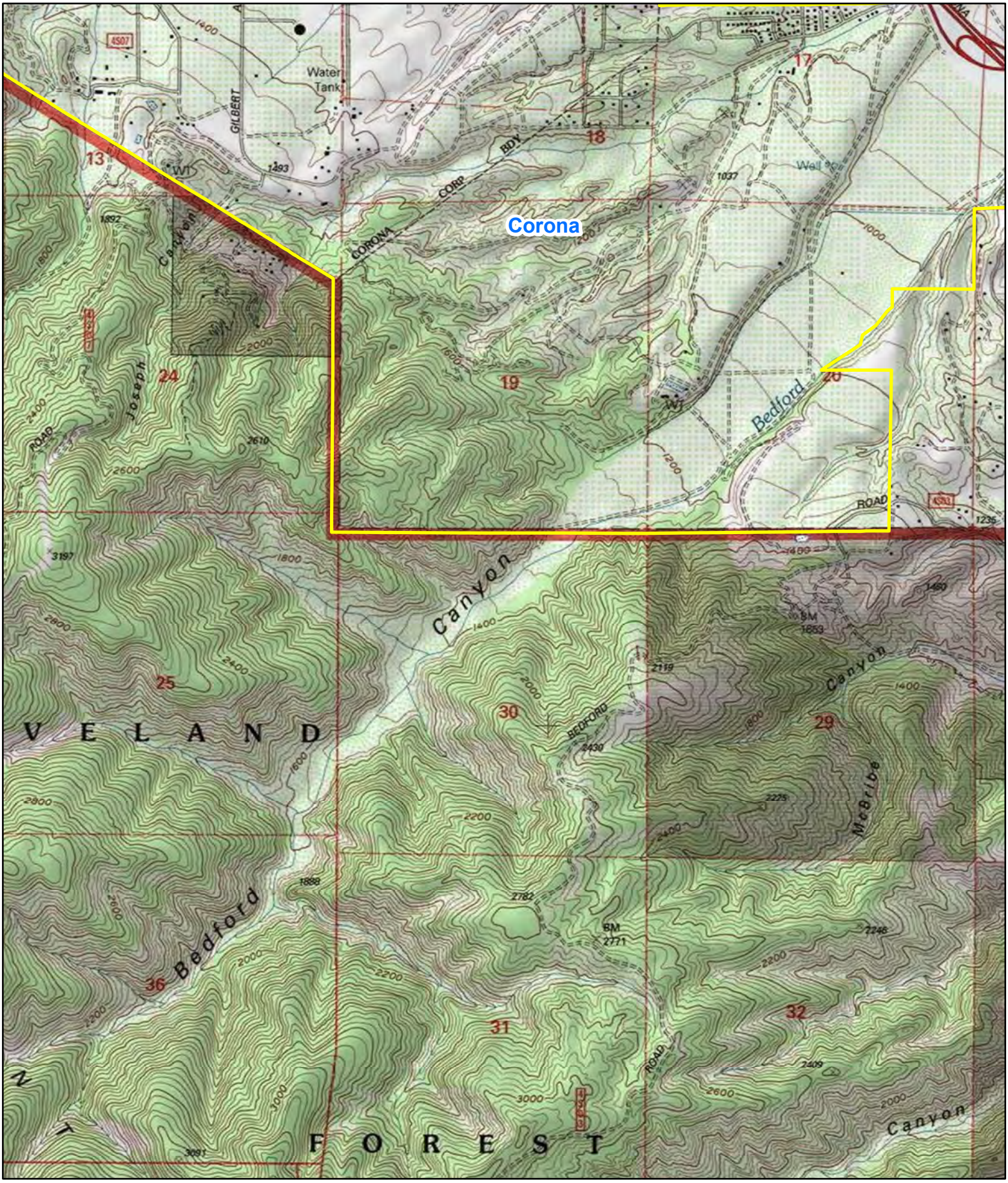
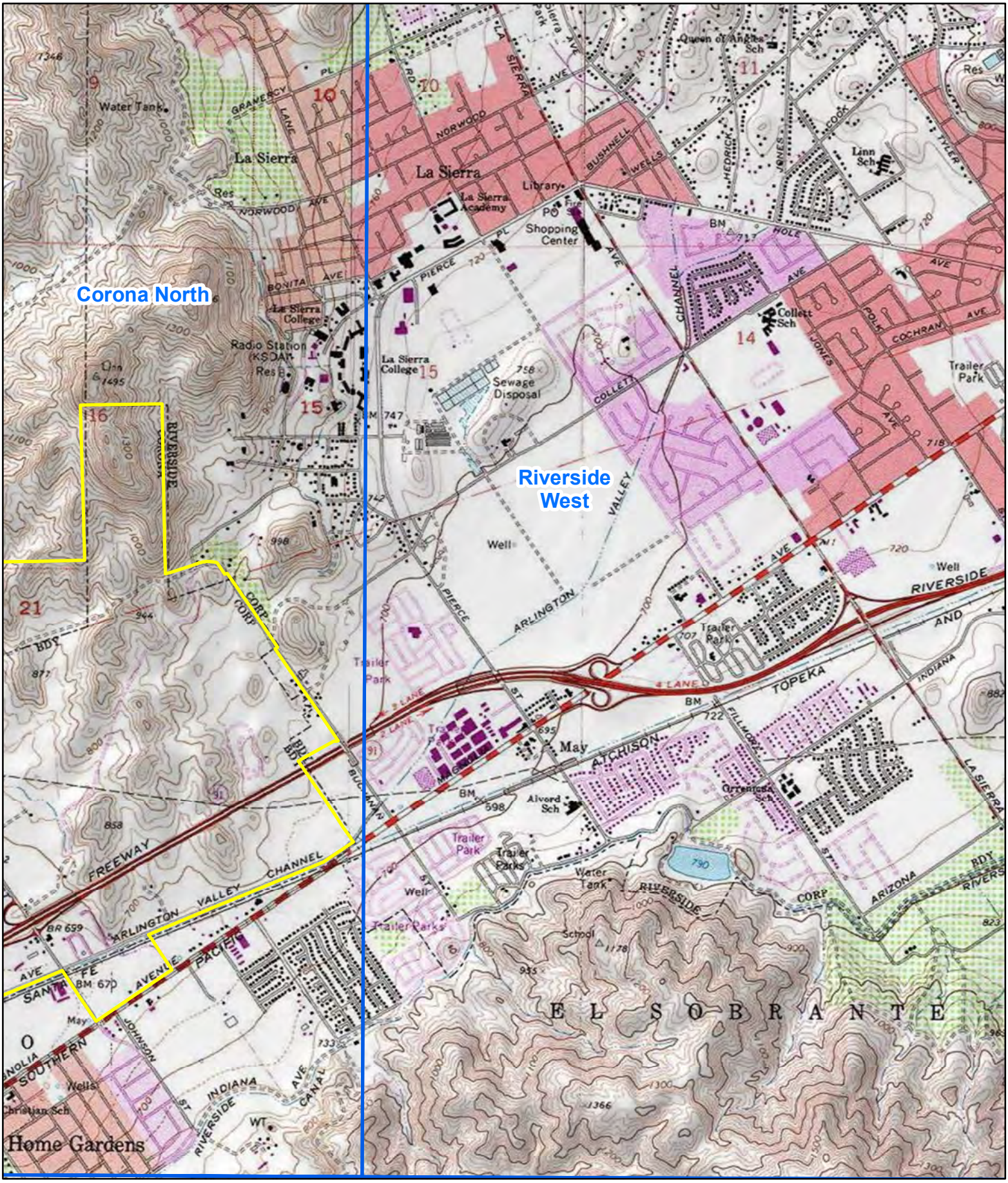


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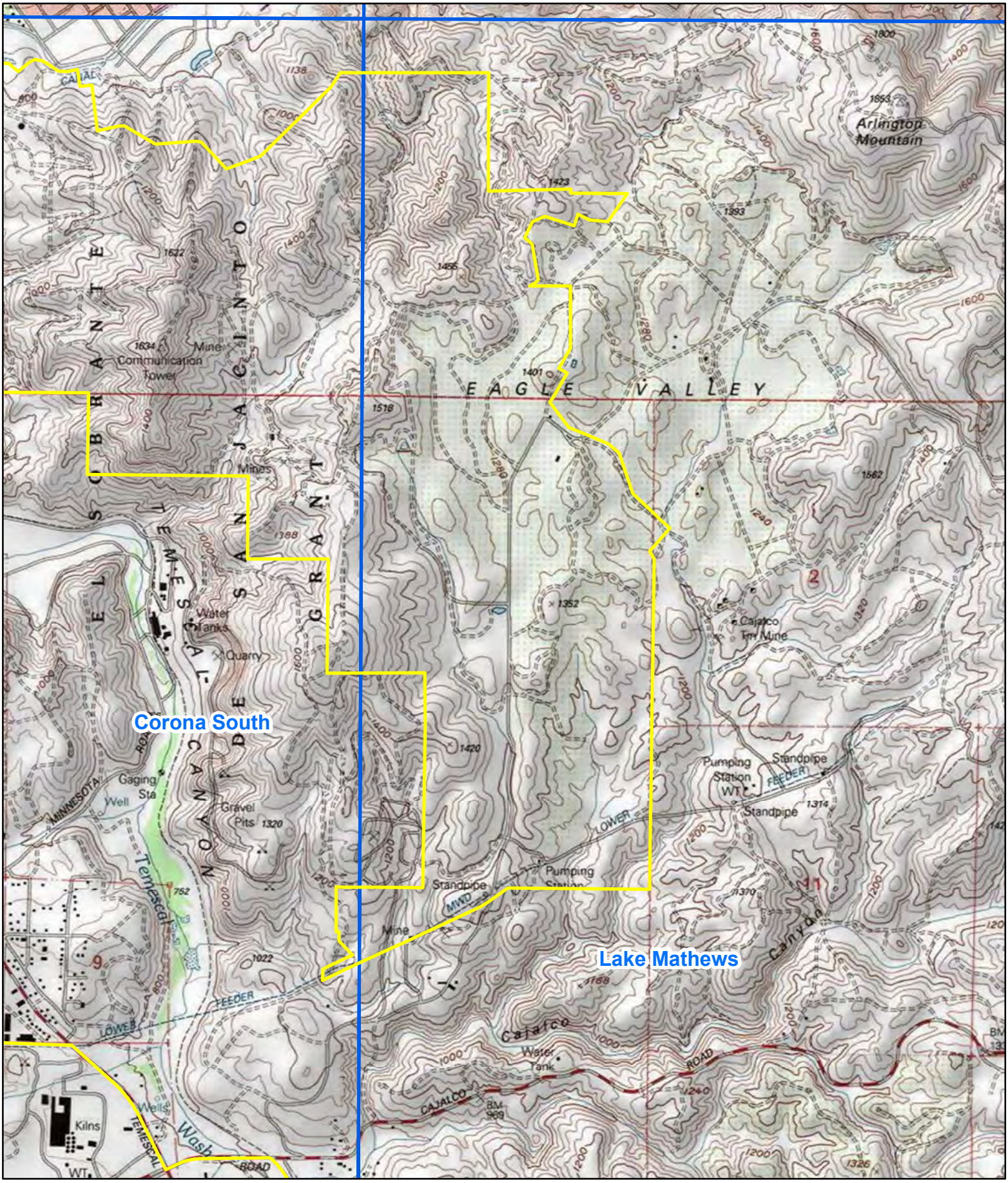
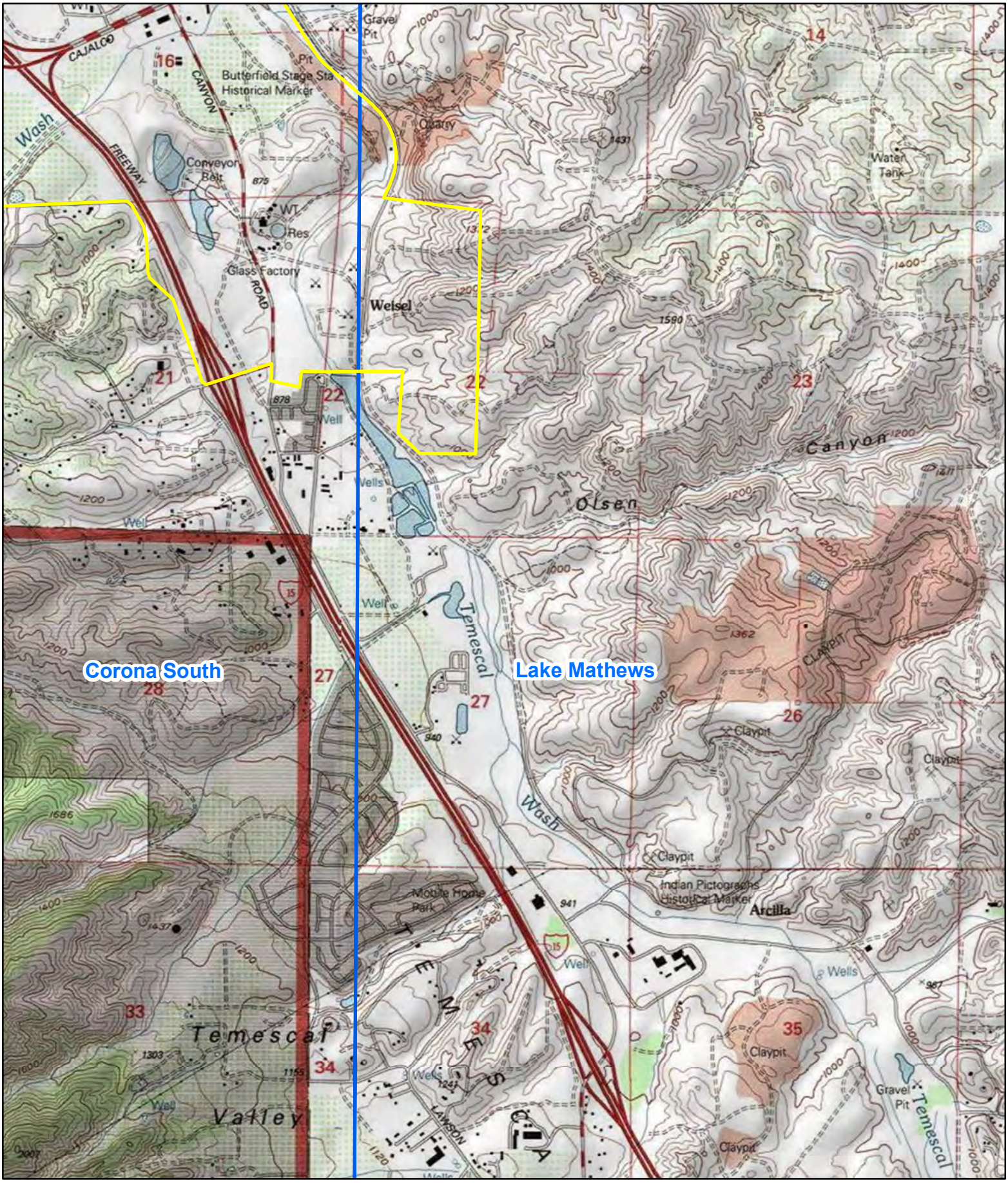


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RED TAIL ENVIRONMENTAL

RED TAIL ENVIRONMENTAL

April 6, 2020

Amanda Vance
Chairperson
Augustine Band of Cahuilla Mission Indians
PO Box 846, Coachella, CA, 92236
760-398-4722
hhaines@augustinetribe.com

Re: City of Corona Reclaimed Water Project, Riverside County, California

Dear Ms. Vance,

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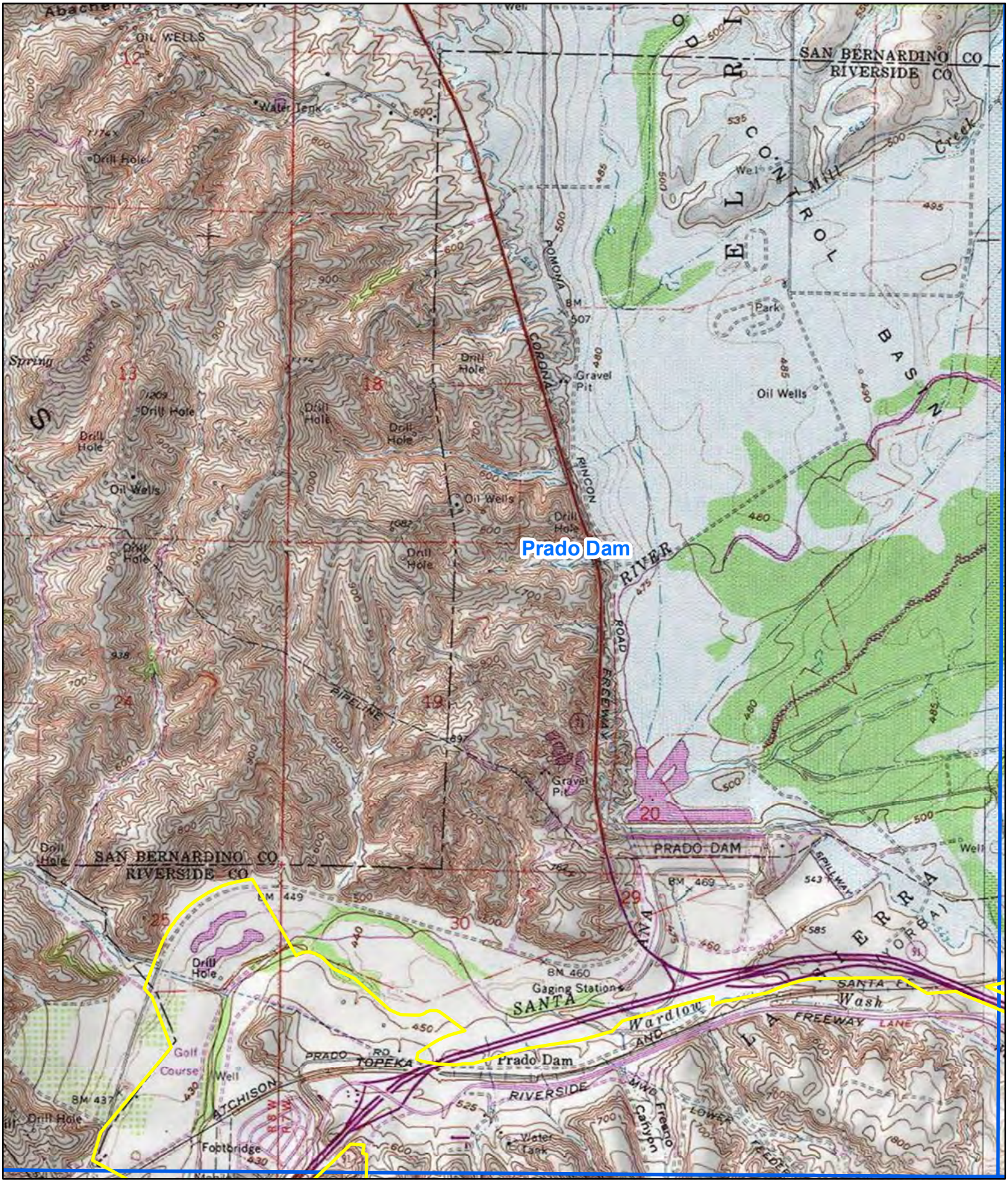


Figure 1. Project Area

RED TAIL ENVIRONMENTAL



Figure 1. Project Area



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Legend

- Project Area
- 7.5' USGS Quads

RED TAIL ENVIRONMENTAL



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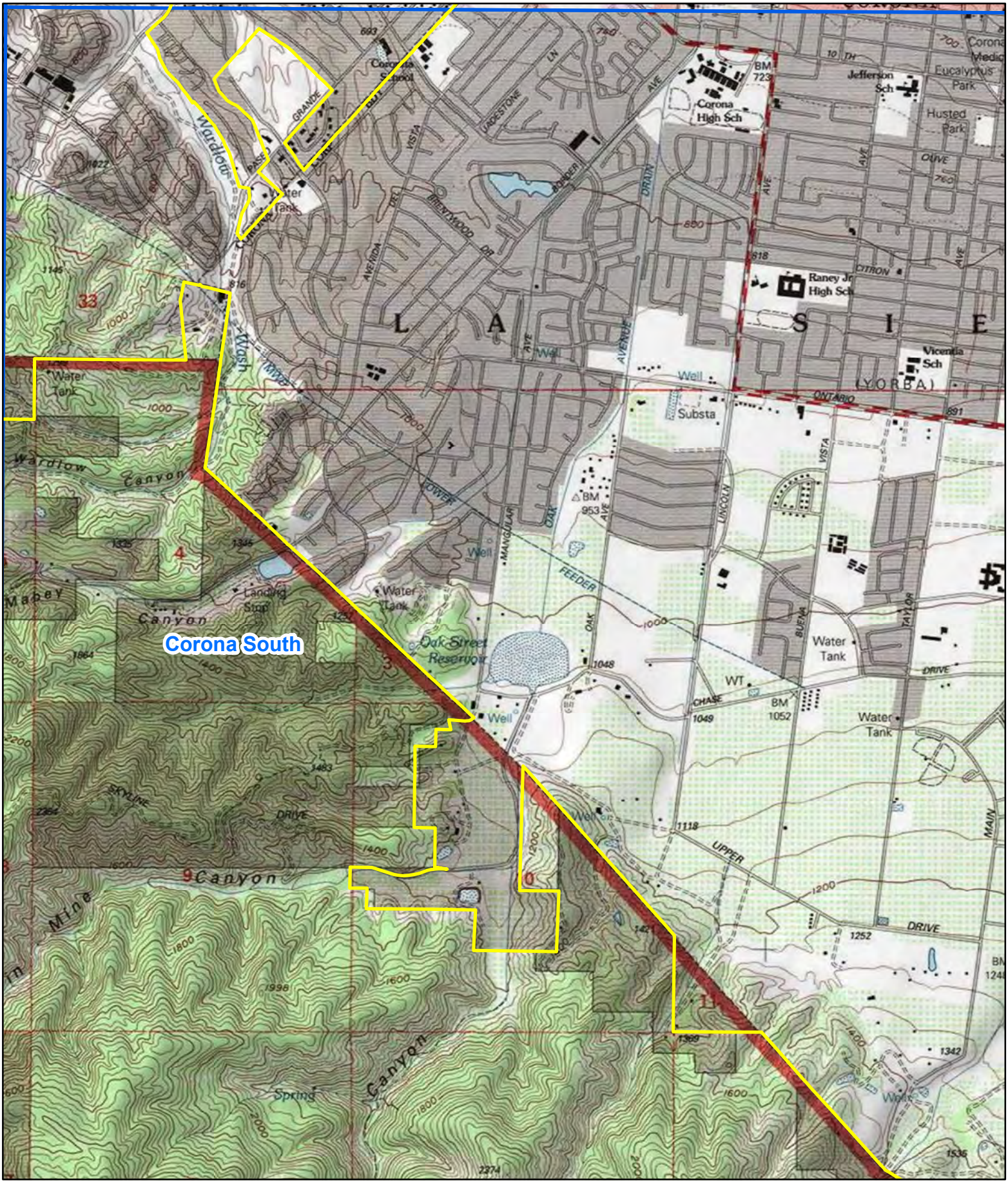


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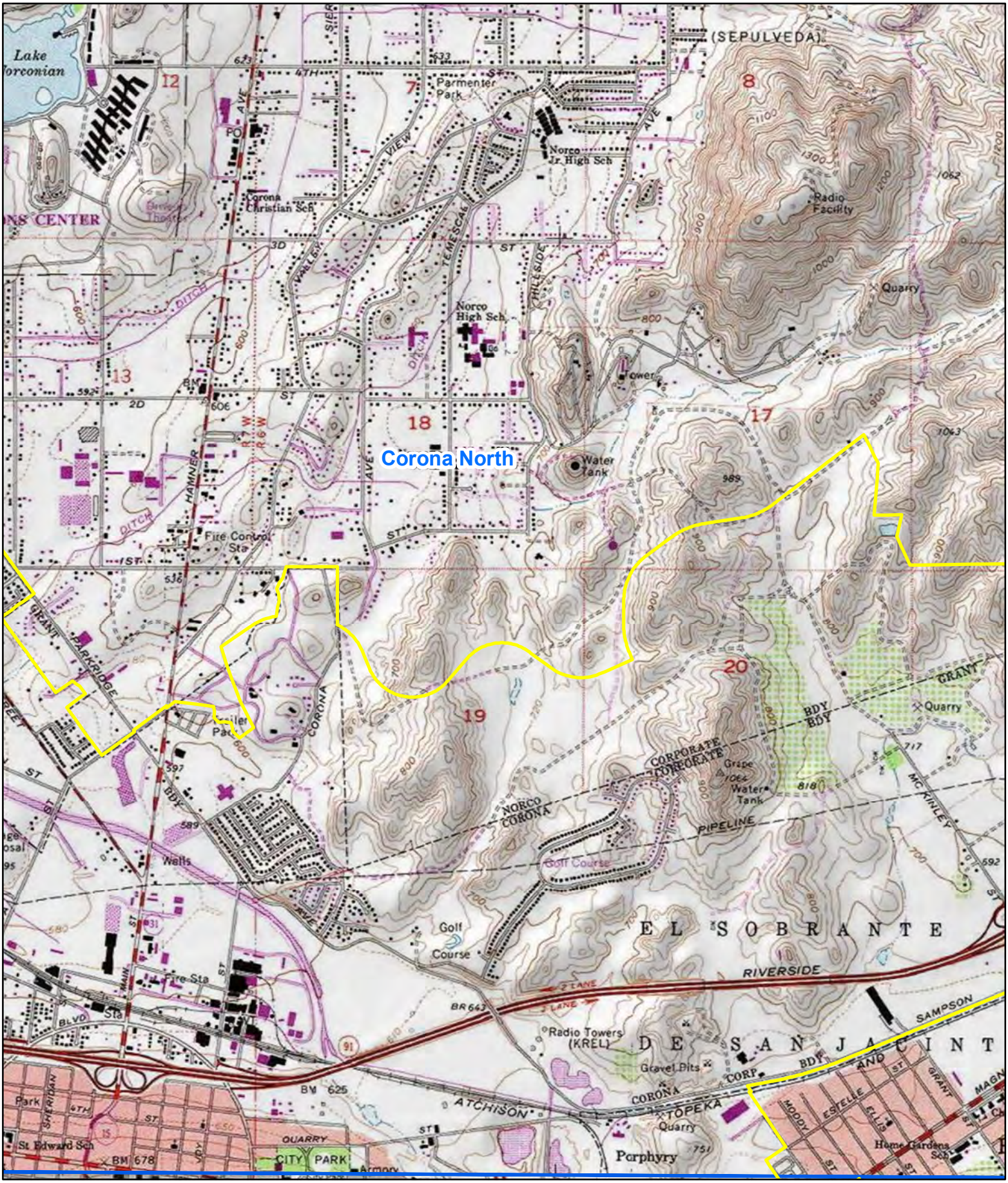
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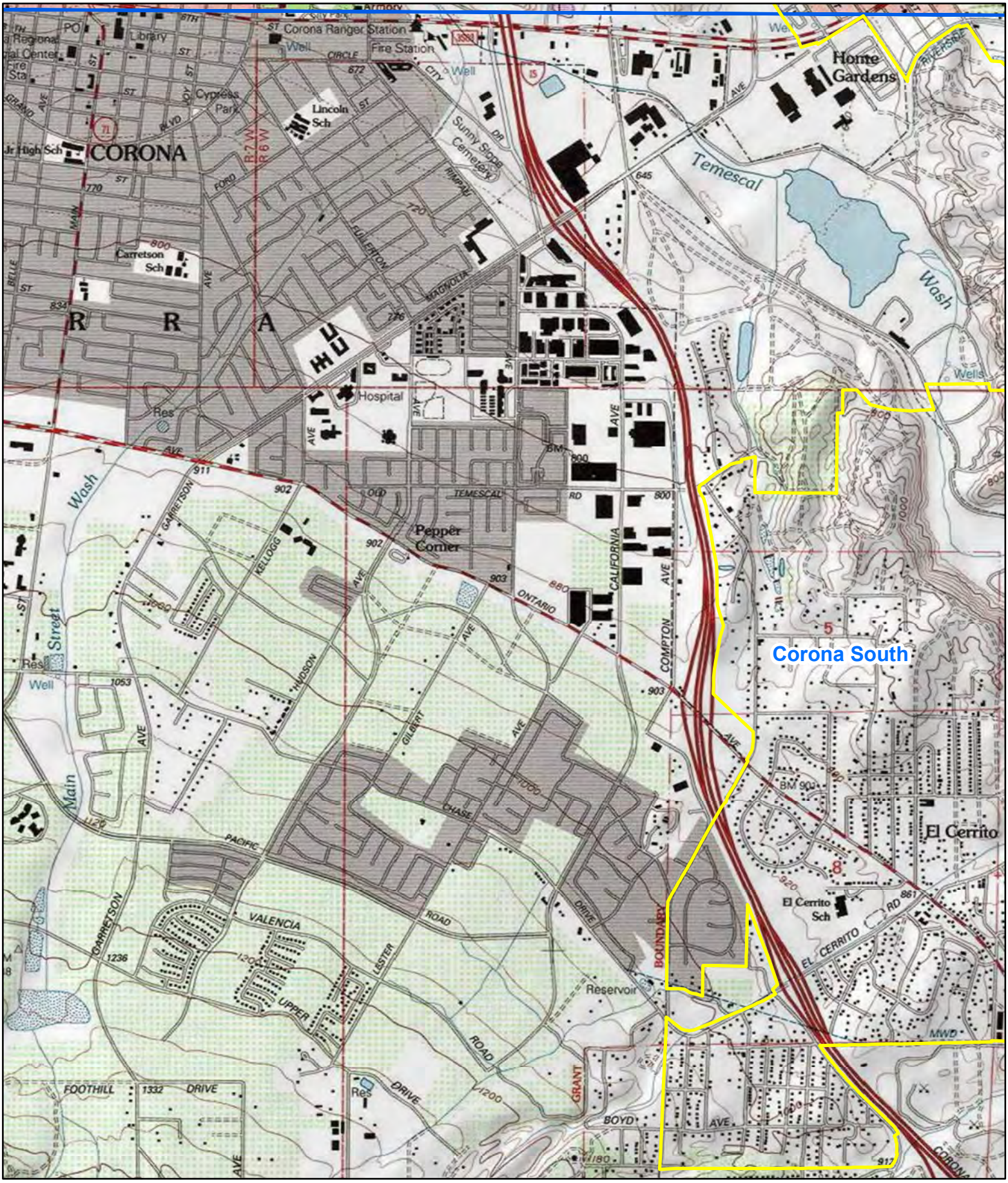


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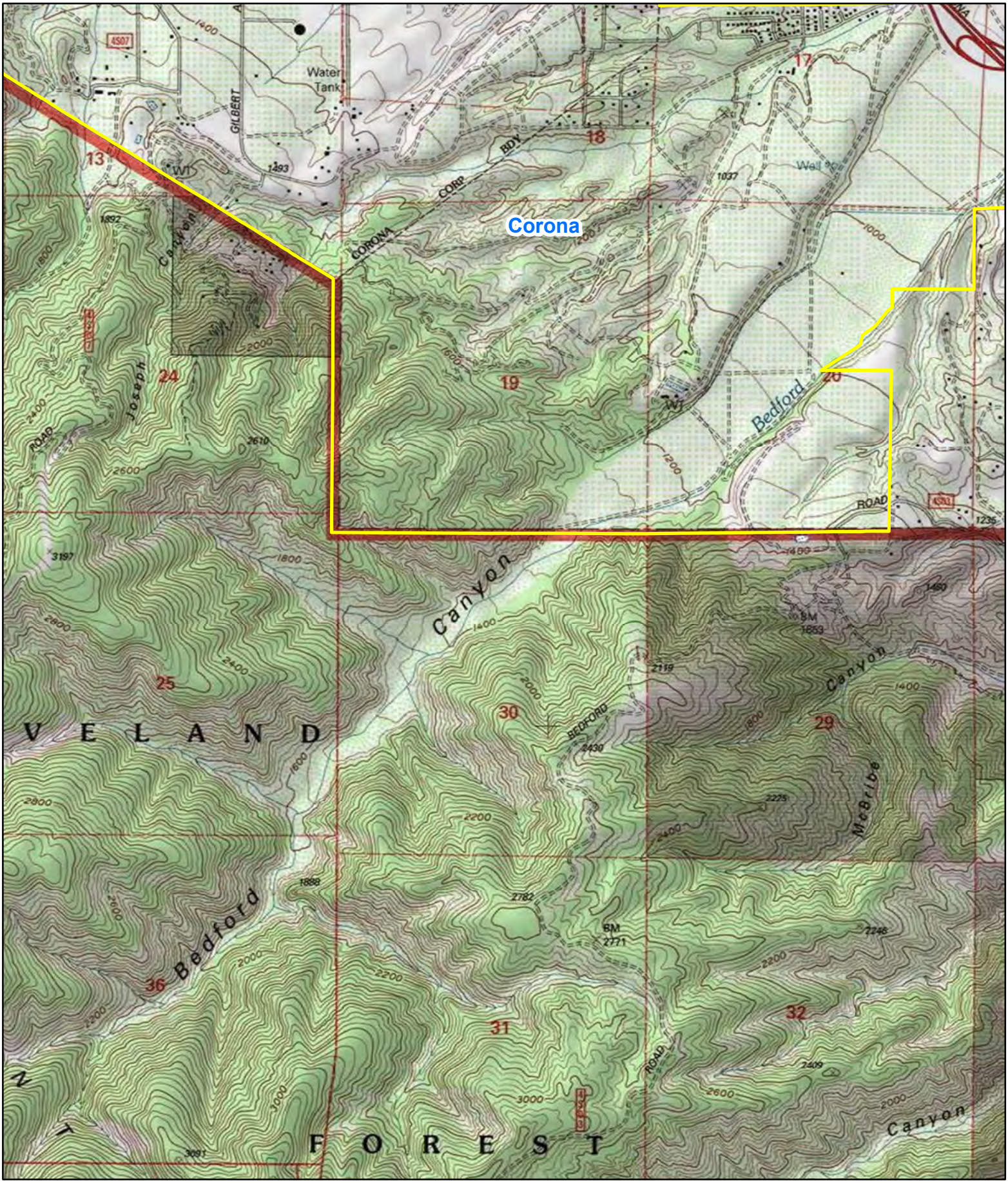
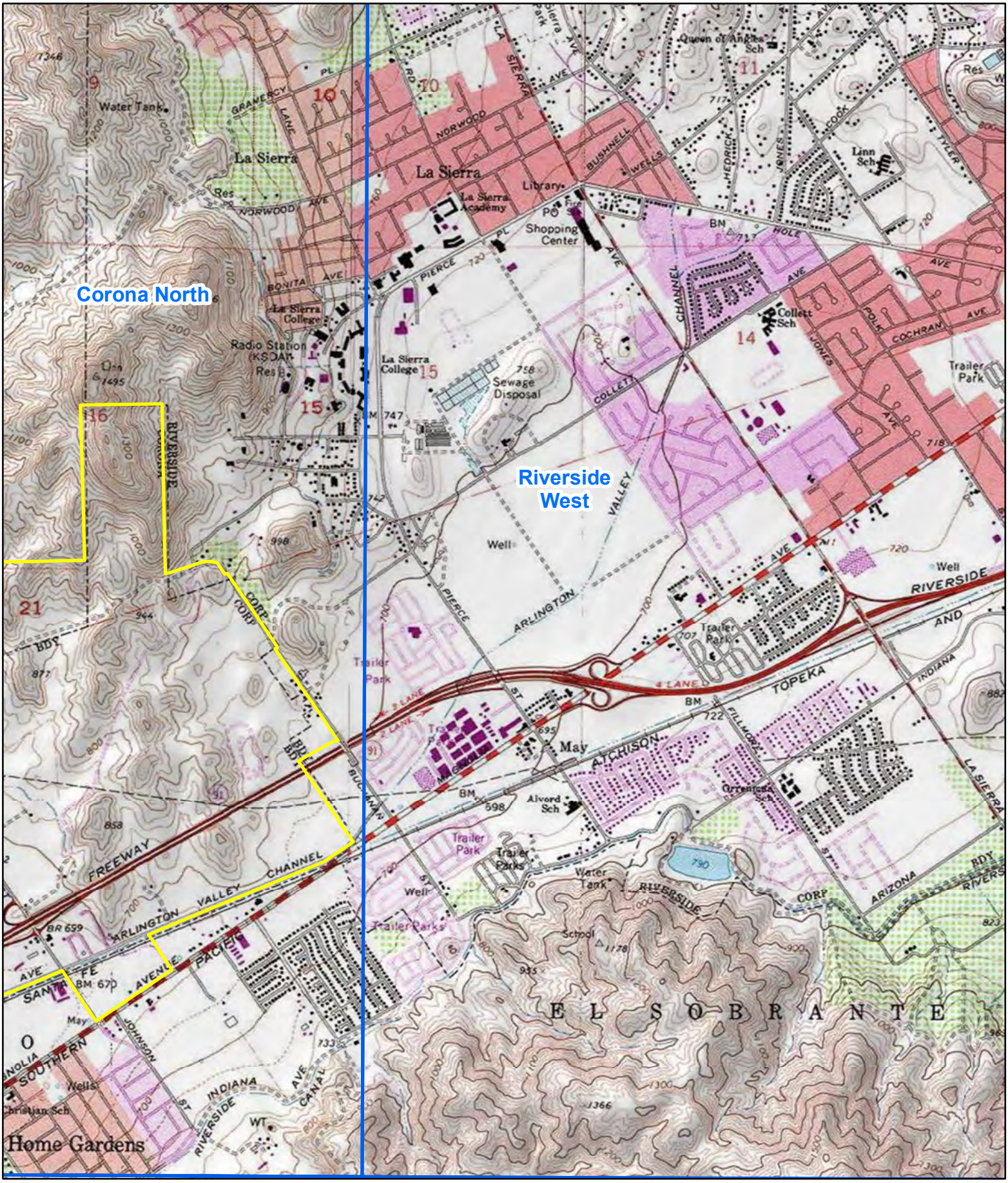


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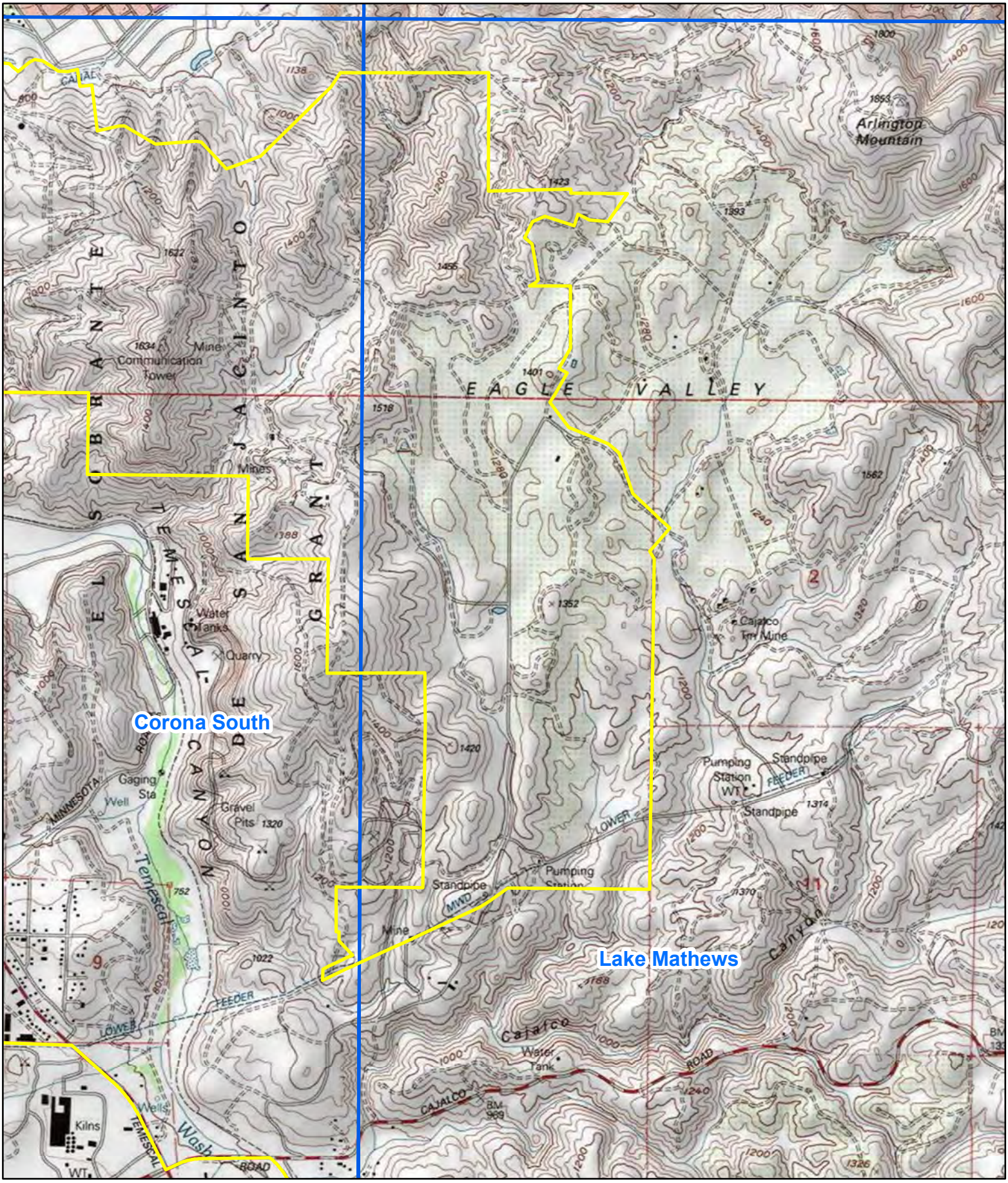
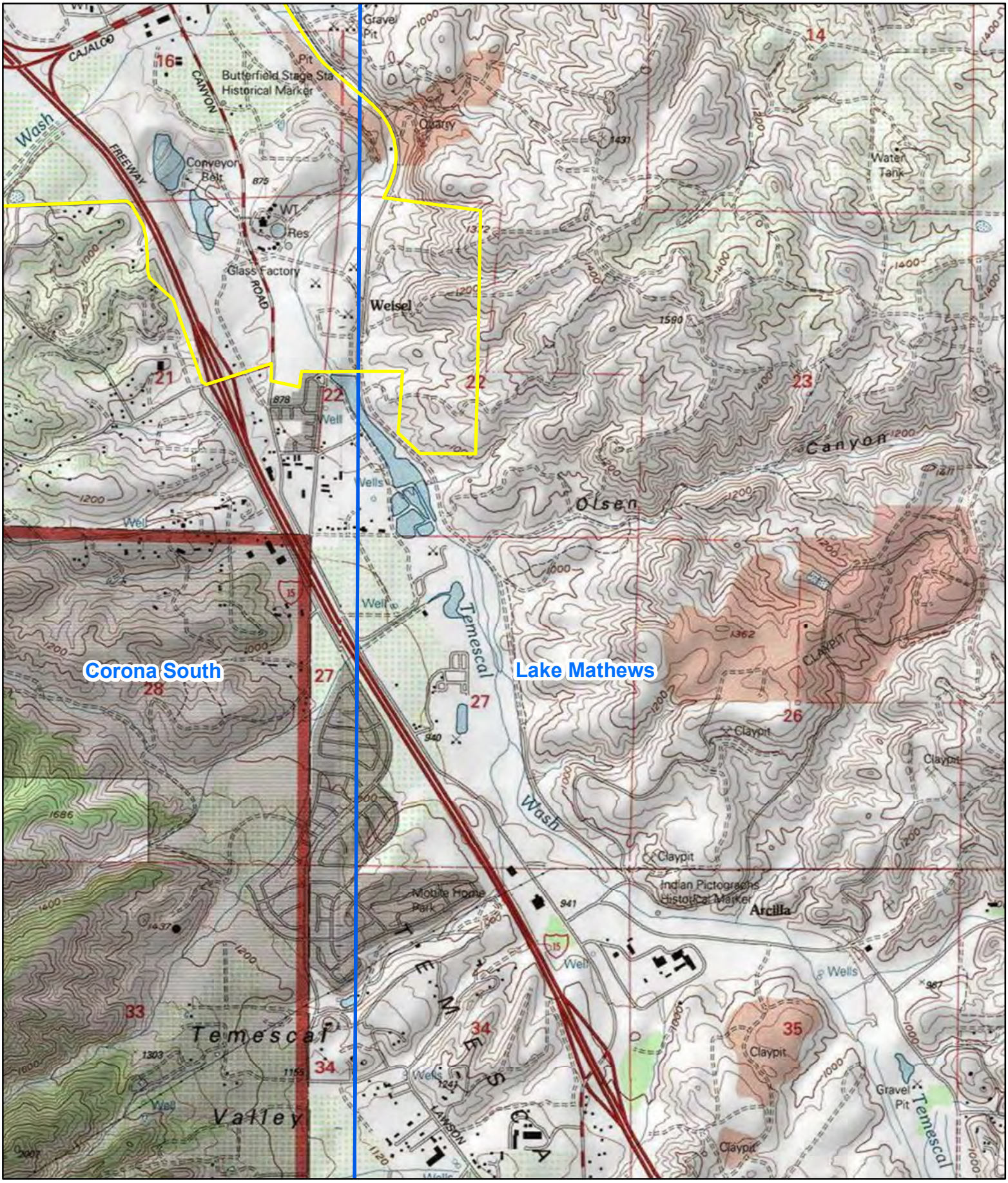


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RED TAIL ENVIRONMENTAL

RED TAIL ENVIRONMENTAL

April 6, 2020

Bo Mazzetti
Chairperson
Rincon Band of Luiseno Indians
One Government Center Land, Valley Center, CA, 92082
760-749-1051
bomazzetti@aol.com

Re: City of Corona Reclaimed Water Project, Riverside County, California

Dear Mr. Mazzetti,

Red Tail Environmental (Red Tail) is conducting an archaeological study for the City of Corona Reclaimed Water Project (project), located within the City of Corona, Riverside County, California. The project area includes the entire City of Corona and the city's sphere of influence. The project is subject to the California Environmental Quality Act (CEQA) and will assess the environmental impact of the City of Corona's Reclaimed Water Master Plan. The City of Corona is the lead agency. The project area is shown on the following USGS 7.5' Quad Maps:

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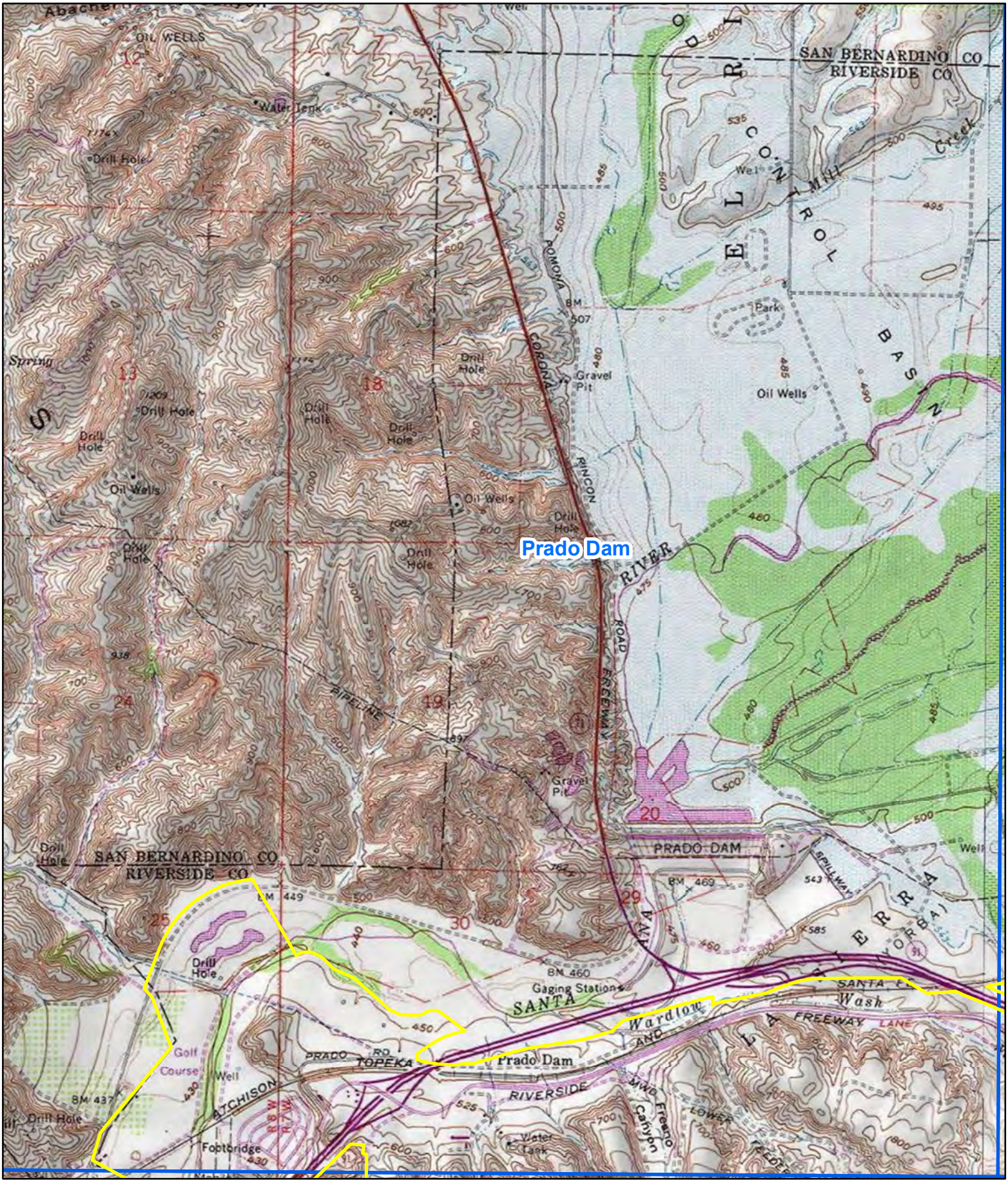


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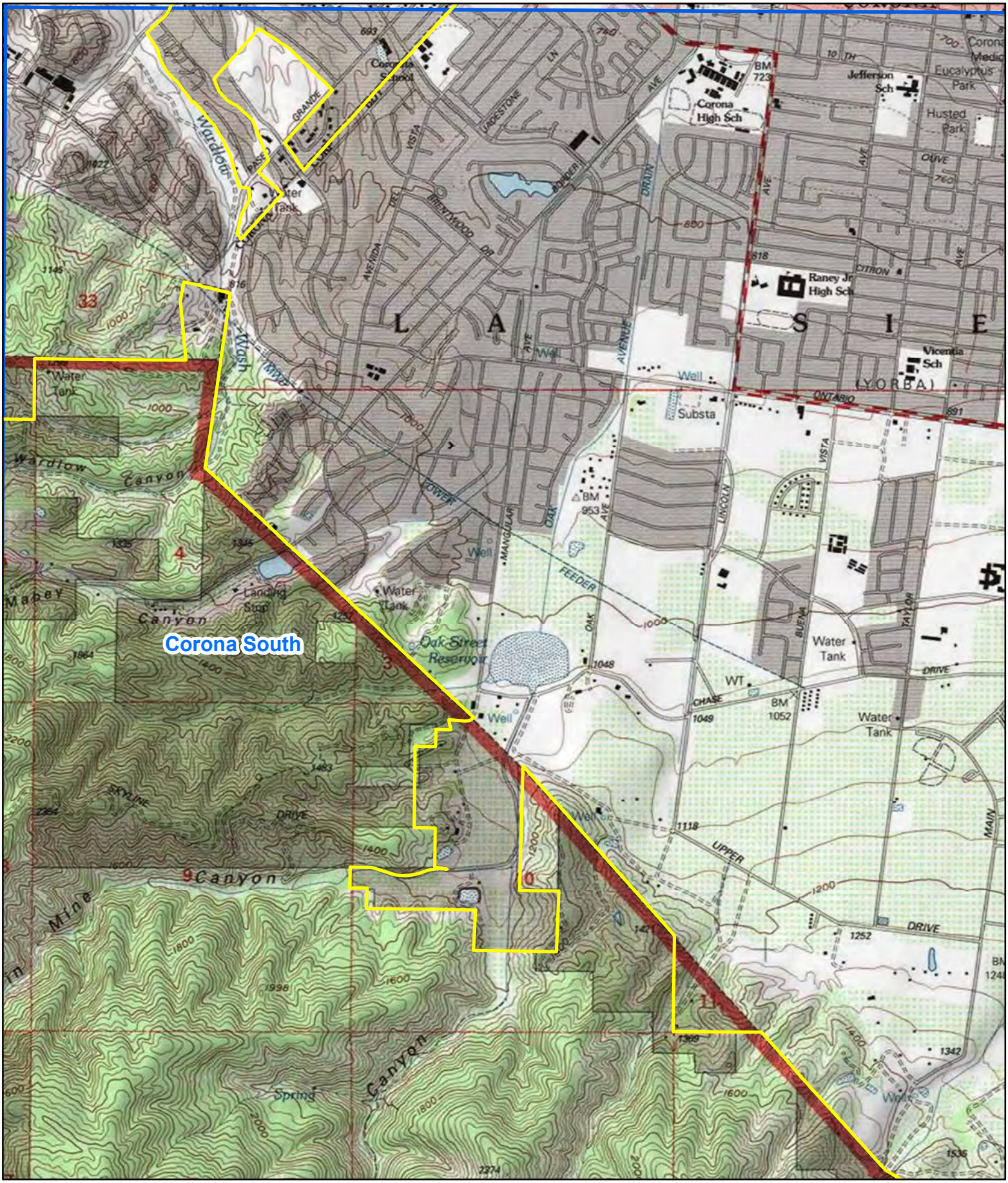


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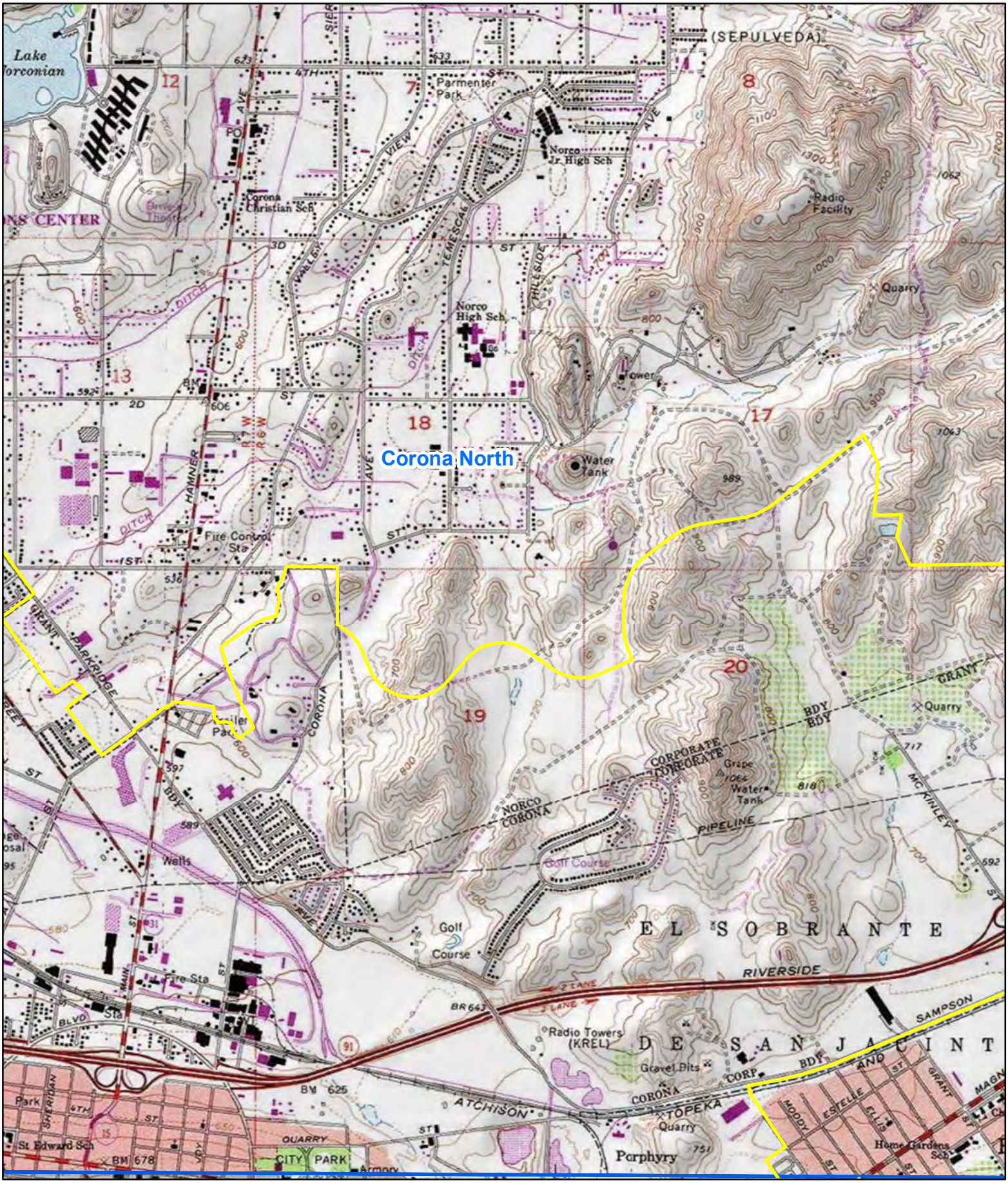
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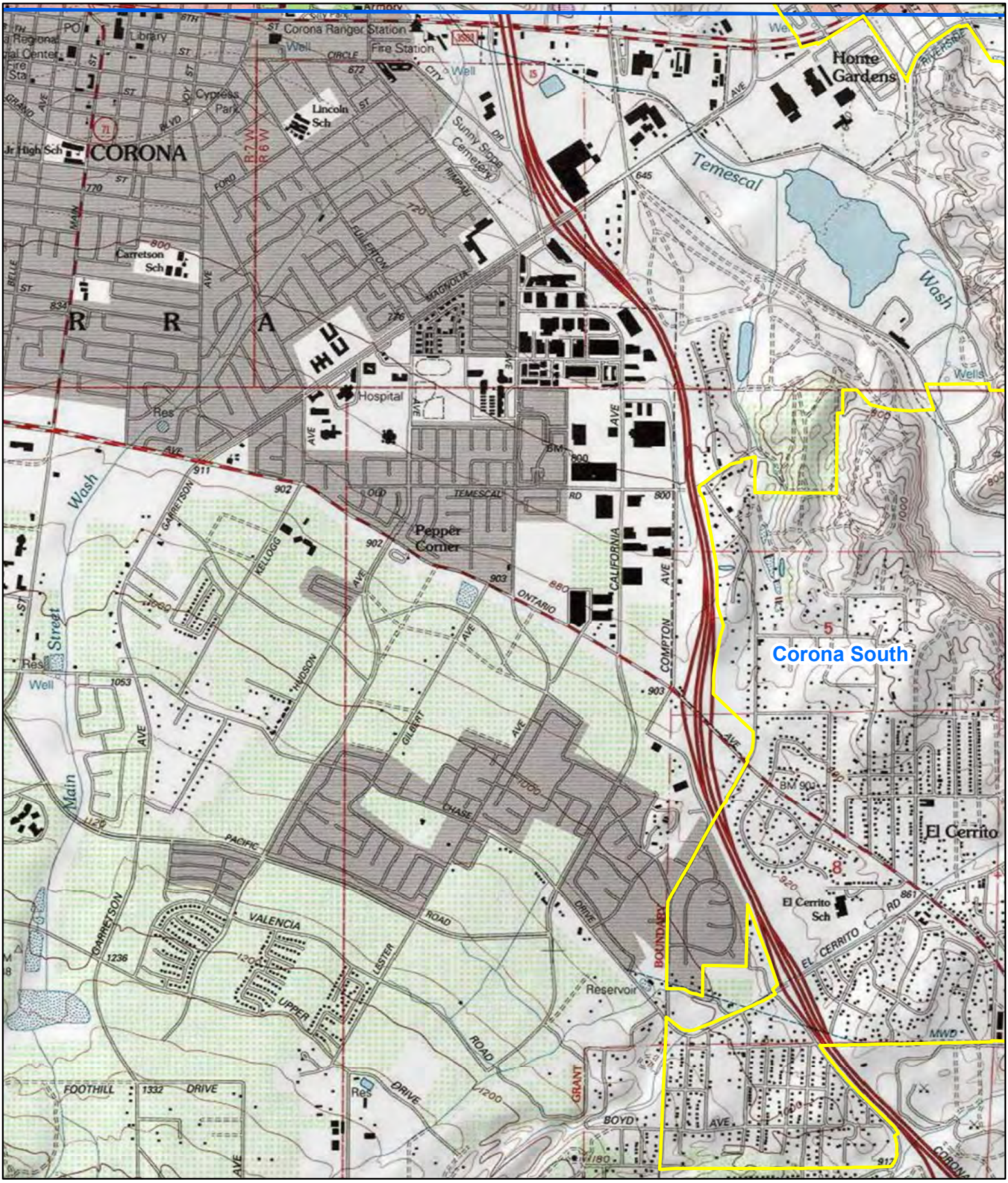


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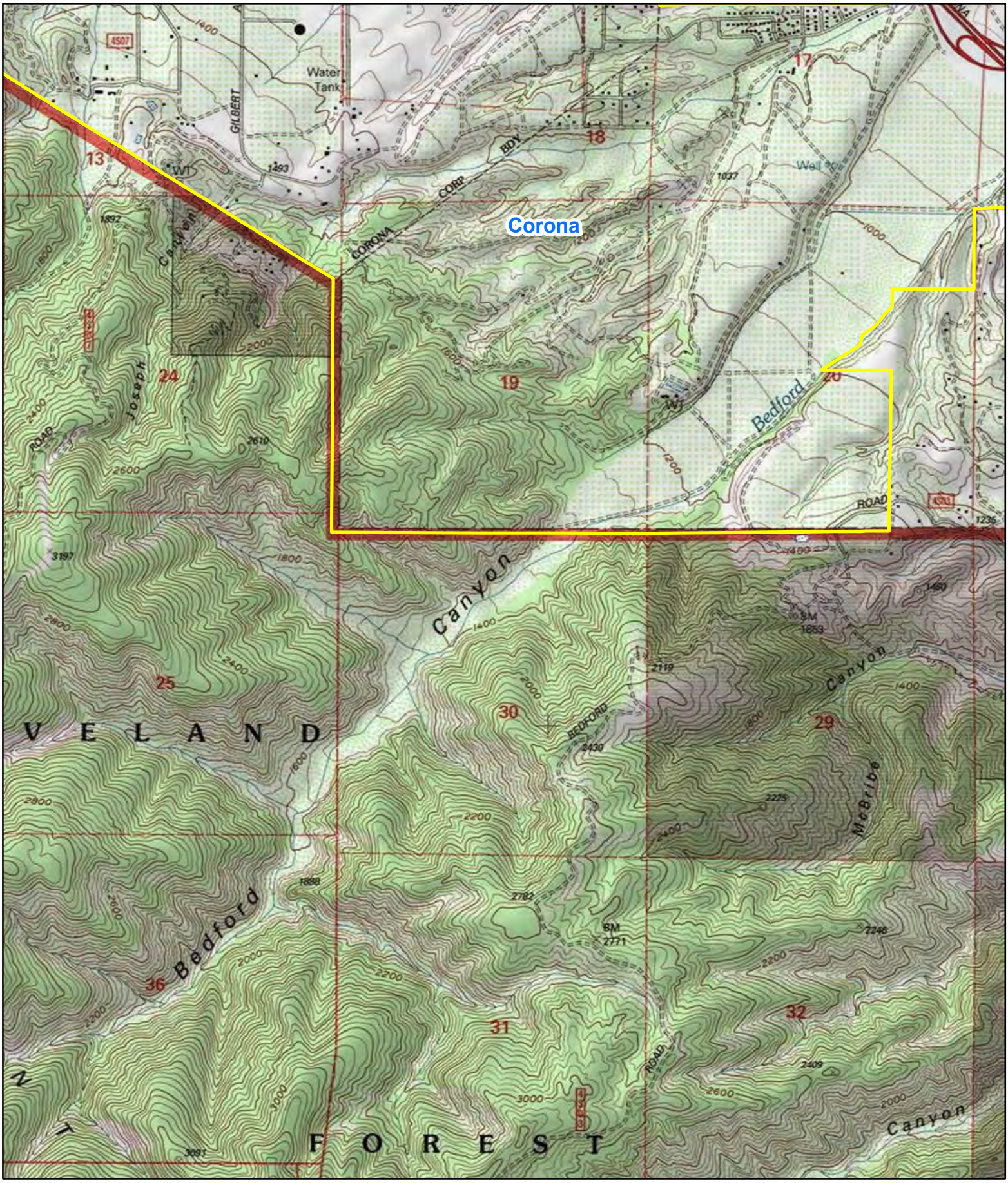
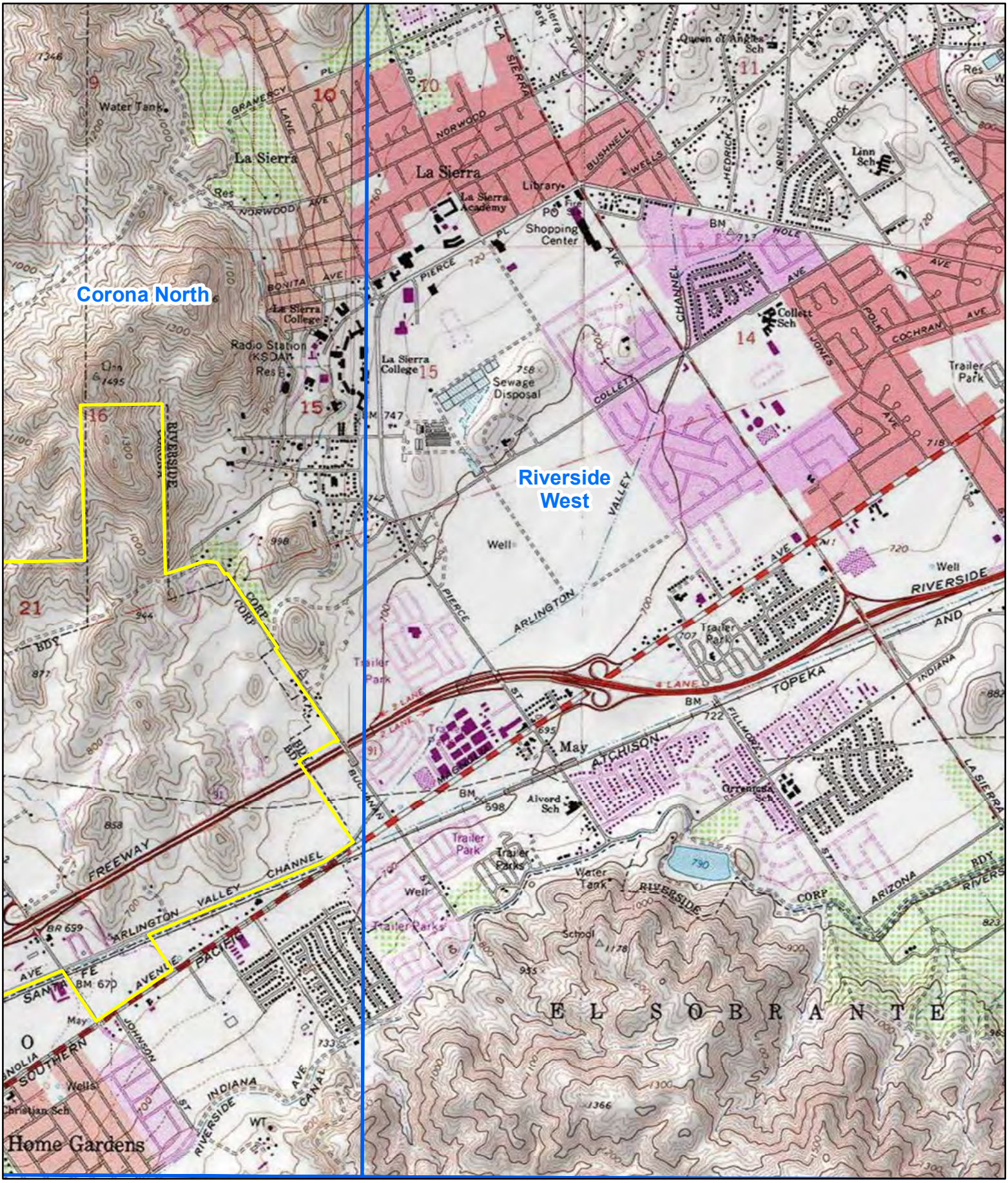


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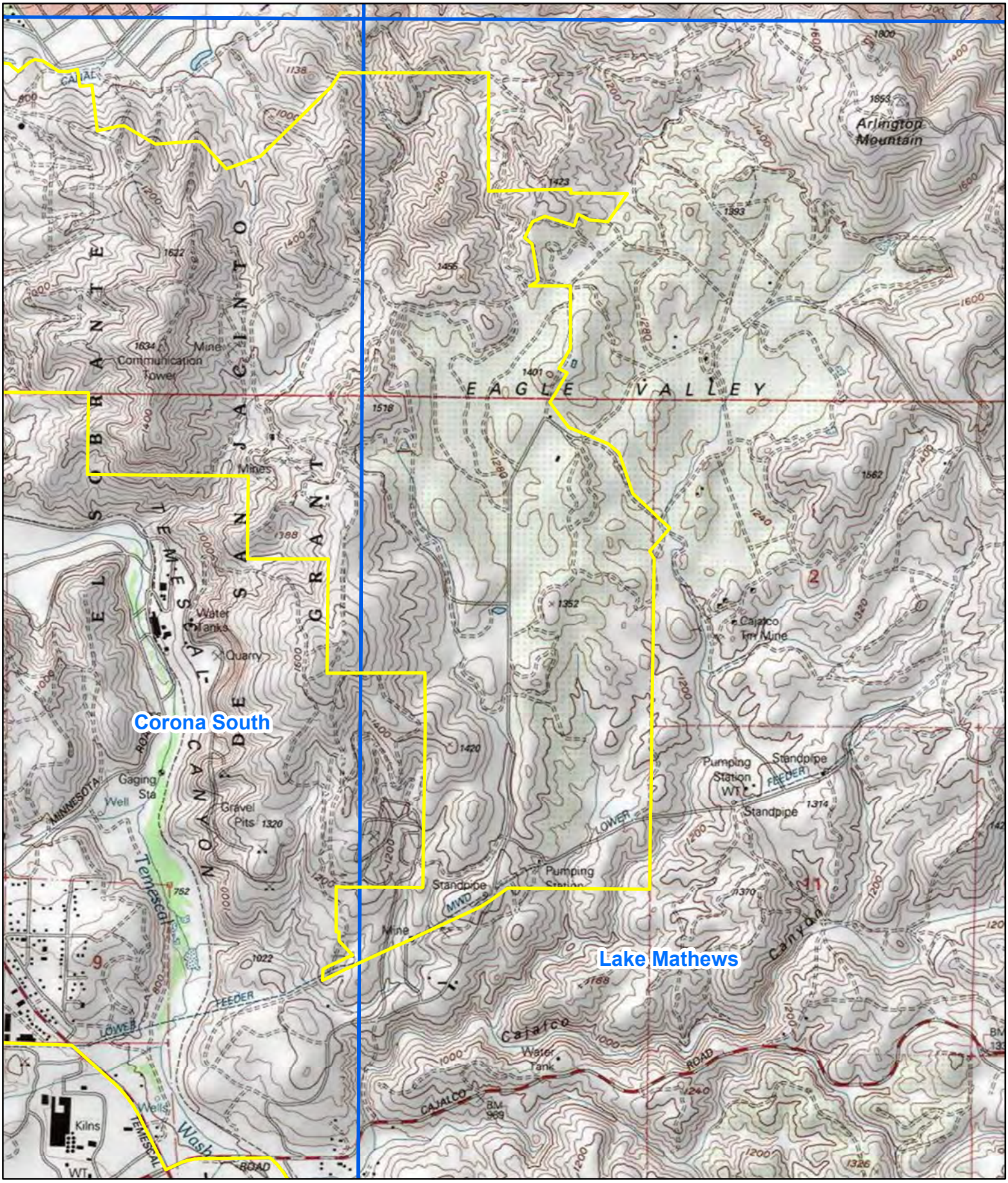
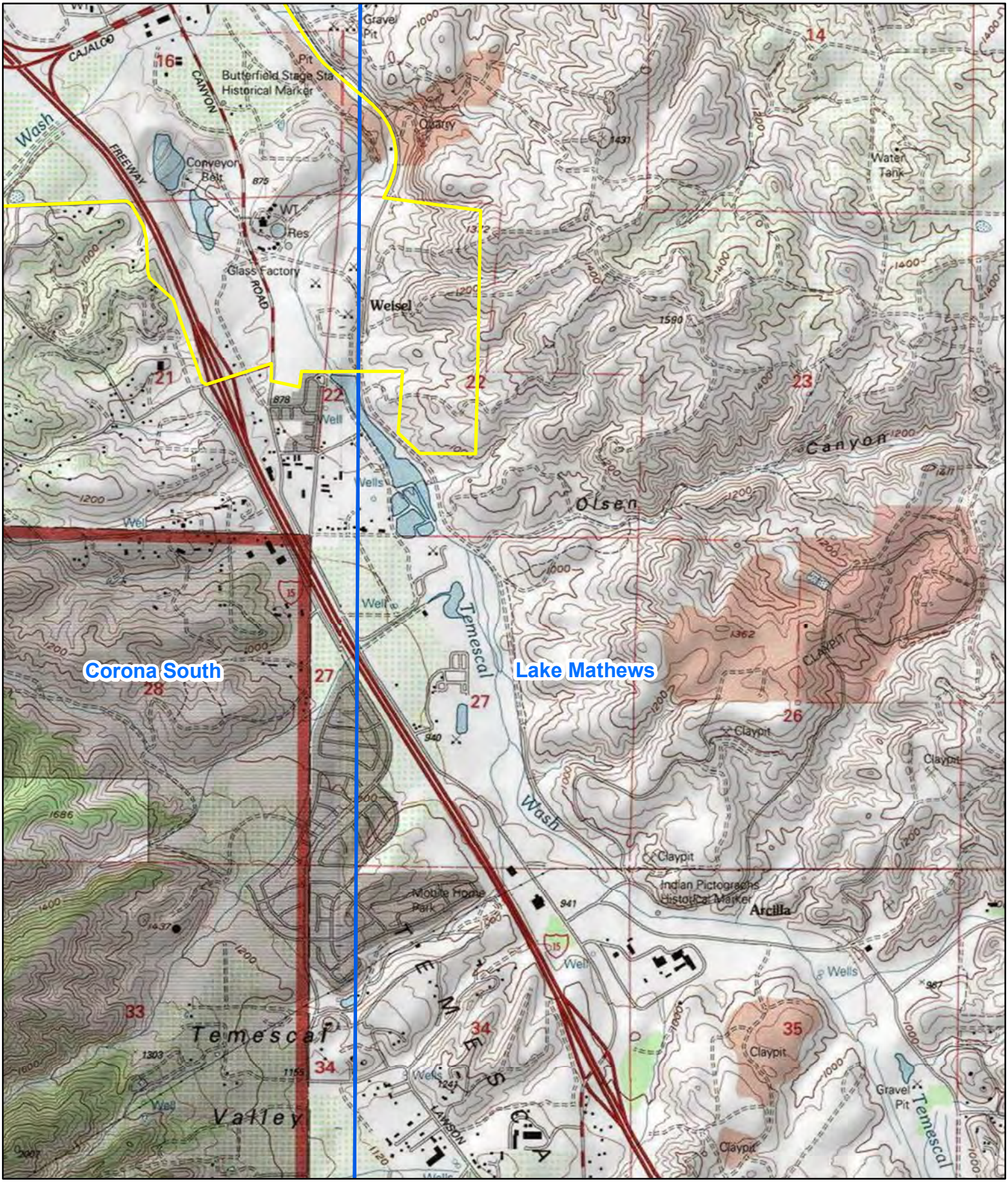


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RED TAIL ENVIRONMENTAL

RED TAIL ENVIRONMENTAL

April 6, 2020

Charles Alvarez

Gabrielino-Tongva Tribe
23454 Vanowen Street, West Hills, CA, 91307
310-403-6048
roadkingcharles@aol.com

Re: City of Corona Reclaimed Water Project, Riverside County, California

Dear Mr. Alvarez,

Red Tail Environmental (Red Tail) is conducting an archaeological study for the City of Corona Reclaimed Water Project (project), located within the City of Corona, Riverside County, California. The project area includes the entire City of Corona and the city's sphere of influence. The project is subject to the California Environmental Quality Act (CEQA) and will assess the environmental impact of the City of Corona's Reclaimed Water Master Plan. The City of Corona is the lead agency. The project area is shown on the following USGS 7.5' Quad Maps:

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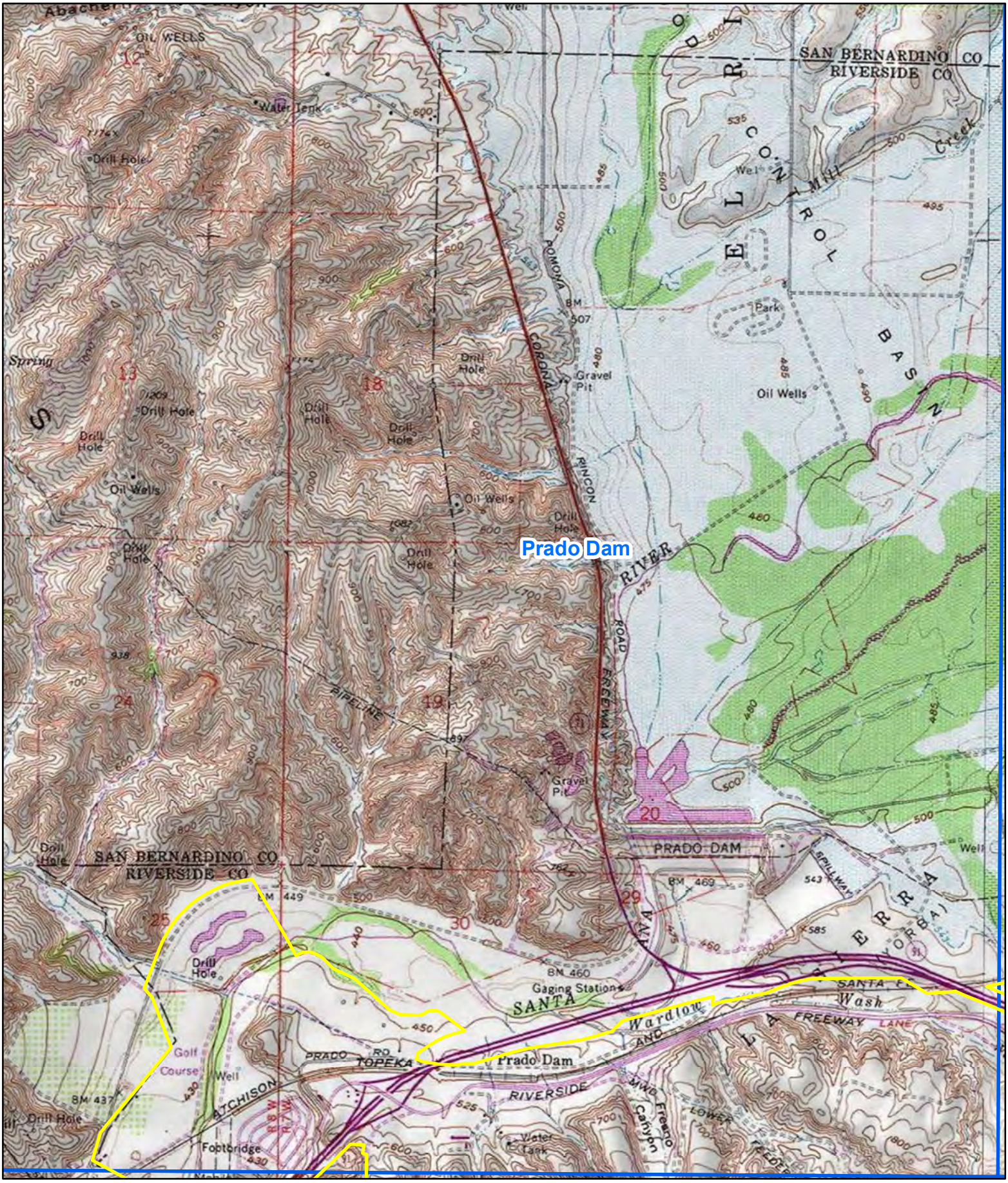


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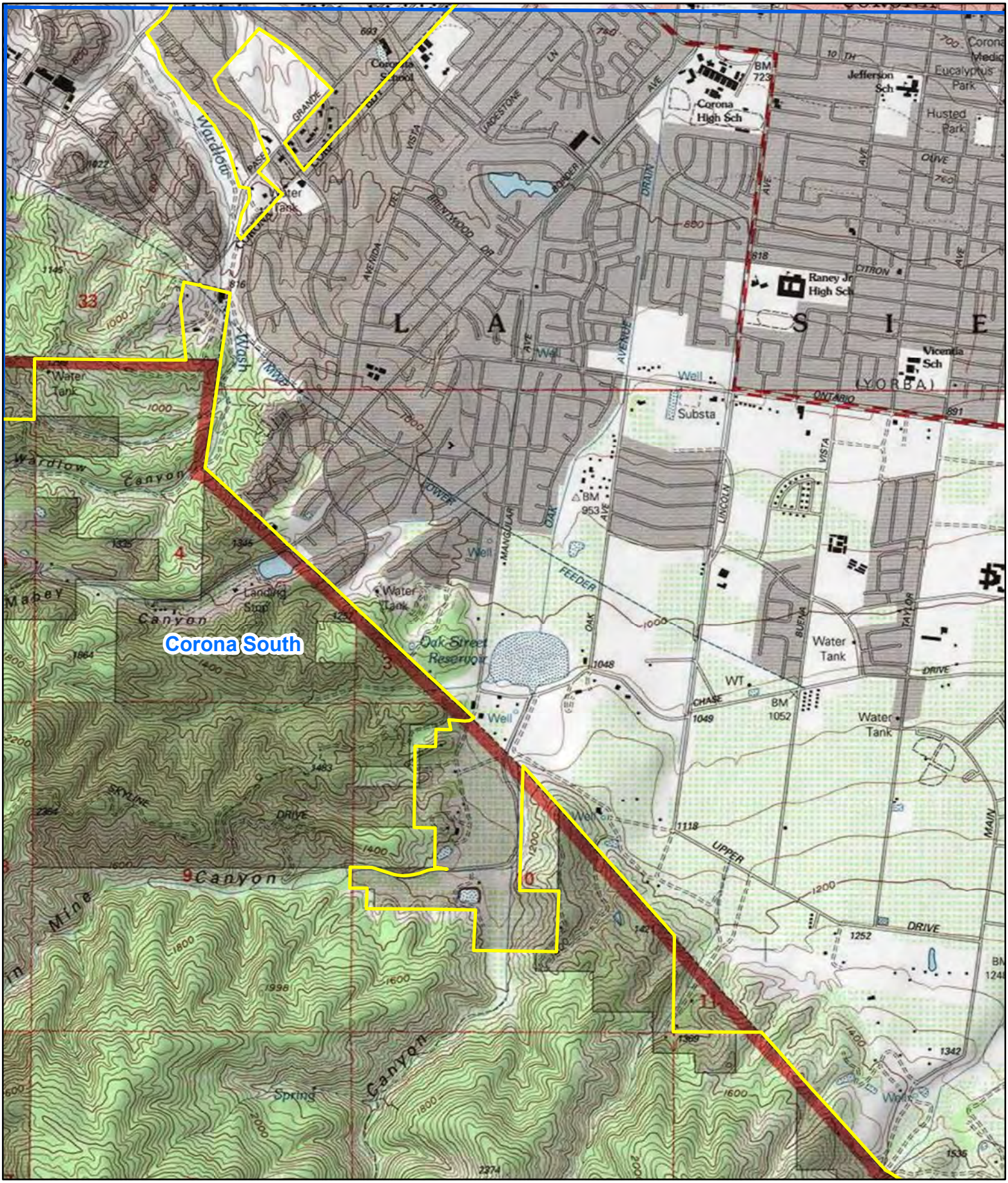


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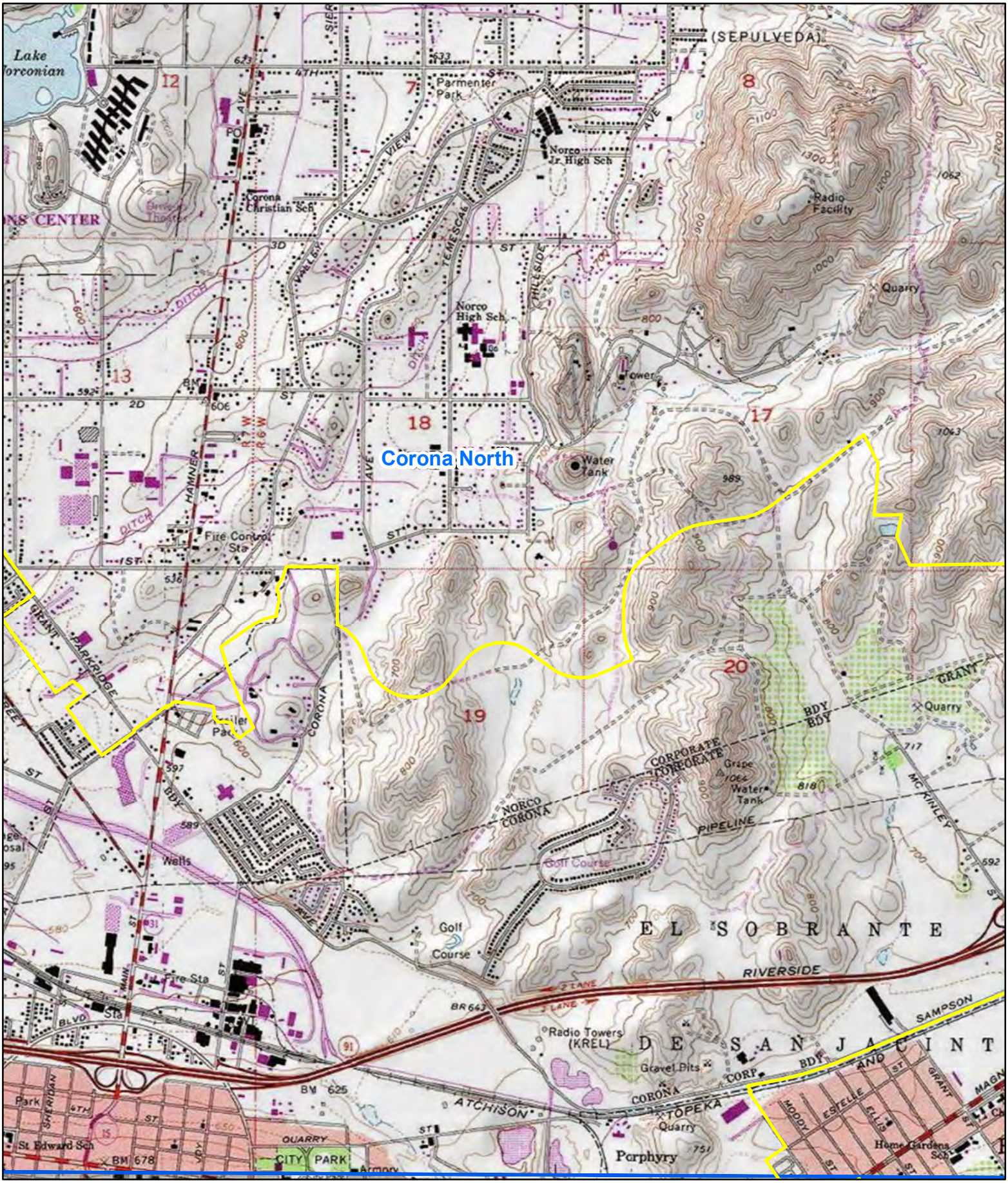
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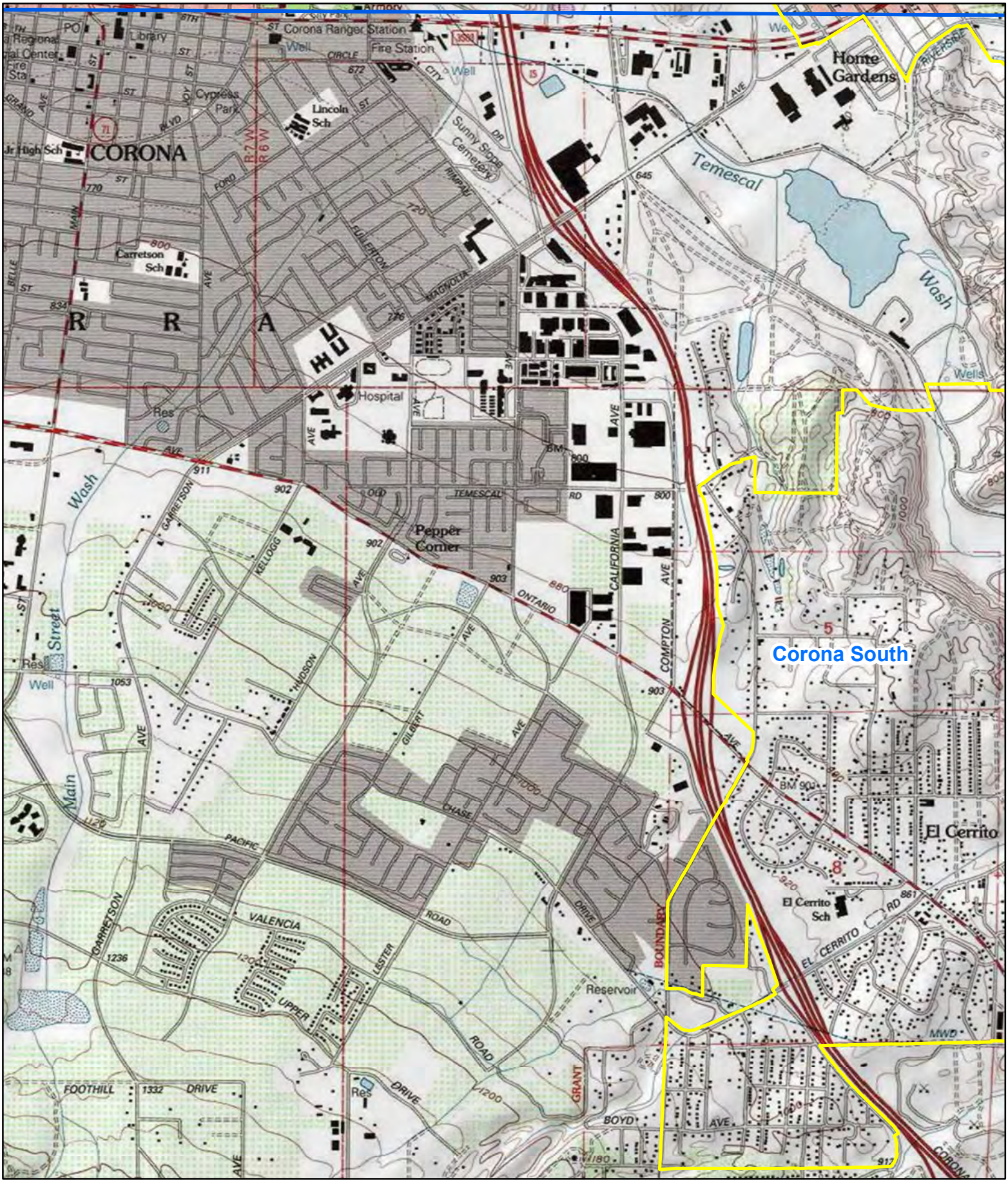


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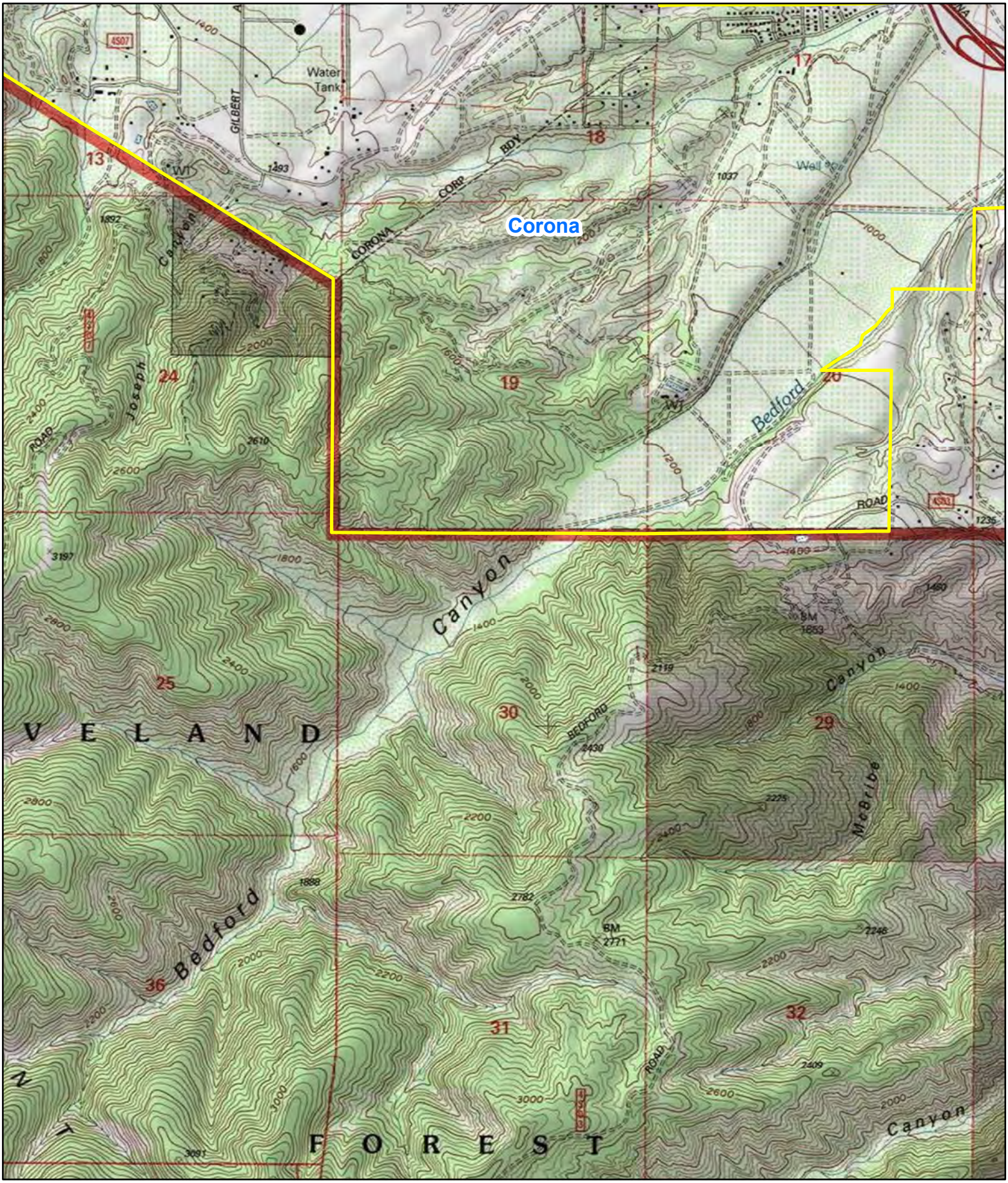
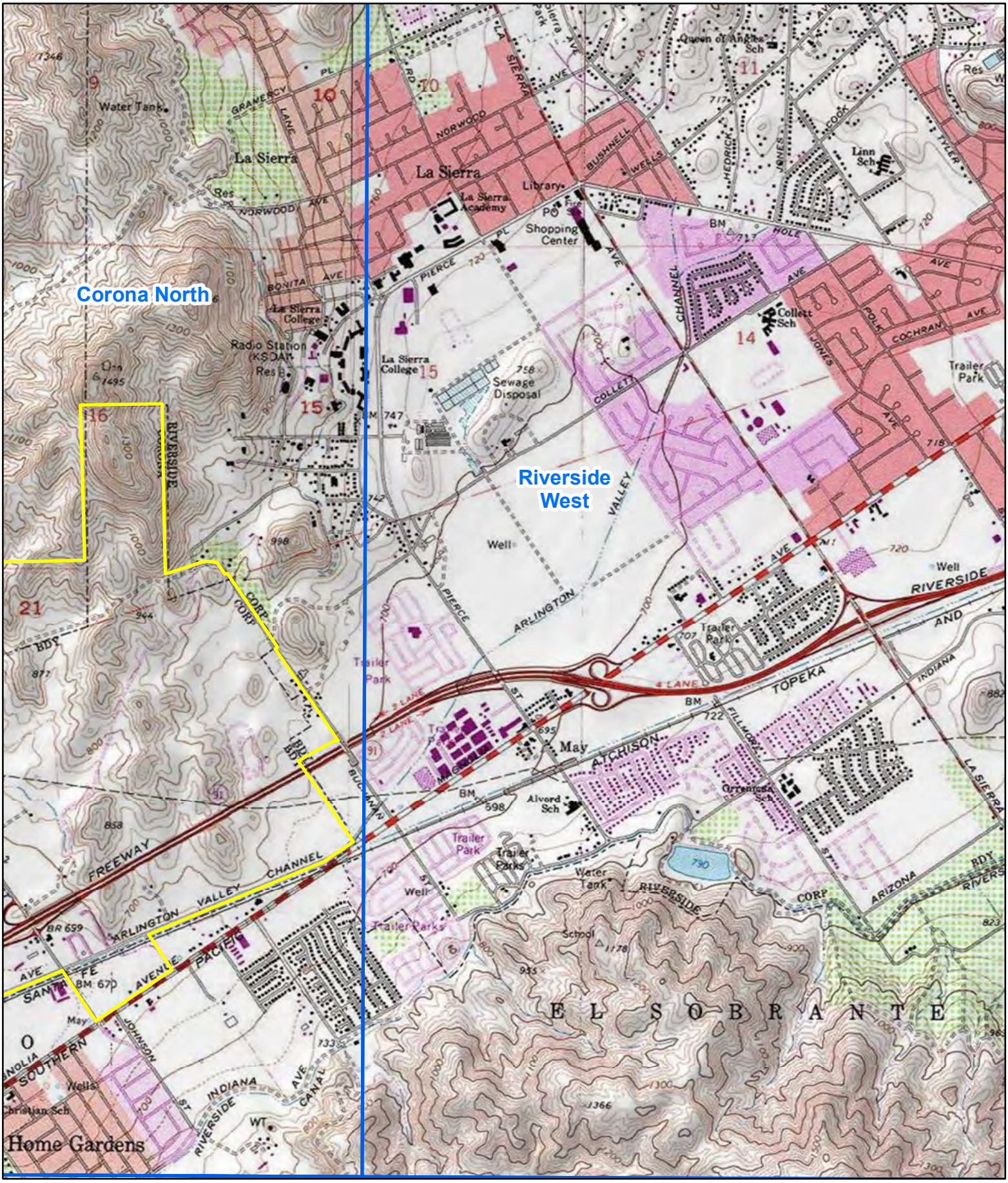


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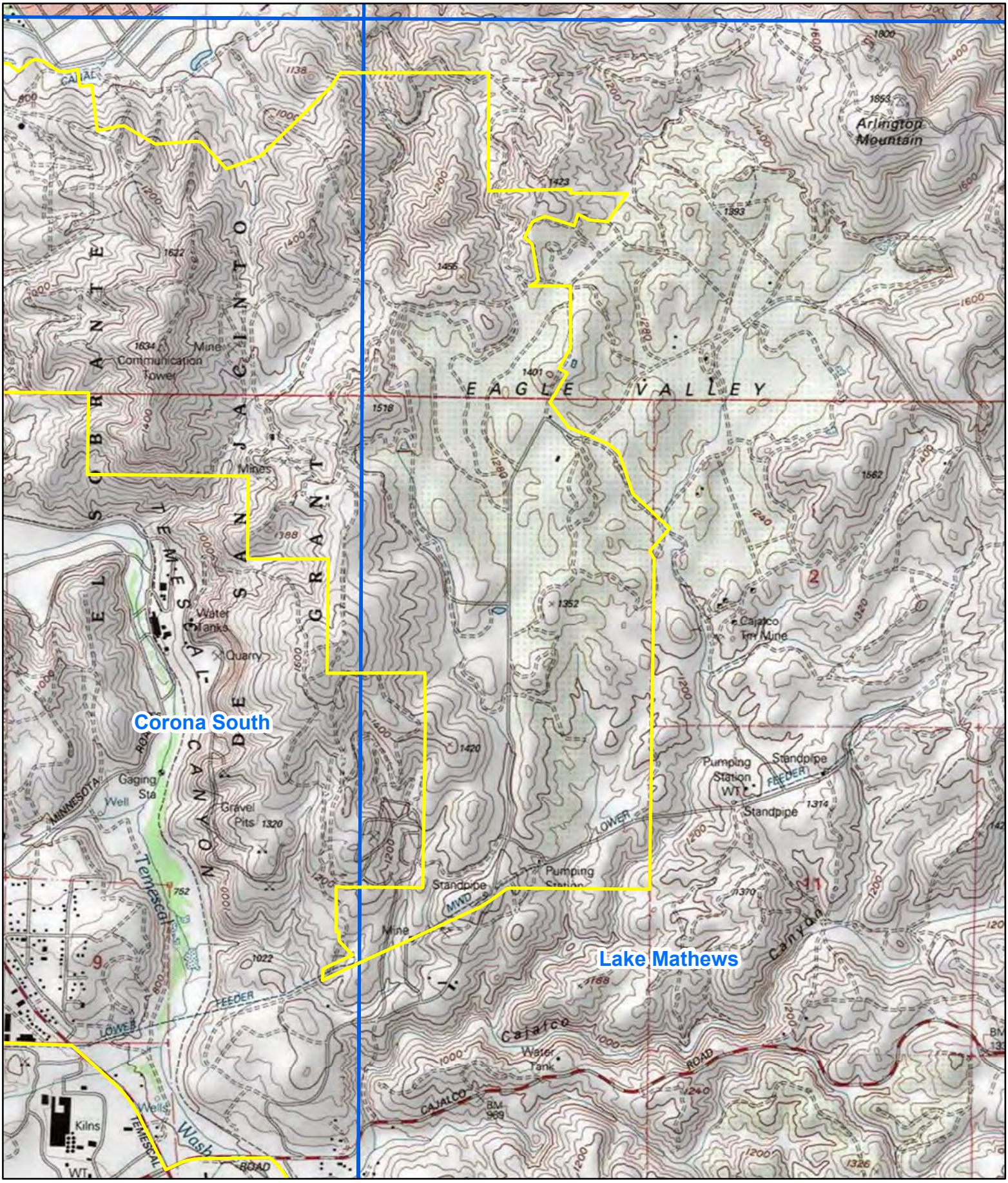
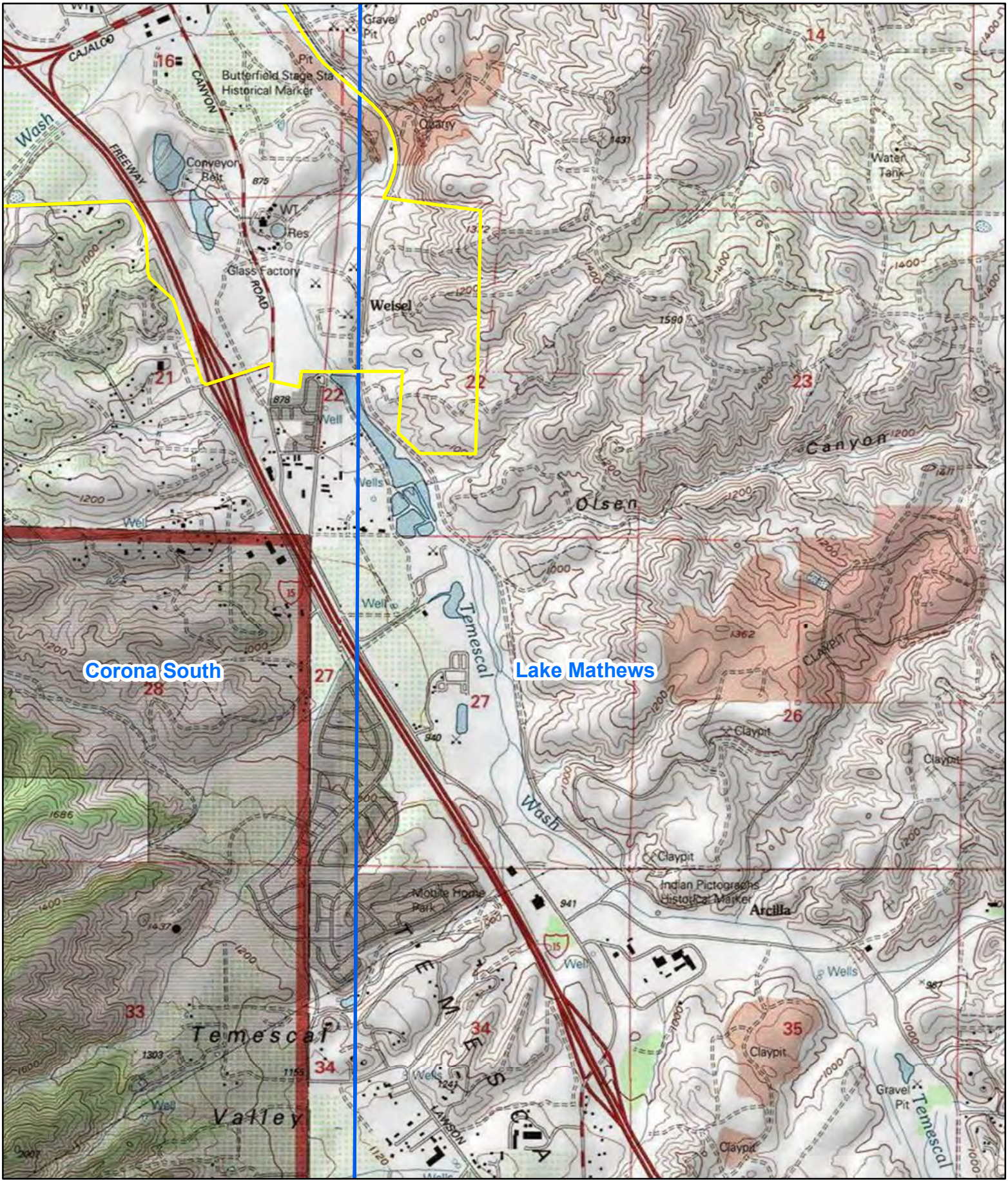


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RED TAIL ENVIRONMENTAL

April 6, 2020

Cheryl Madrigal
Tribal Historic Preservation Officer
Rincon Band of Luiseno Indians
One Government Center Land, Valley Center, CA, 92082
760-297-2635
crd@rincon-nsn.gov

Re: City of Corona Reclaimed Water Project, Riverside County, California

Dear Ms. Madrigal,

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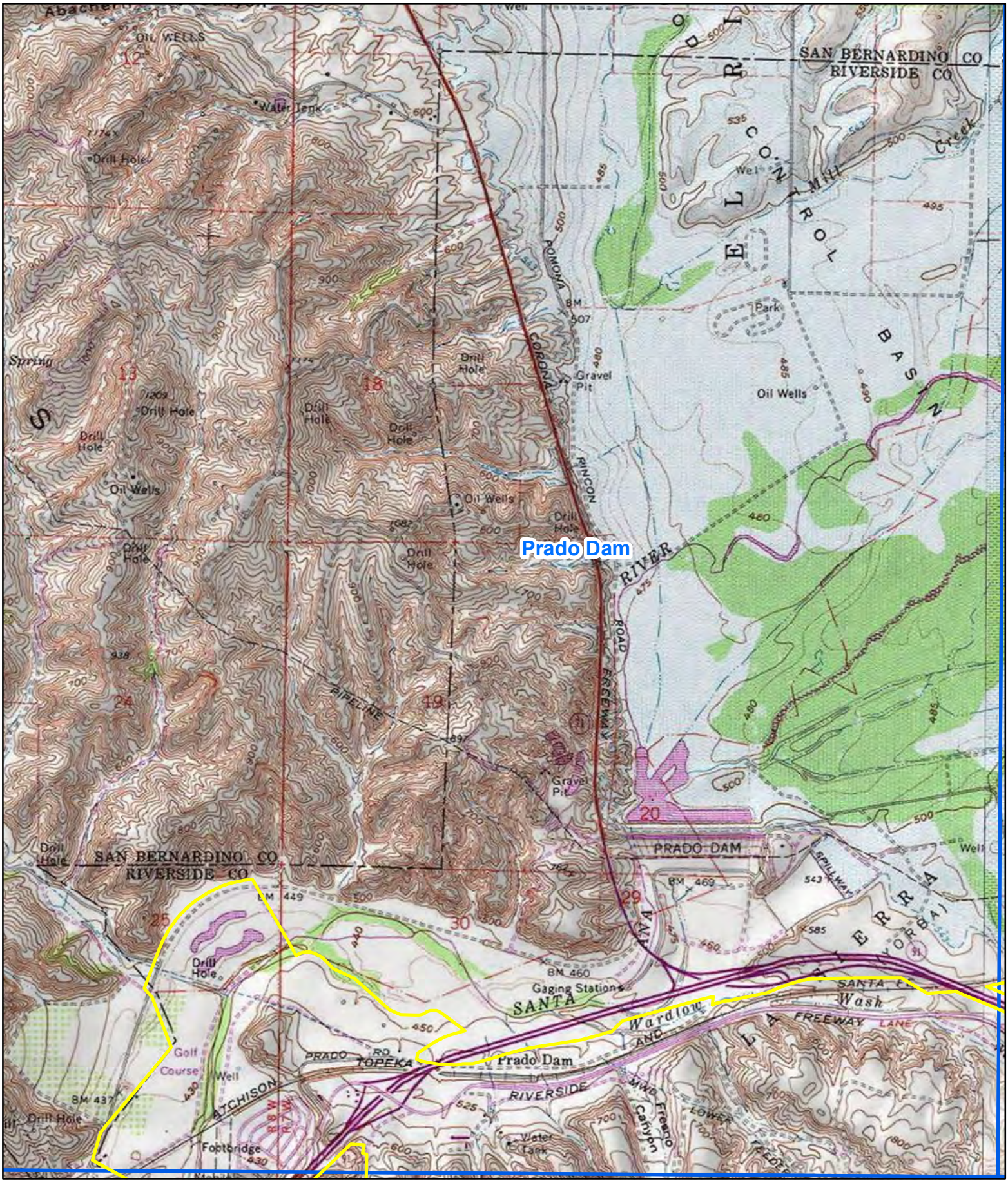


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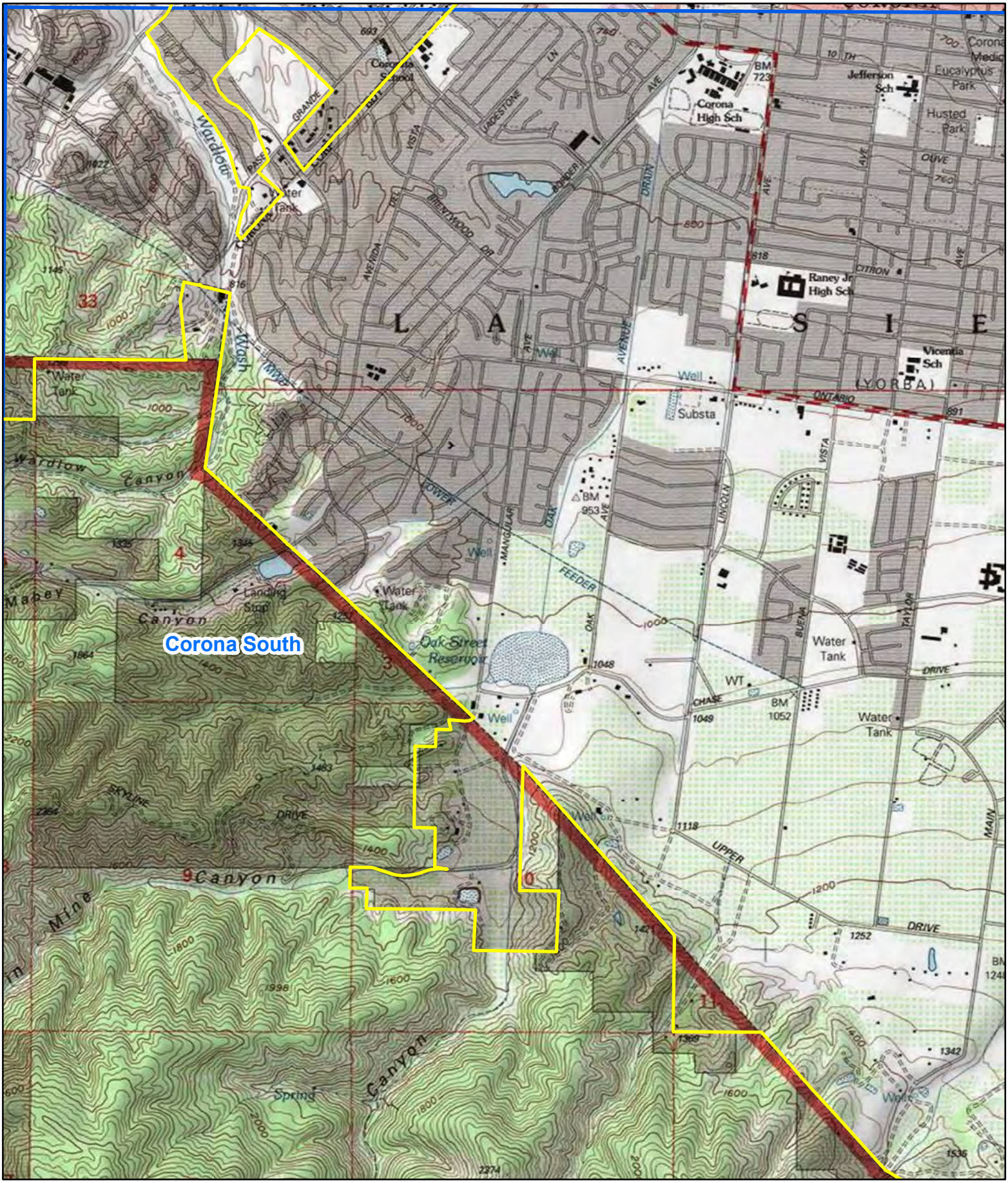


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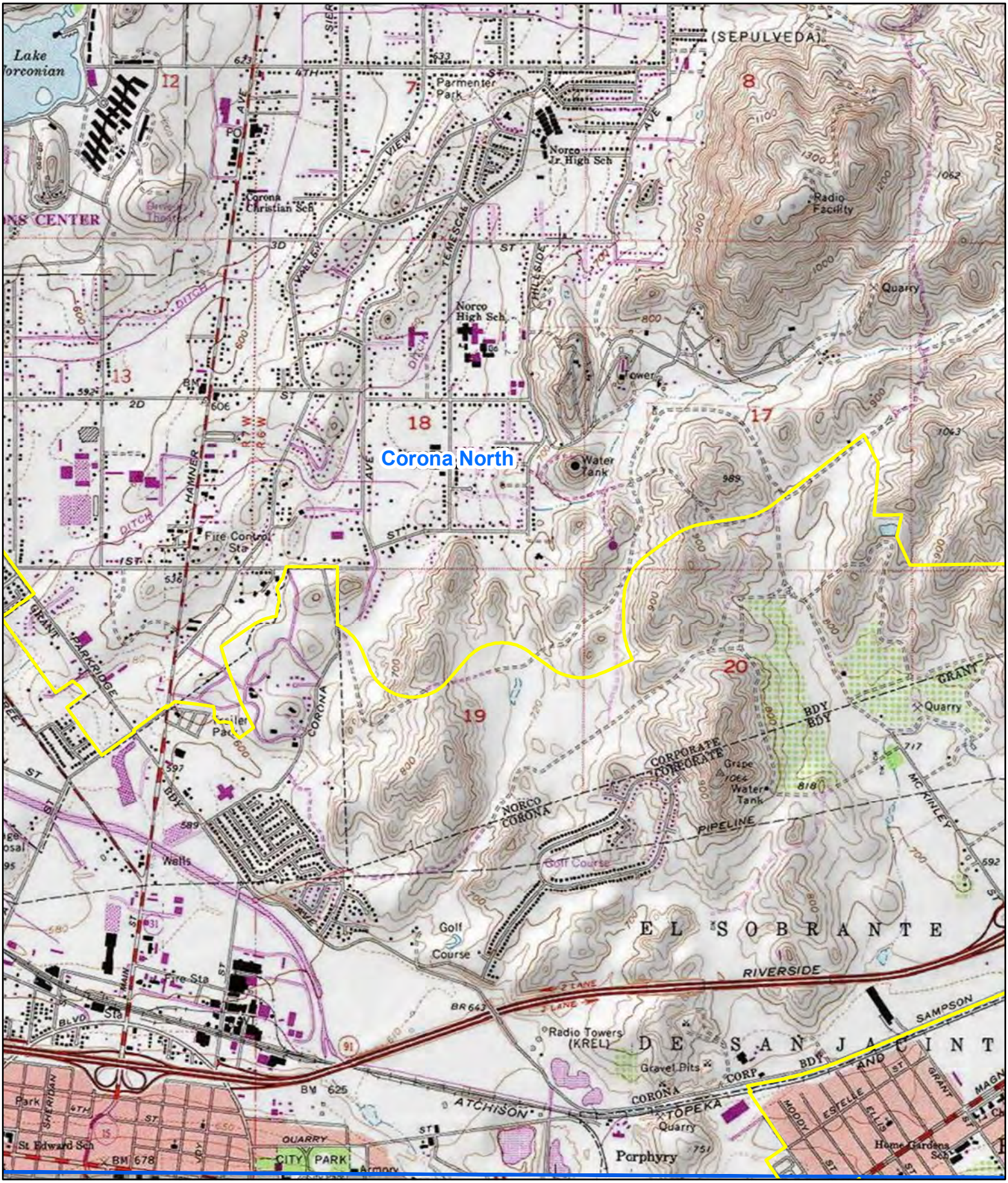
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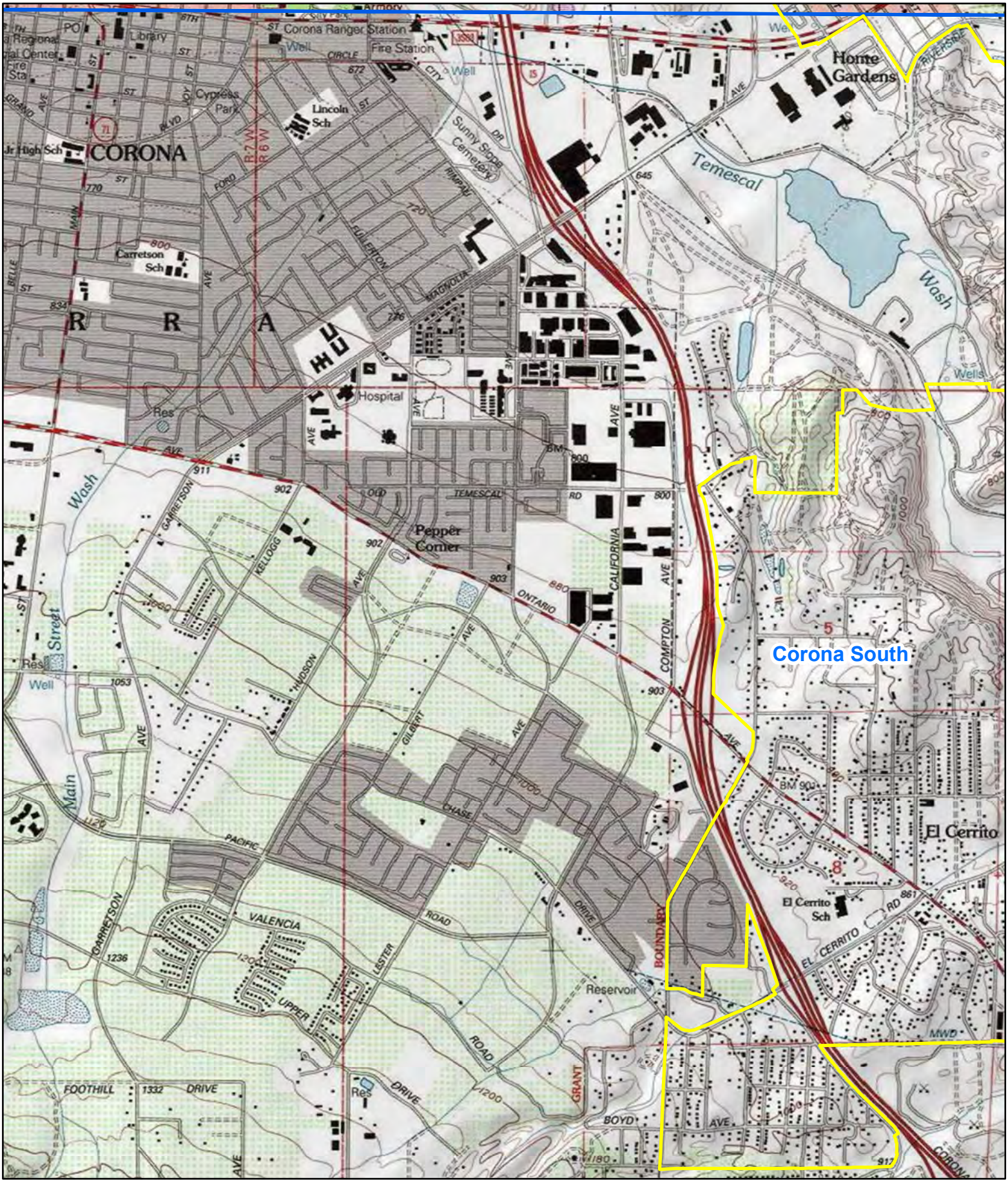


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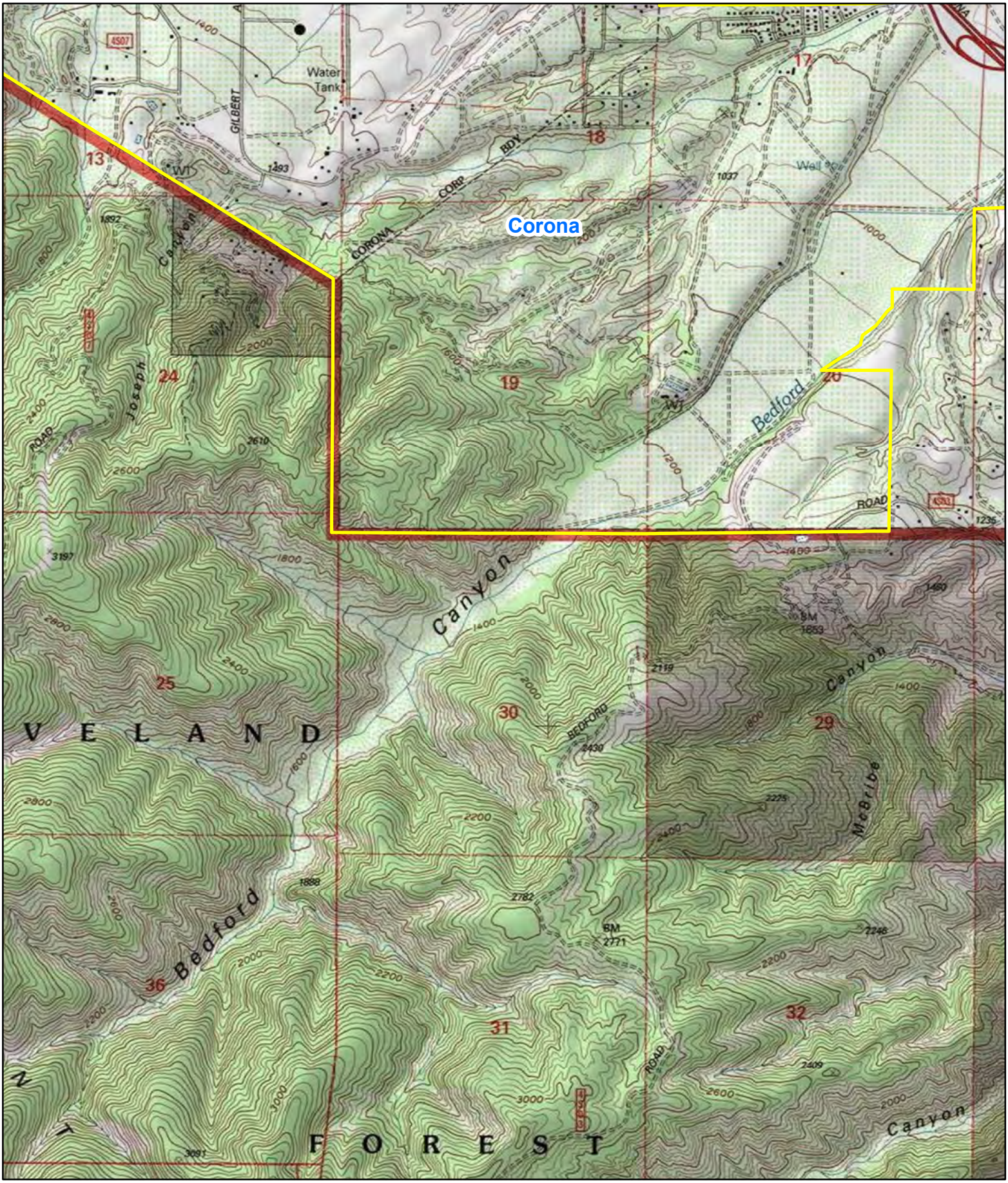


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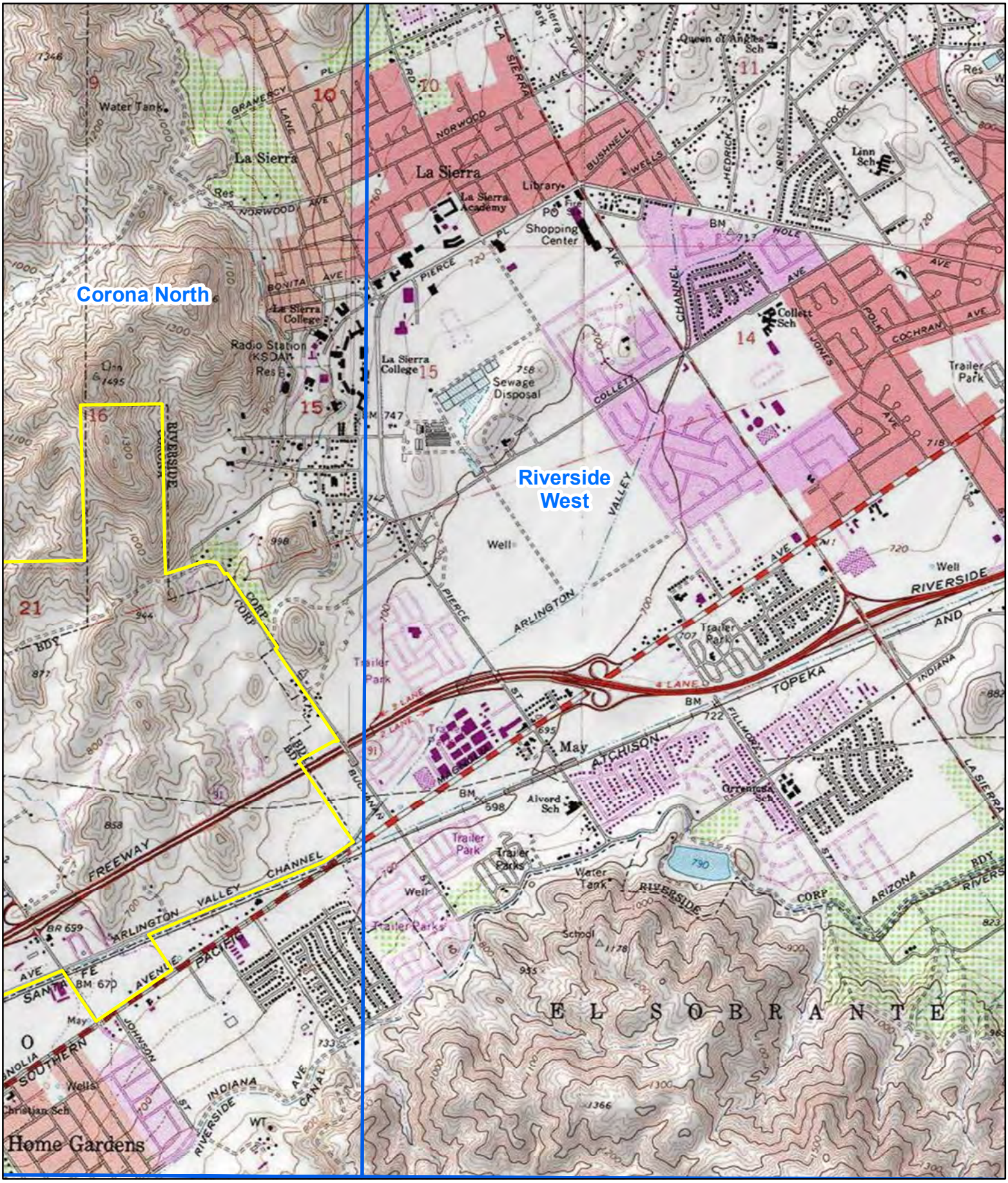


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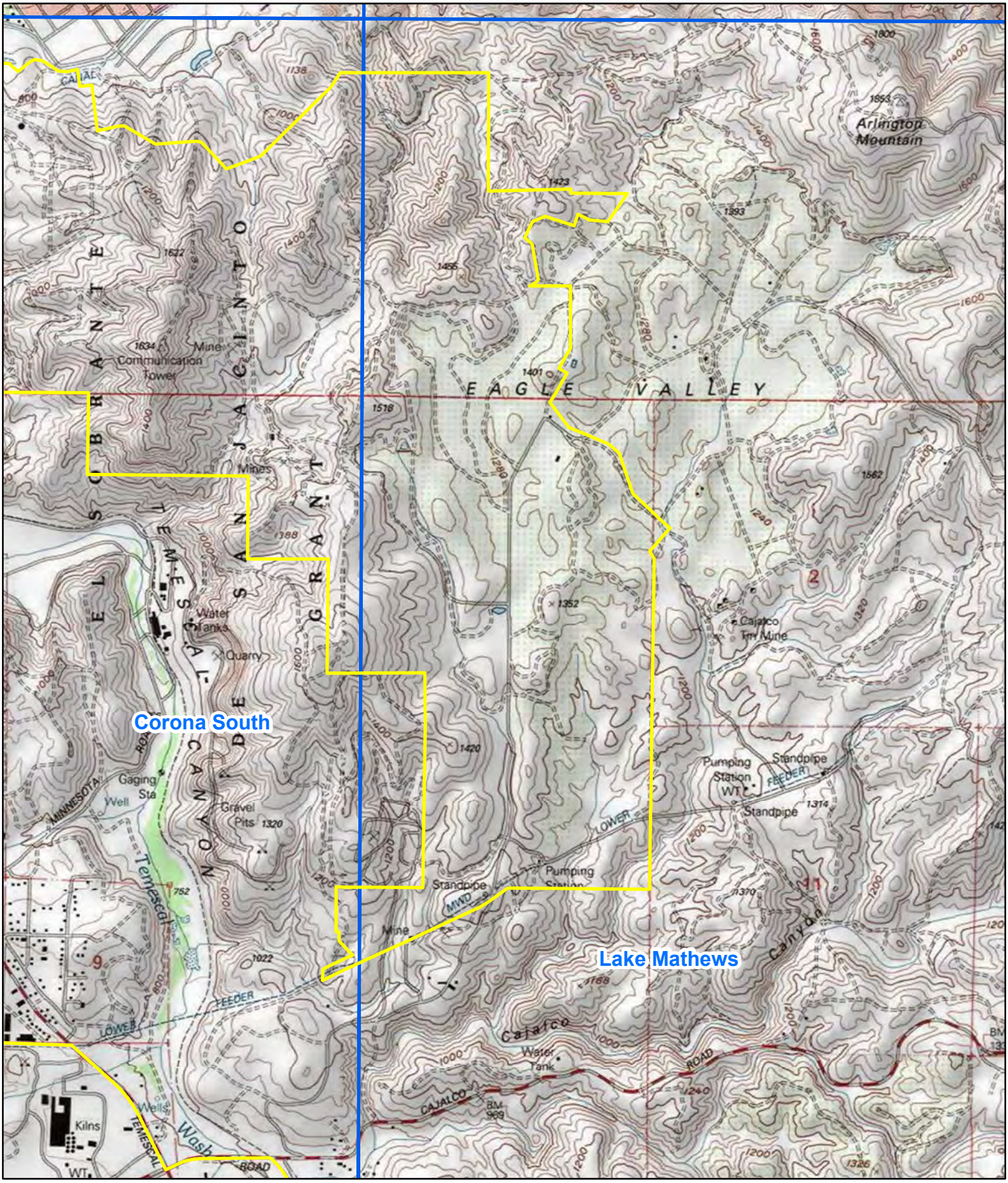
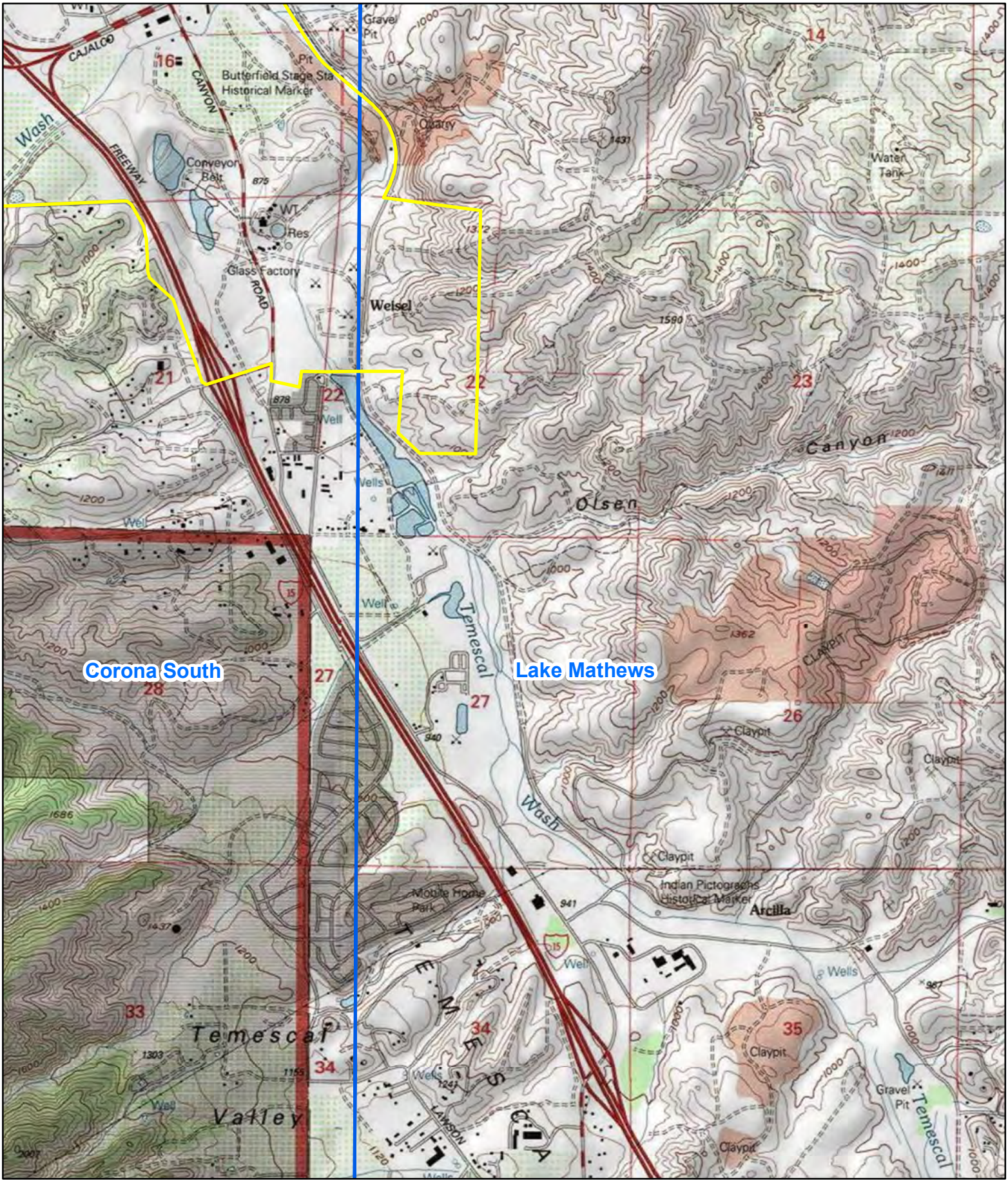


Figure 1. Project Area

RED TAIL ENVIRONMENTAL



1:24,000

0 250 500 1,000 Meters

0 1,000 2,000 4,000 Feet

Legend

- Project Area
- 7.5' USGS Quads

Figure 1. Project Area

RED TAIL ENVIRONMENTAL

RED TAIL ENVIRONMENTAL

April 6, 2020

Cody Martinez
Chairperson
Sycuan Band of the Kumeyaay Nation
1 Kwaaypaay Court, El Cajon, CA, 92019
619-445-2613
ssilva@sycuan-nsn.gov

Re: City of Corona Reclaimed Water Project, Riverside County, California

Dear Mr. Martinez,

Red Tail Environmental (Red Tail) is conducting an archaeological study for the City of Corona Reclaimed Water Project (project), located within the City of Corona, Riverside County, California. The project area includes the entire City of Corona and the city's sphere of influence. The project is subject to the California Environmental Quality Act (CEQA) and will assess the environmental impact of the City of Corona's Reclaimed Water Master Plan. The City of Corona is the lead agency. The project area is shown on the following USGS 7.5' Quad Maps:

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We are contacting you to request additional information regarding the Project area, if you are aware of any issues of cultural concern regarding the area shown on the enclosed map. In particular, we would like to know if you have knowledge of any Traditional Cultural Properties, Sacred Sites, Tribal Cultural Resources, resource collecting areas, or any other areas of concern of which you would wish us to be aware. If you have any questions or concerns regarding the proposed Project, please contact me at the address or phone number listed below, or via email at Shelby@redtailenvironmental.com. We appreciate any input you may have on this project.

Sincerely,



Shelby Castells, M.A., RPA
Director of Archaeology
Attachments: Project Area Maps (1-10)

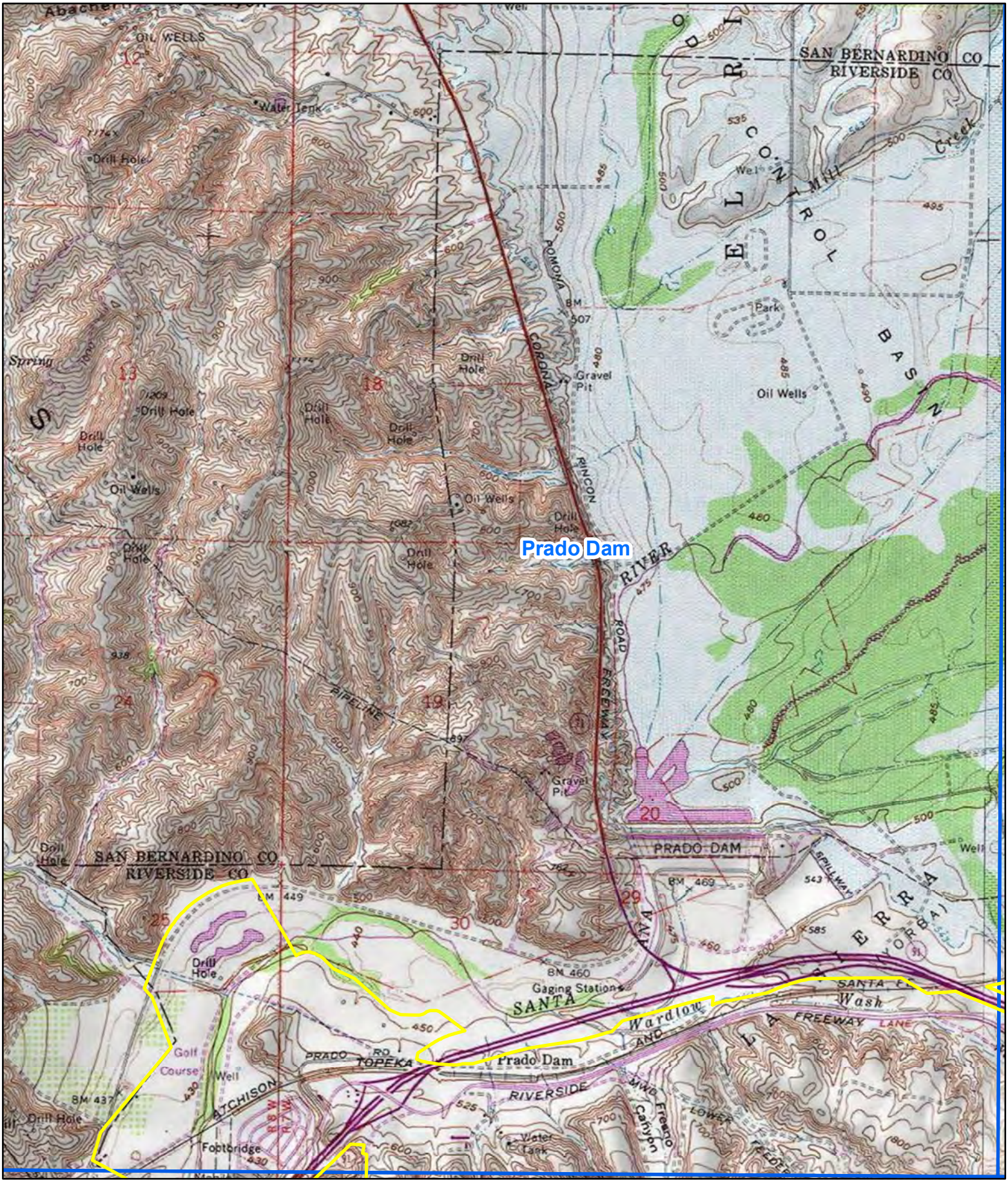


Figure 1. Project Area

RED TAIL ENVIRONMENTAL



Figure 1. Project Area



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Legend

- Project Area
- 7.5' USGS Quads

RED TAIL ENVIRONMENTAL



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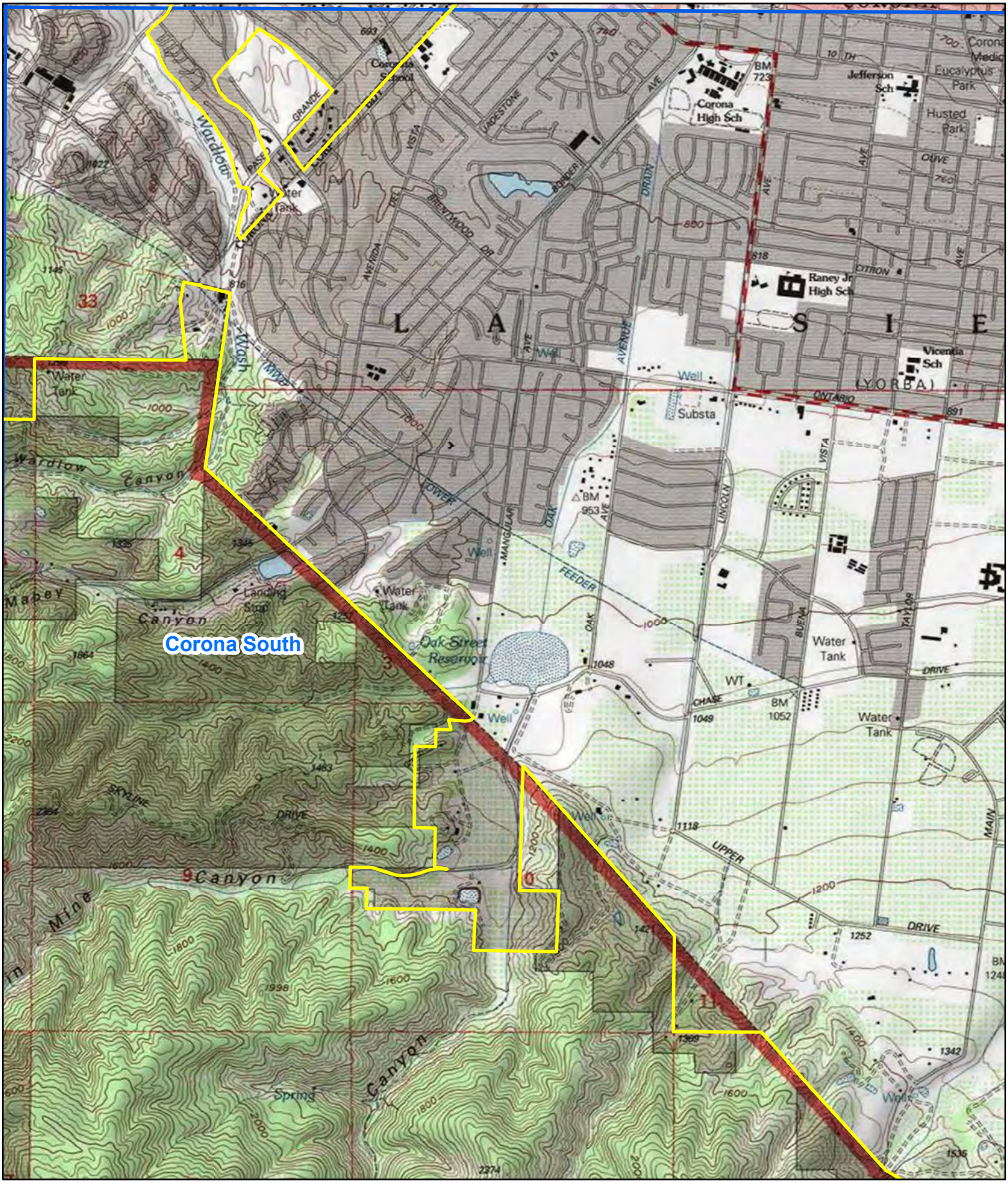


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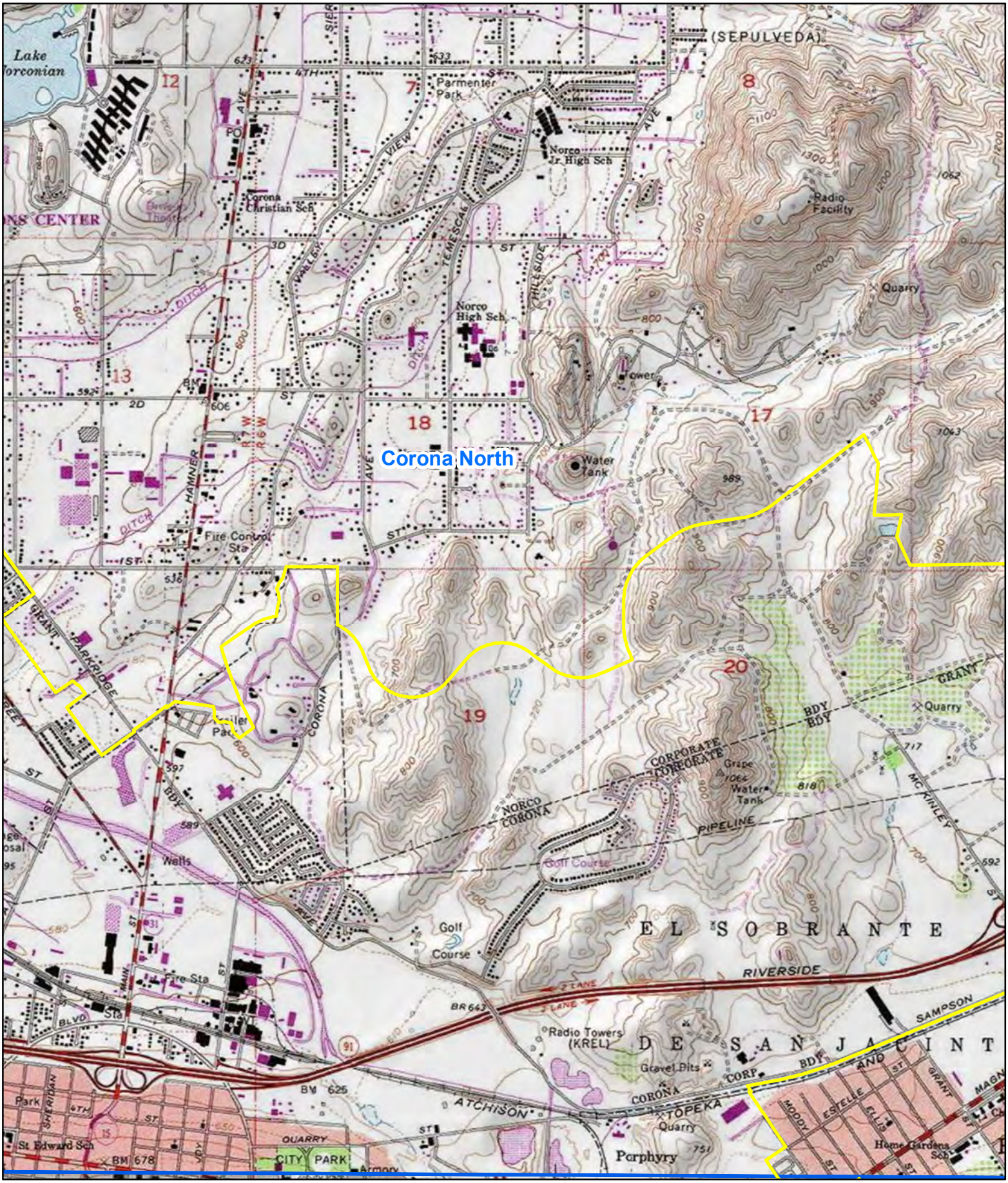
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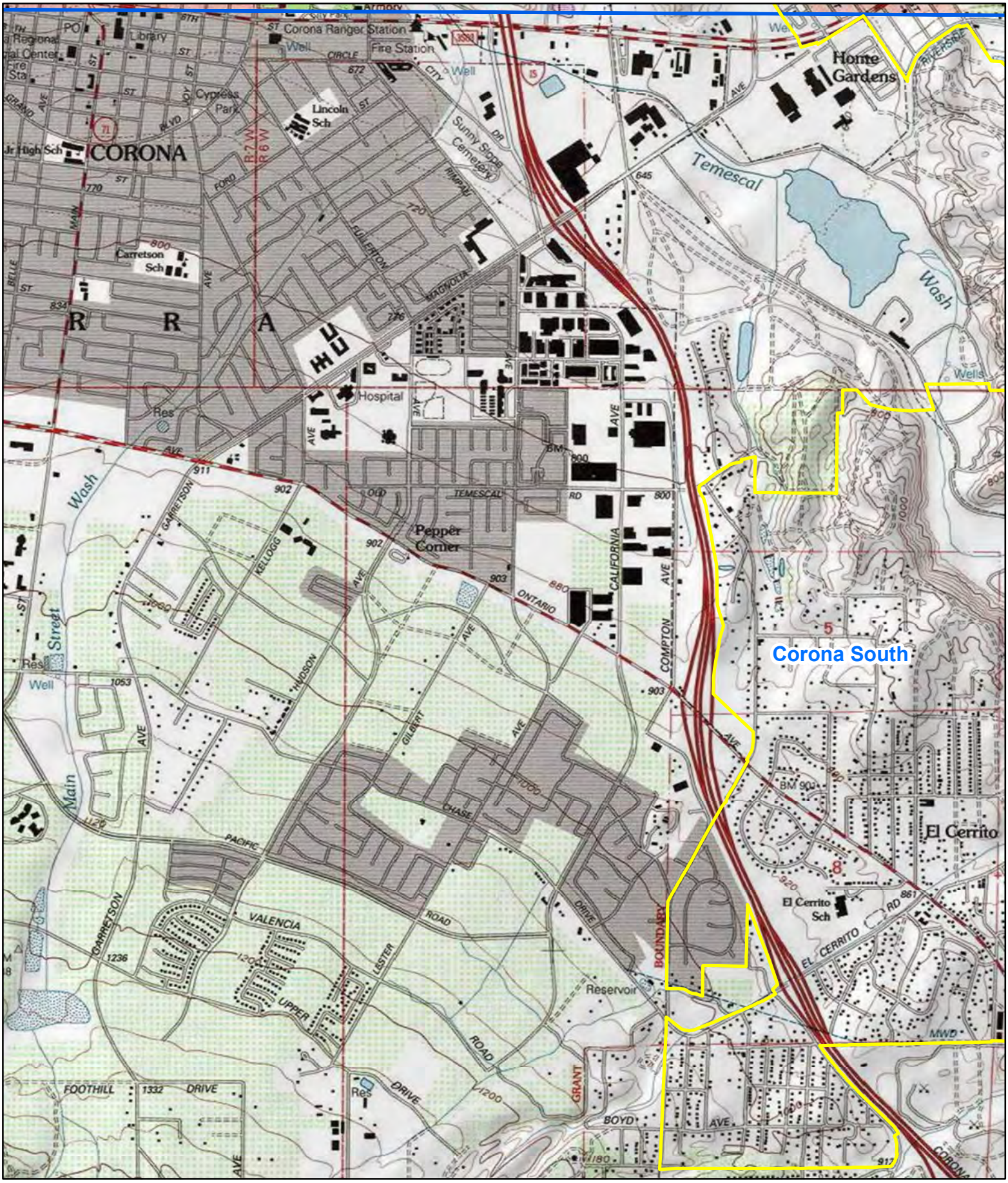


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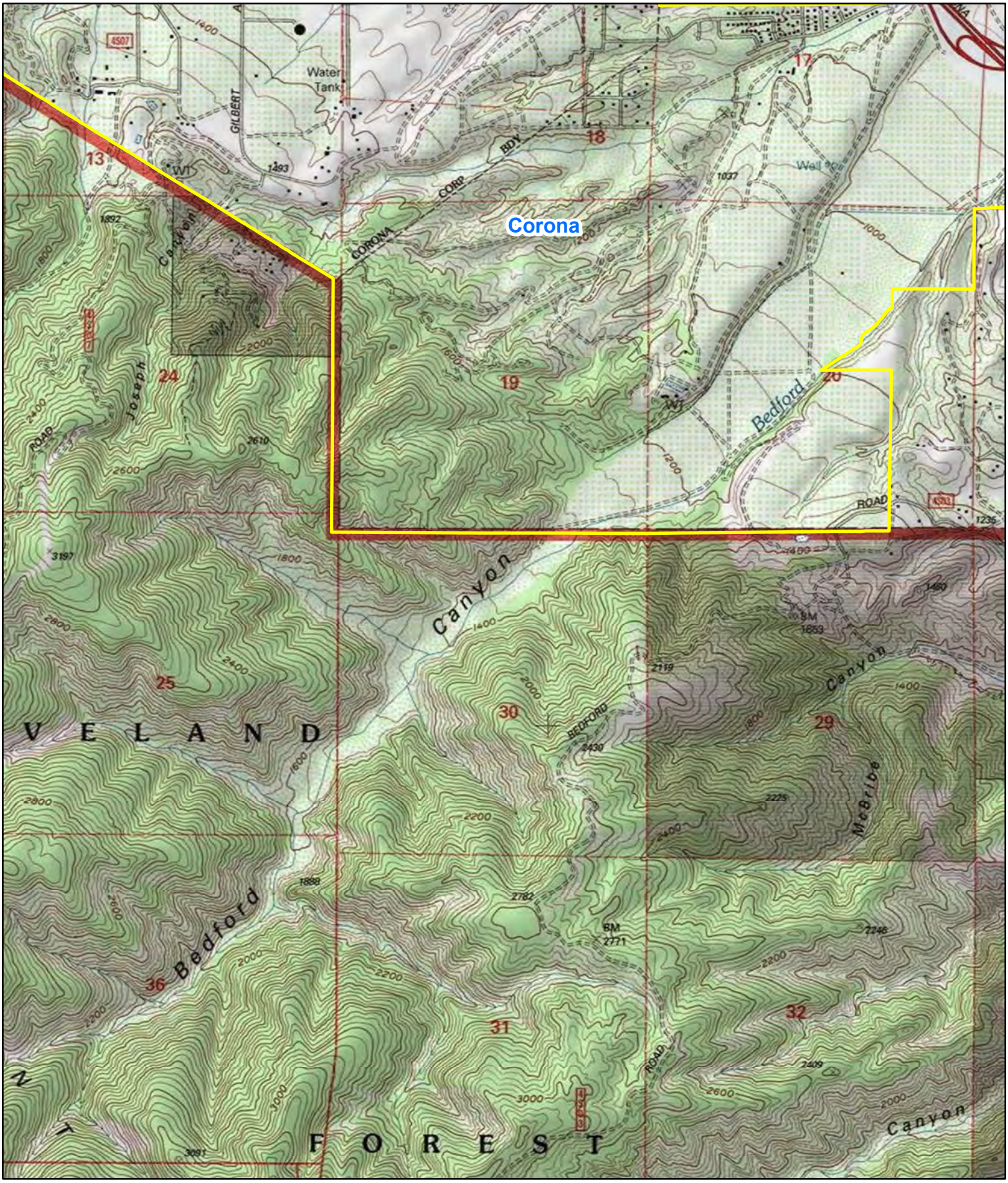


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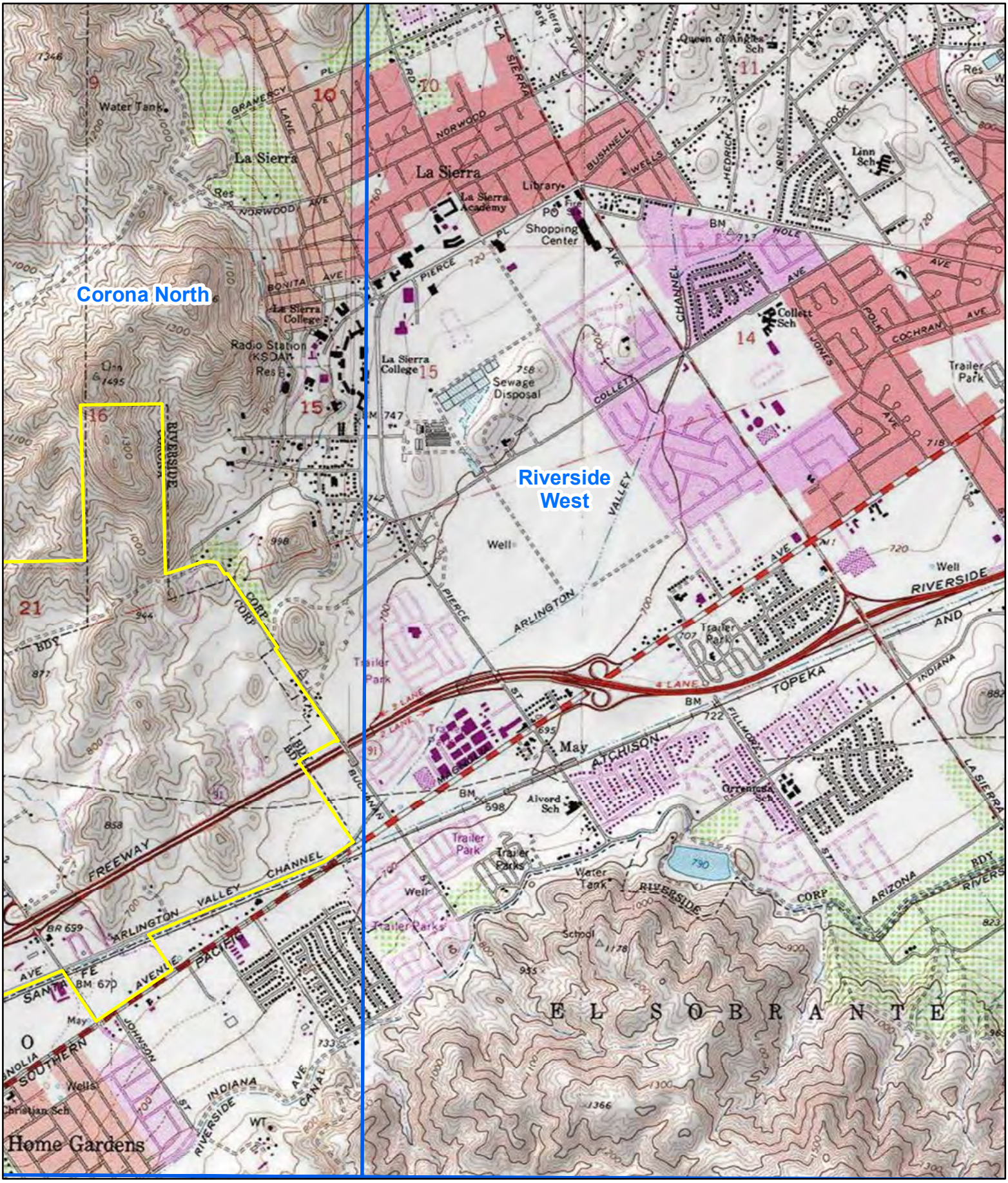


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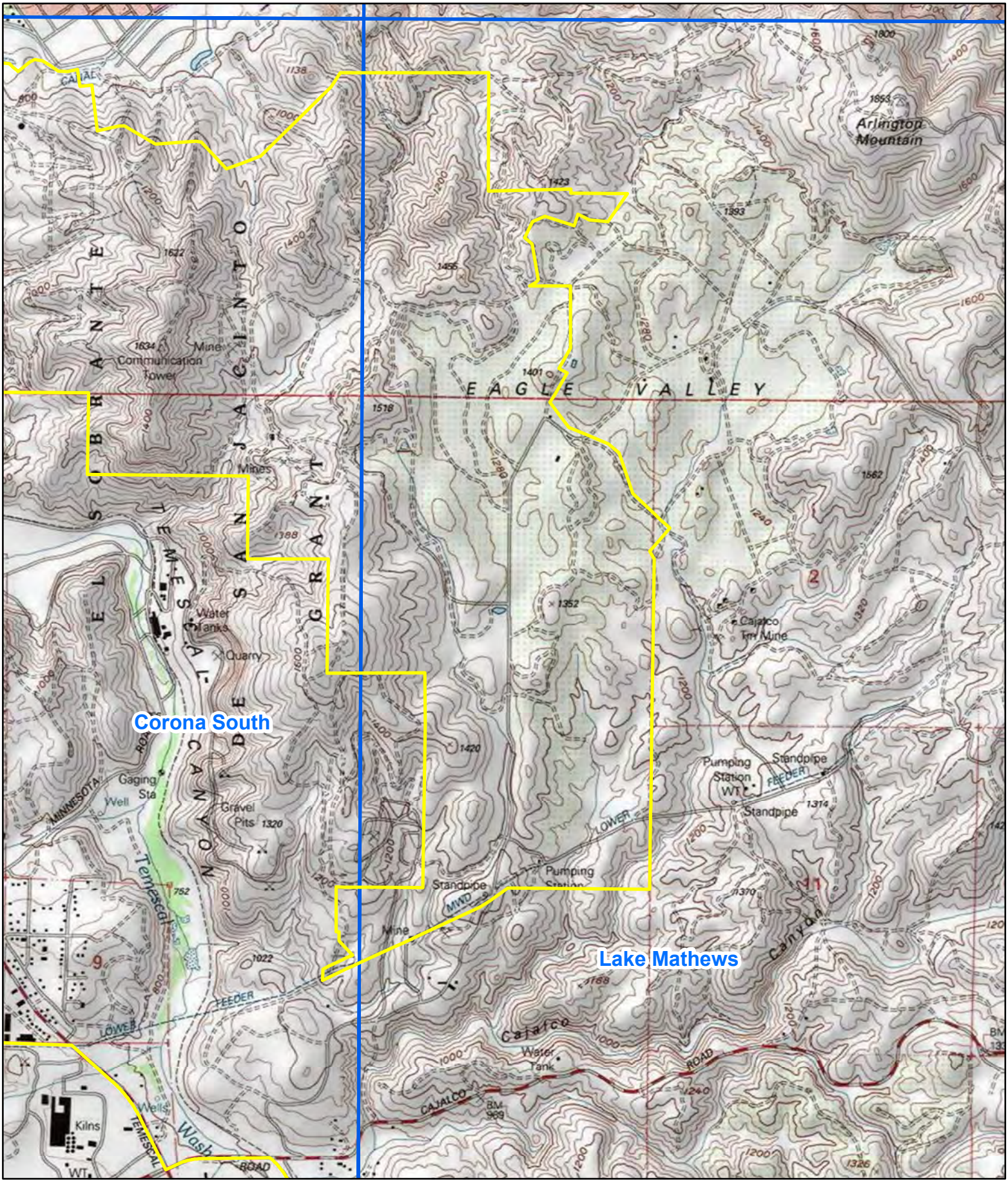
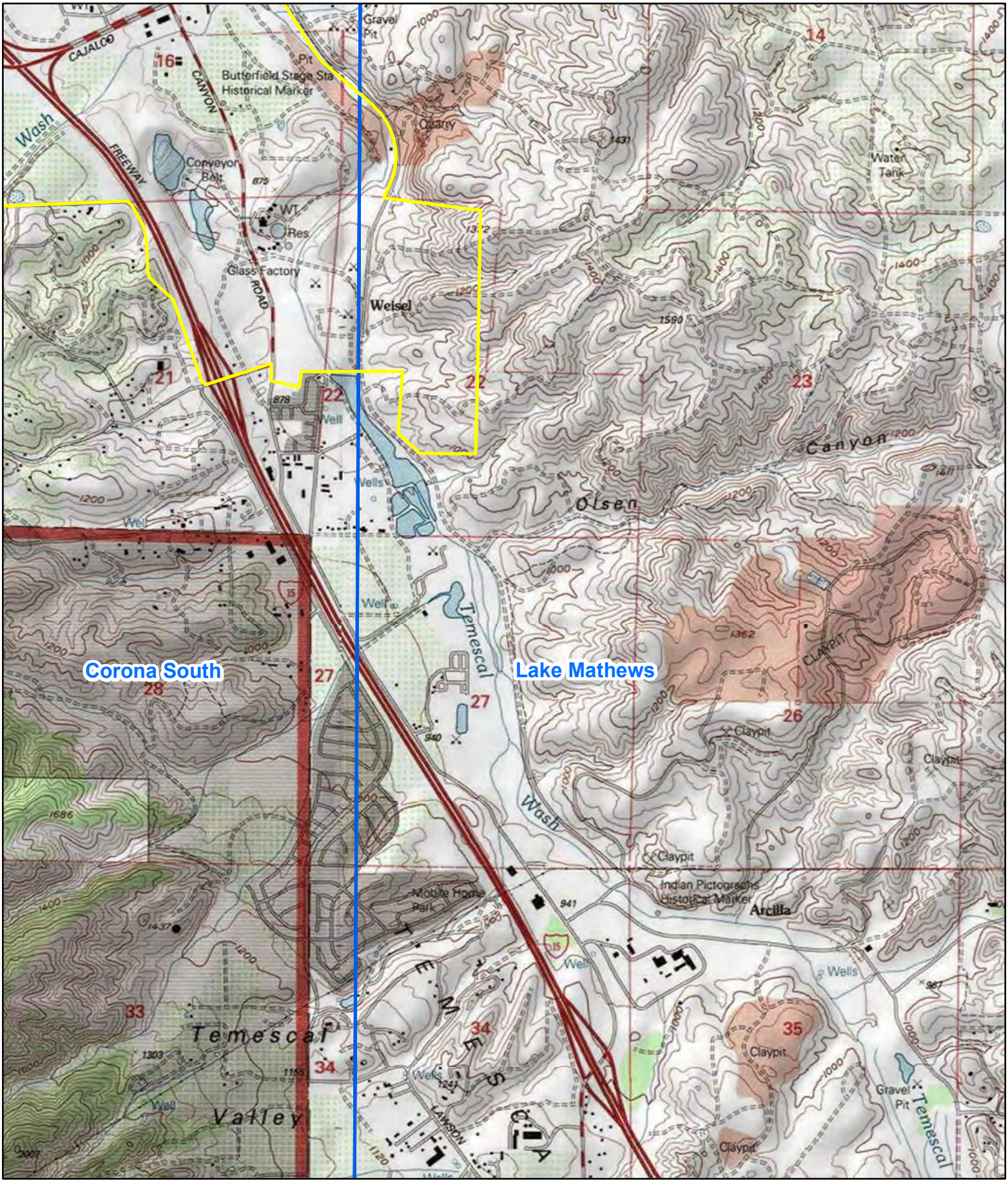


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Figure 1. Project Area

RED TAIL ENVIRONMENTAL

RED TAIL ENVIRONMENTAL

April 6, 2020

Daniel Salgado
Chairperson
Cahuilla Band of Indians
52701 US Highway 371, Anza, CA, 92539
951-763-5549
chairman@cahuilla.net

Re: City of Corona Reclaimed Water Project, Riverside County, California

Dear Mr. Salgado,

Red Tail Environmental (Red Tail) is conducting an archaeological study for the City of Corona Reclaimed Water Project (project), located within the City of Corona, Riverside County, California. The project area includes the entire City of Corona and the city's sphere of influence. The project is subject to the California Environmental Quality Act (CEQA) and will assess the environmental impact of the City of Corona's Reclaimed Water Master Plan. The City of Corona is the lead agency. The project area is shown on the following USGS 7.5' Quad Maps:

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We are contacting you to request additional information regarding the Project area, if you are aware of any issues of cultural concern regarding the area shown on the enclosed map. In particular, we would like to know if you have knowledge of any Traditional Cultural Properties, Sacred Sites, Tribal Cultural Resources, resource collecting areas, or any other areas of concern of which you would wish us to be aware. If you have any questions or concerns regarding the proposed Project, please contact me at the address or phone number listed below, or via email at Shelby@redtailenvironmental.com. We appreciate any input you may have on this project.

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Shelby Castells, M.A., RPA
Director of Archaeology
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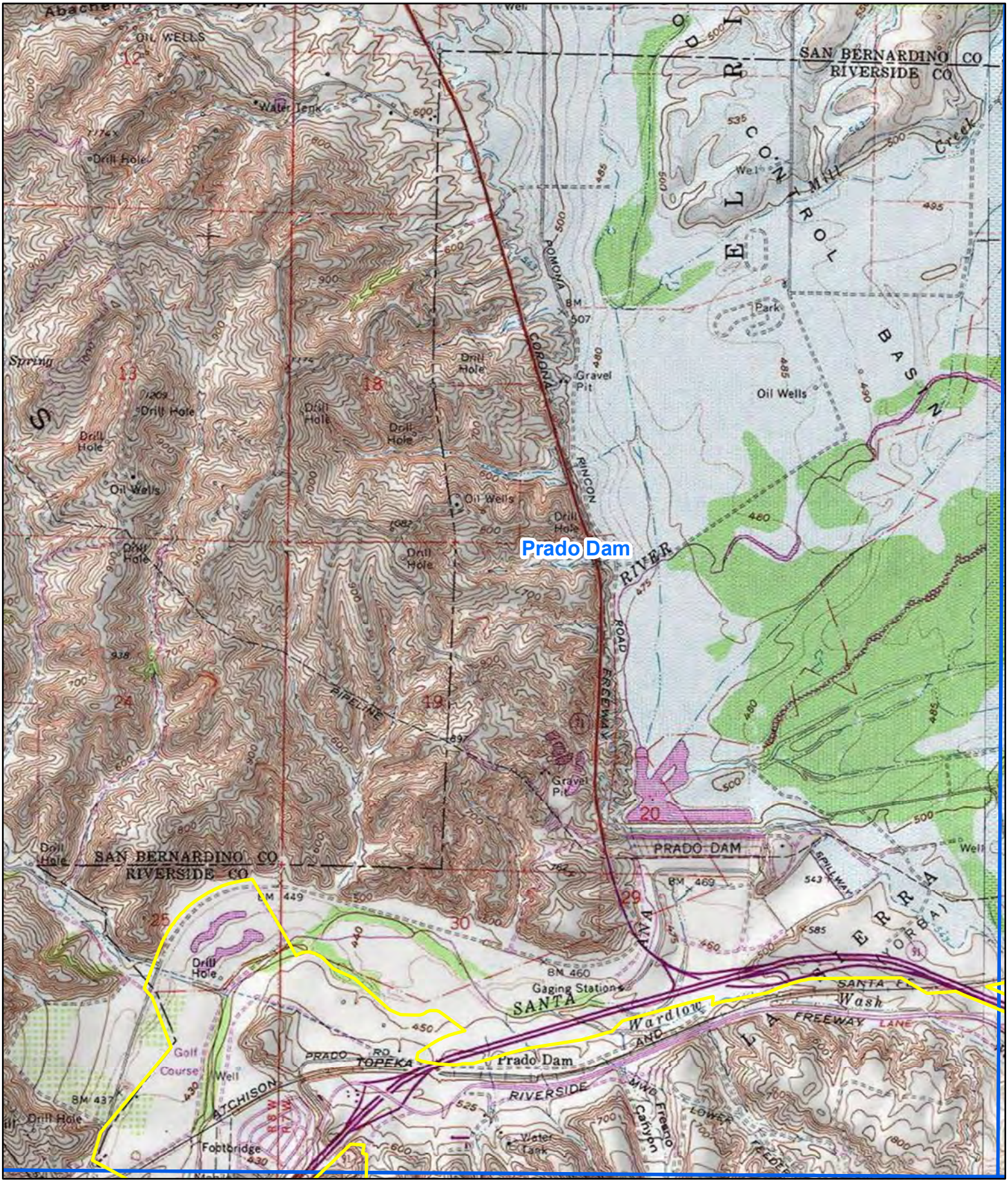


Figure 1. Project Area

RED TAIL ENVIRONMENTAL



Figure 1. Project Area



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Legend

- Project Area
- 7.5' USGS Quads

RED TAIL ENVIRONMENTAL



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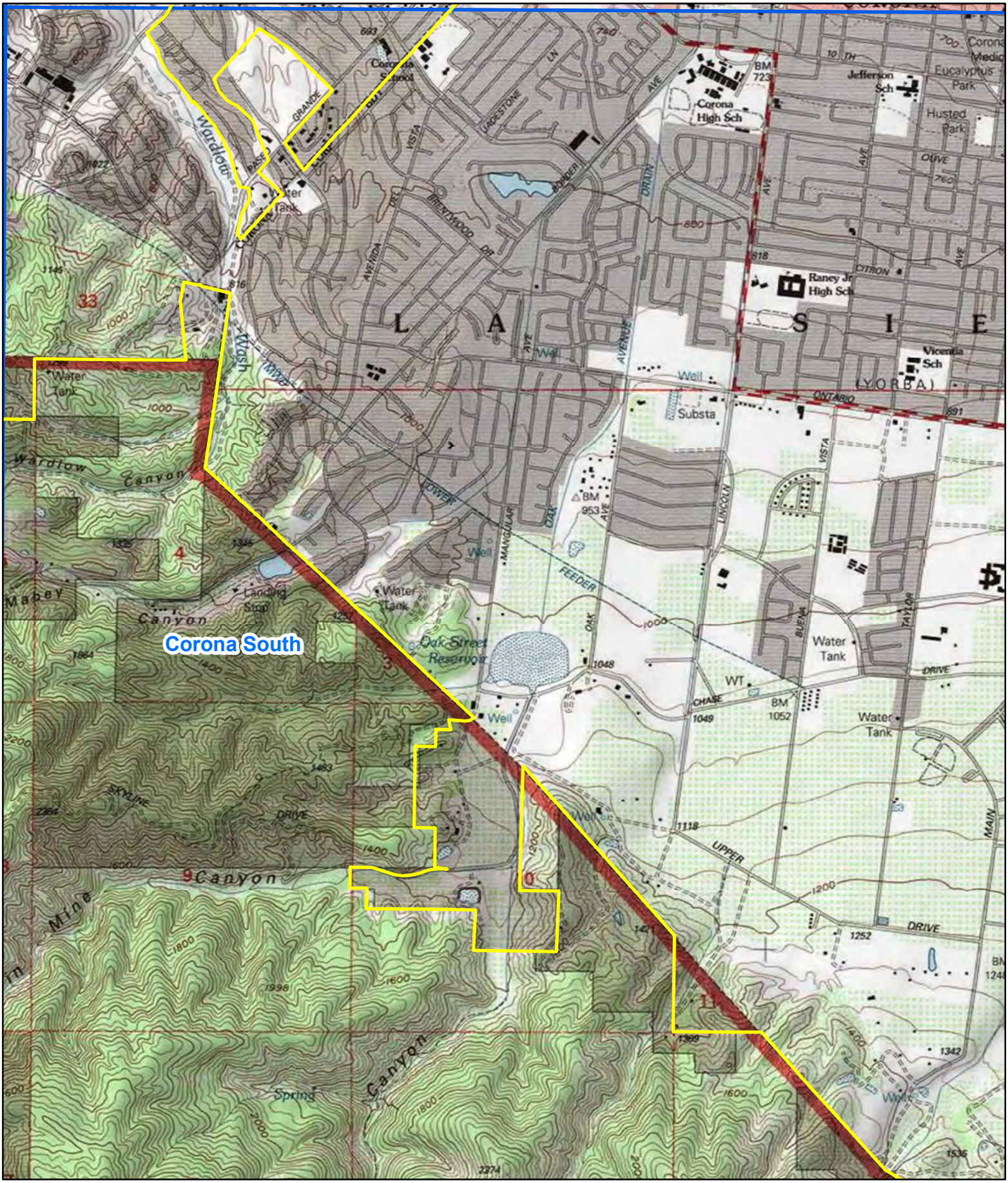


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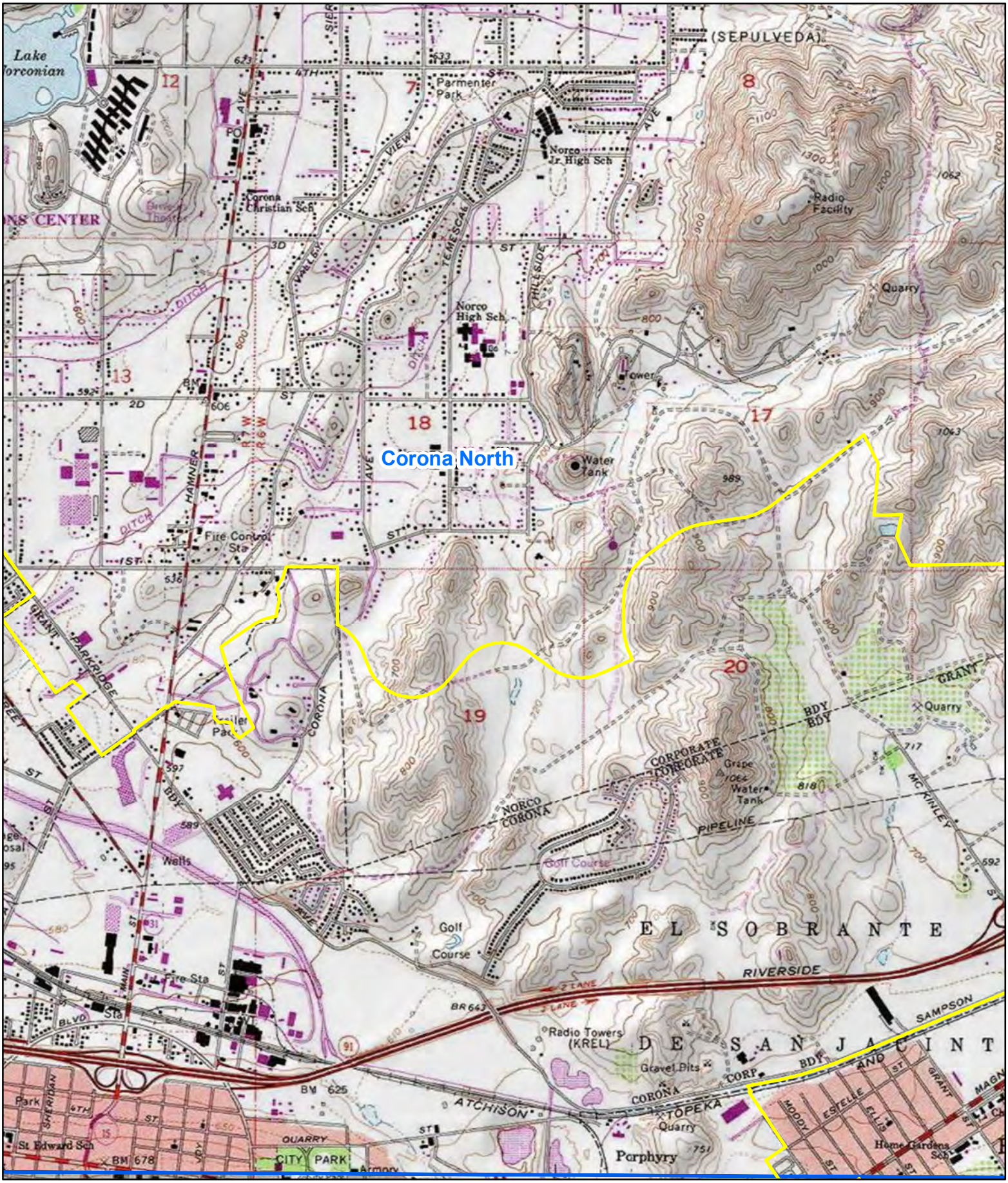
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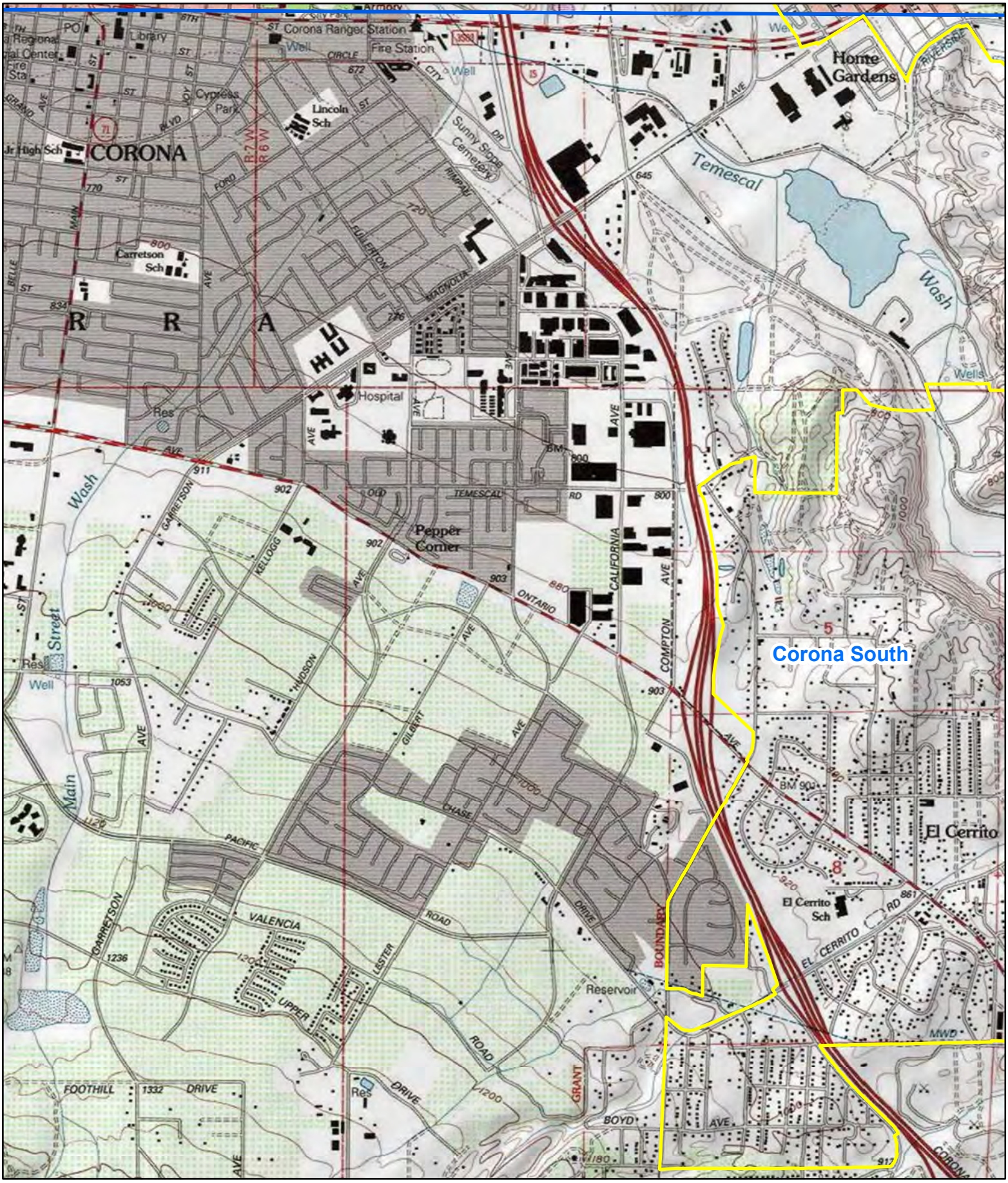


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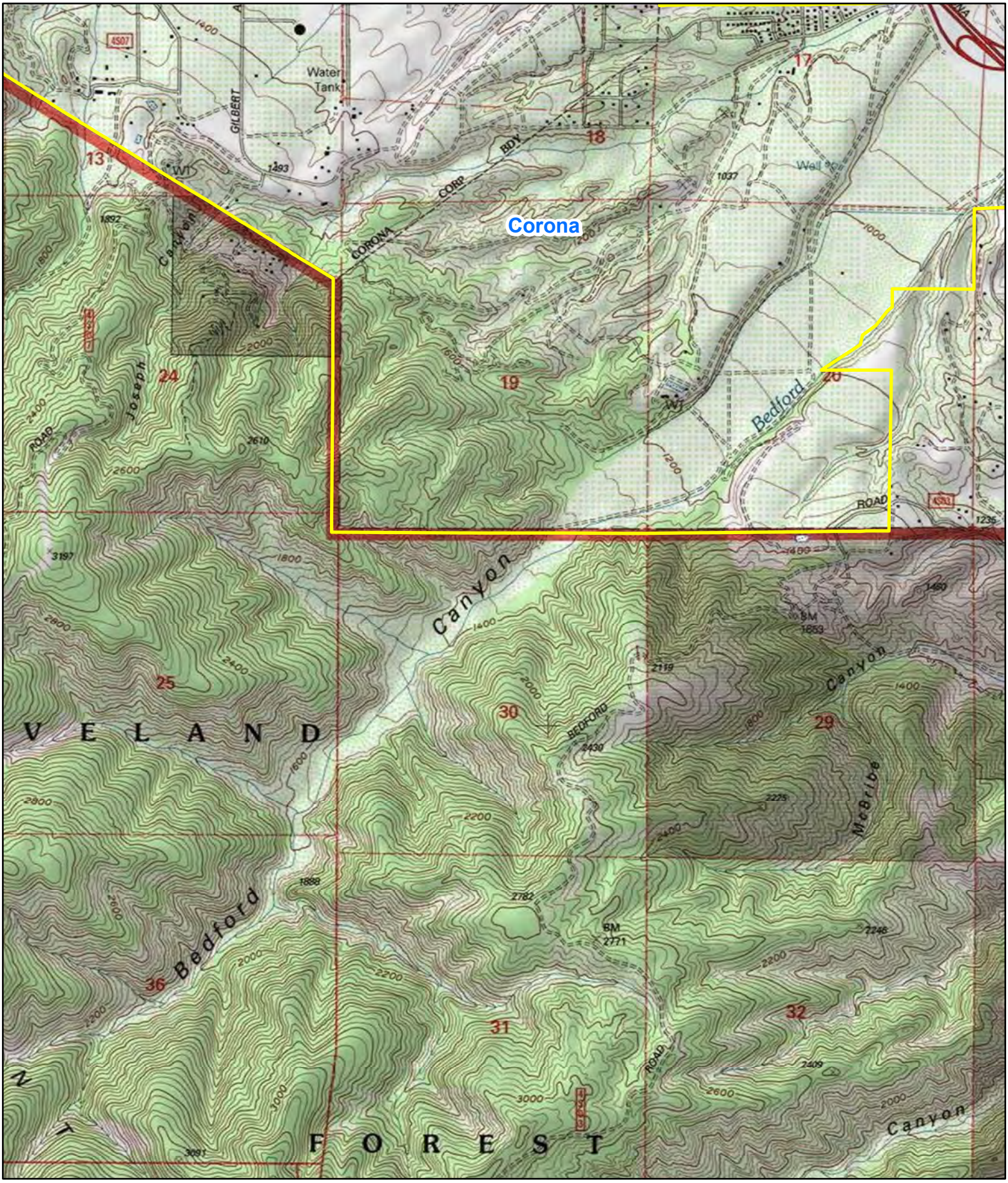
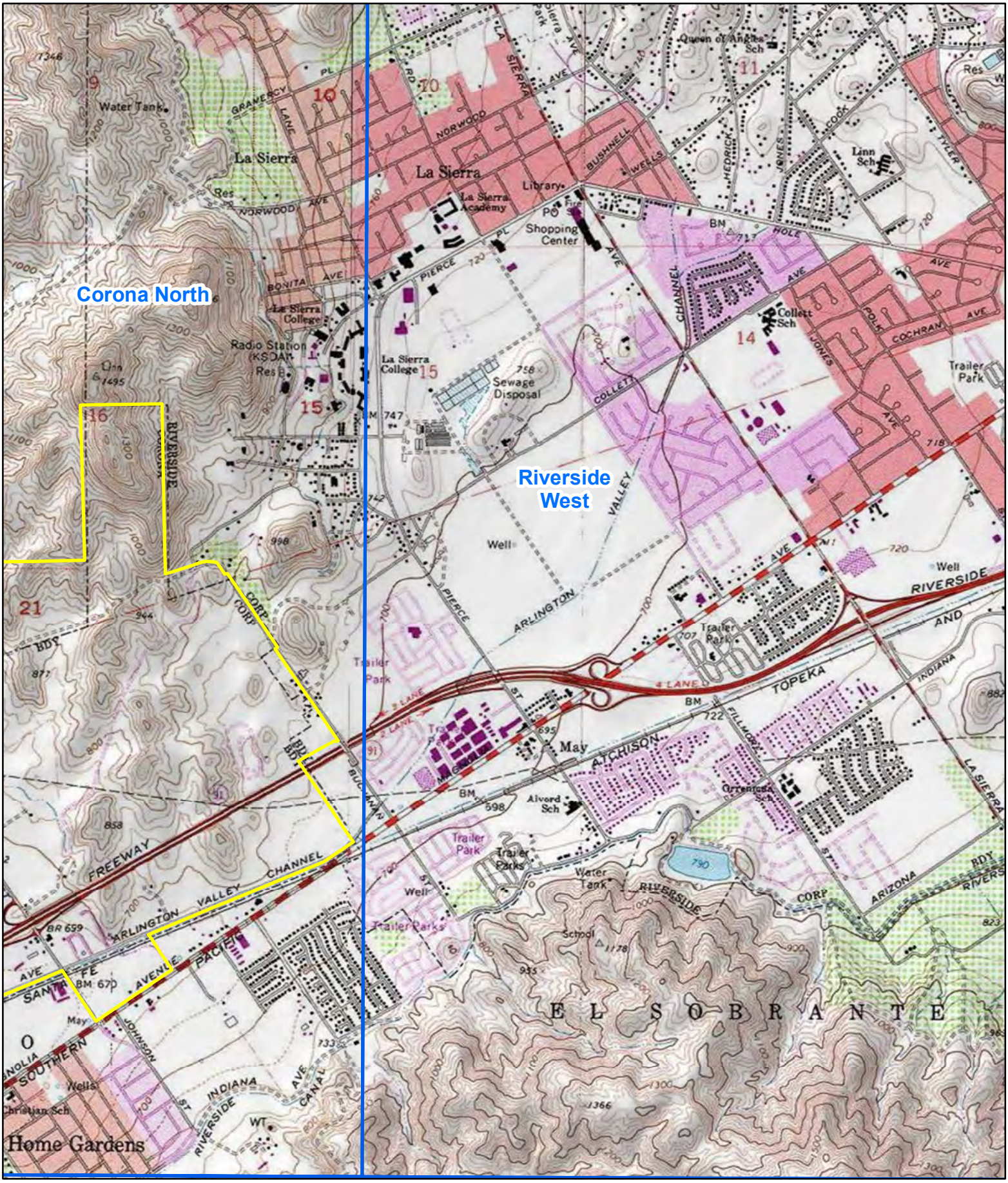


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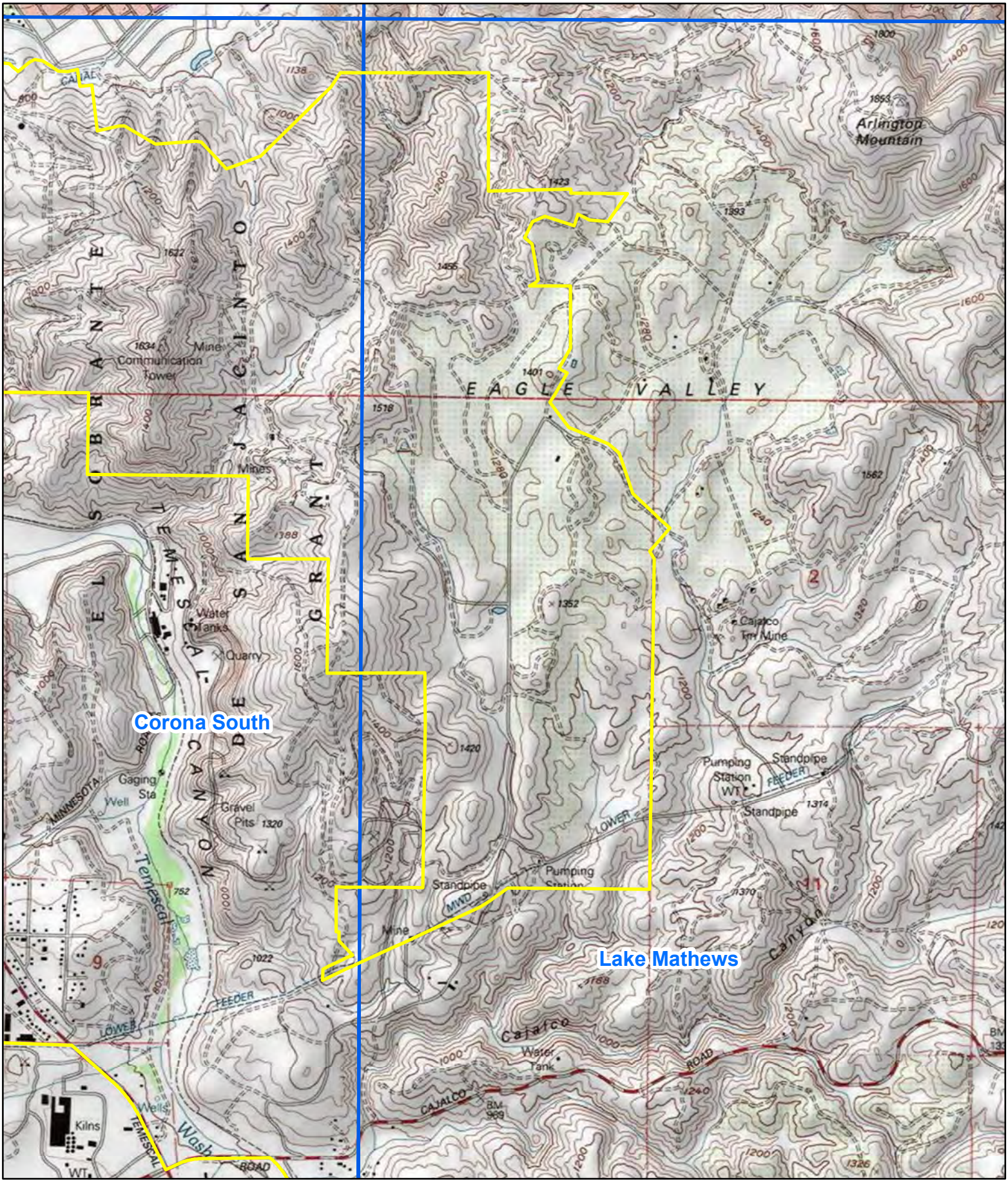
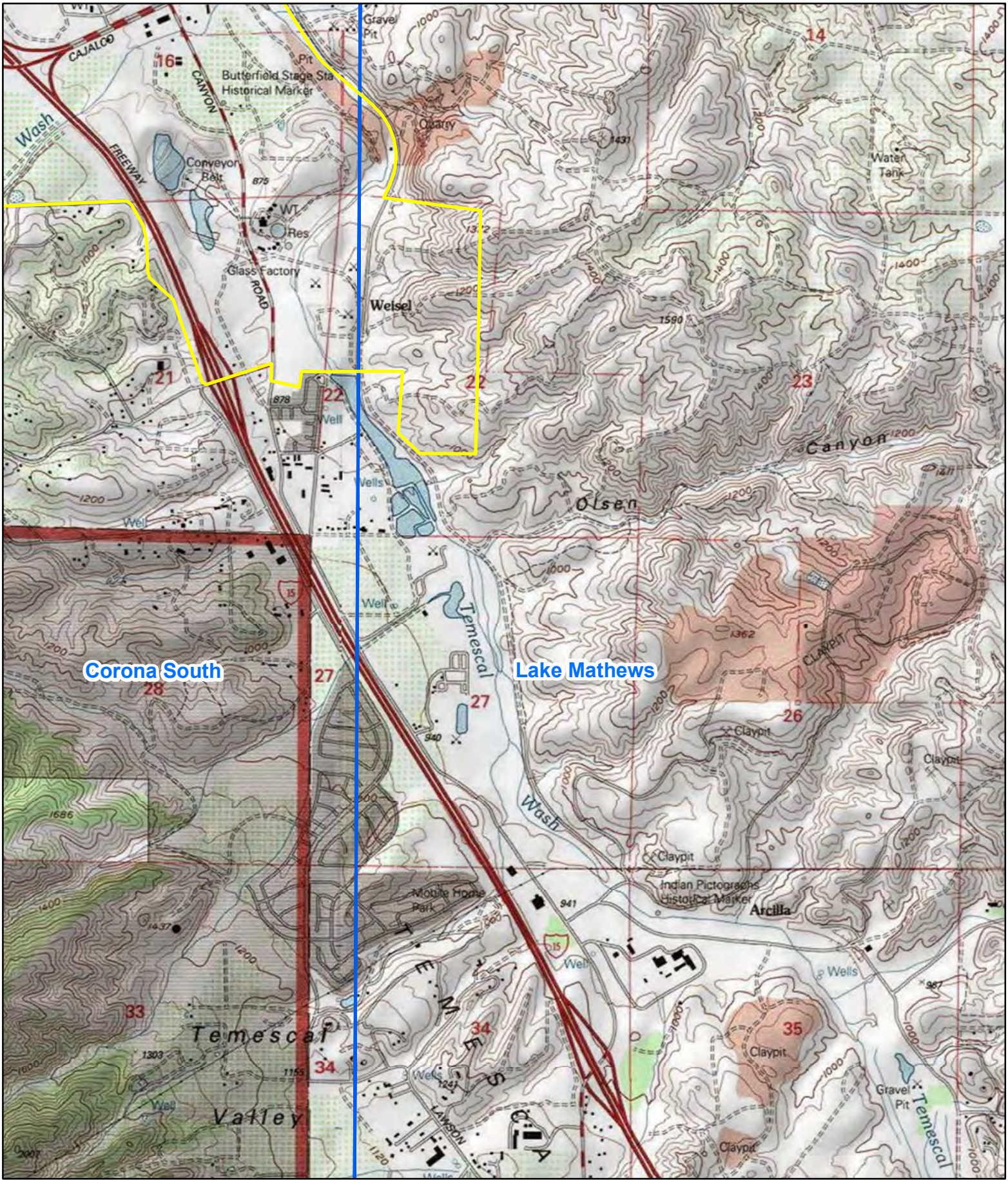


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RED TAIL ENVIRONMENTAL

RED TAIL ENVIRONMENTAL

April 6, 2020

Doug Welmas
Chairperson
Cabazon Band of Mission Indians
84-245 Indio Springs Parkway, Indio, CA, 92203
760-342-2593
jstapp@cabazonindians-nsn.gov

Re: City of Corona Reclaimed Water Project, Riverside County, California

Dear Mr. Welmas,

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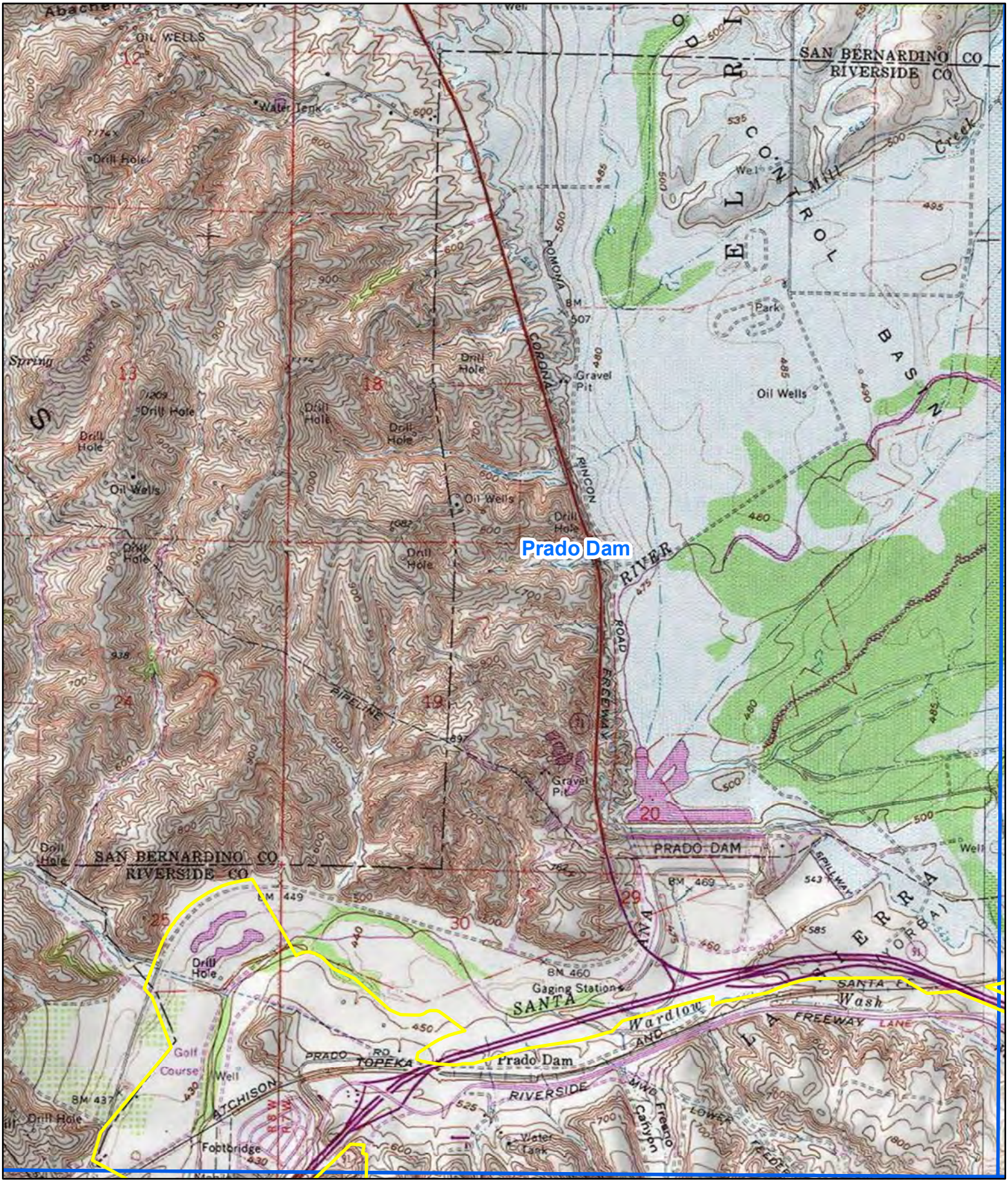


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RED TAIL ENVIRONMENTAL



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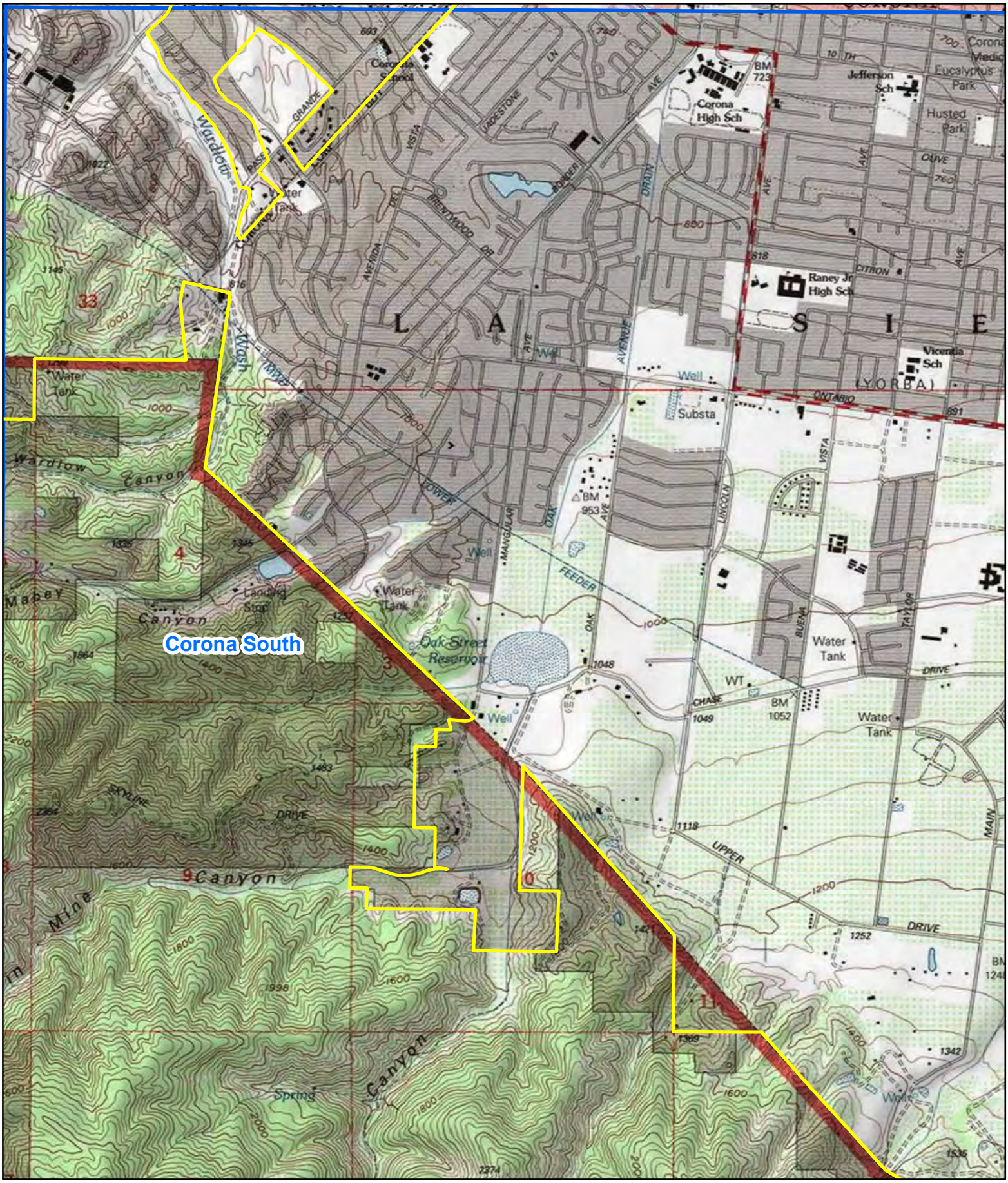


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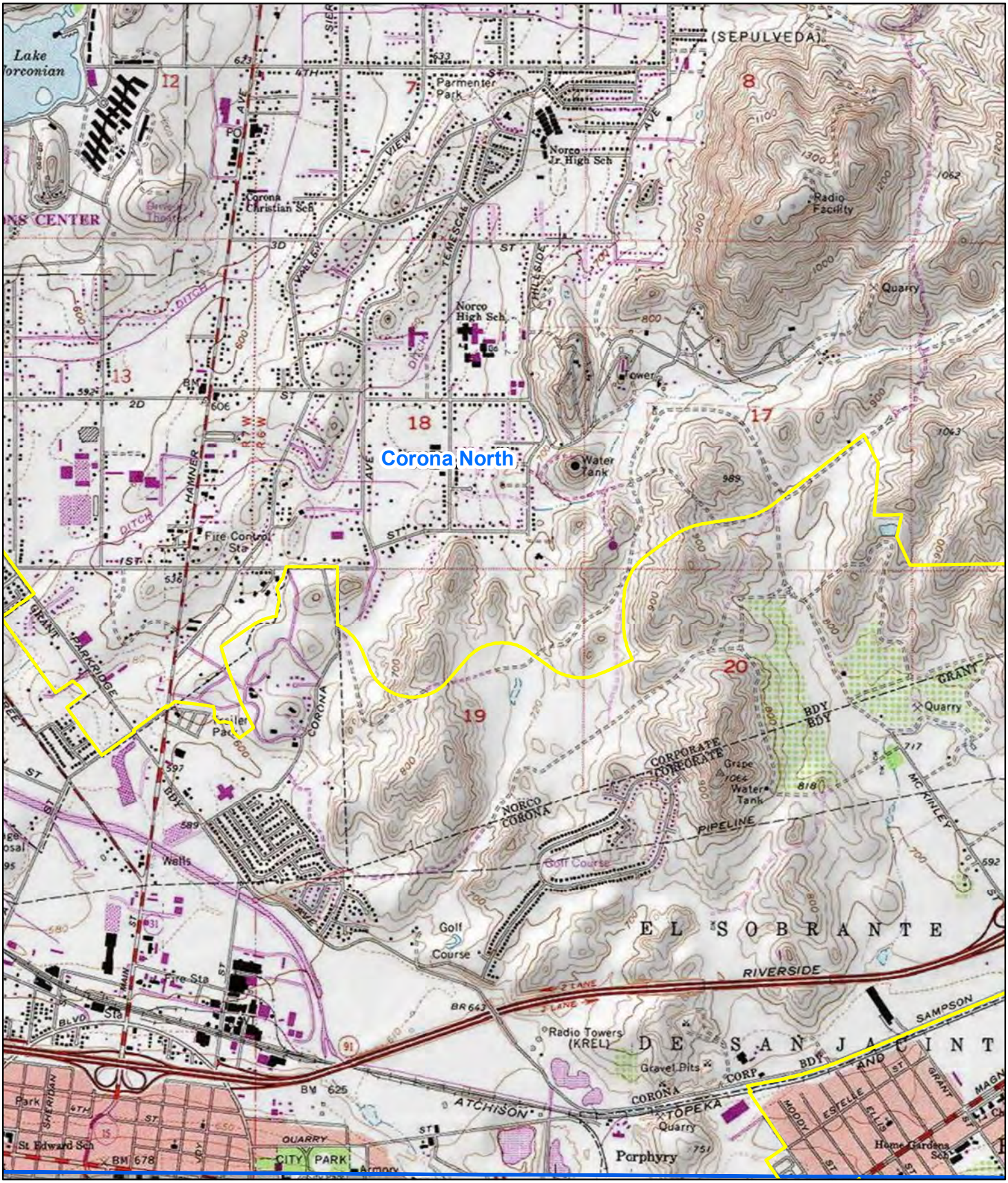
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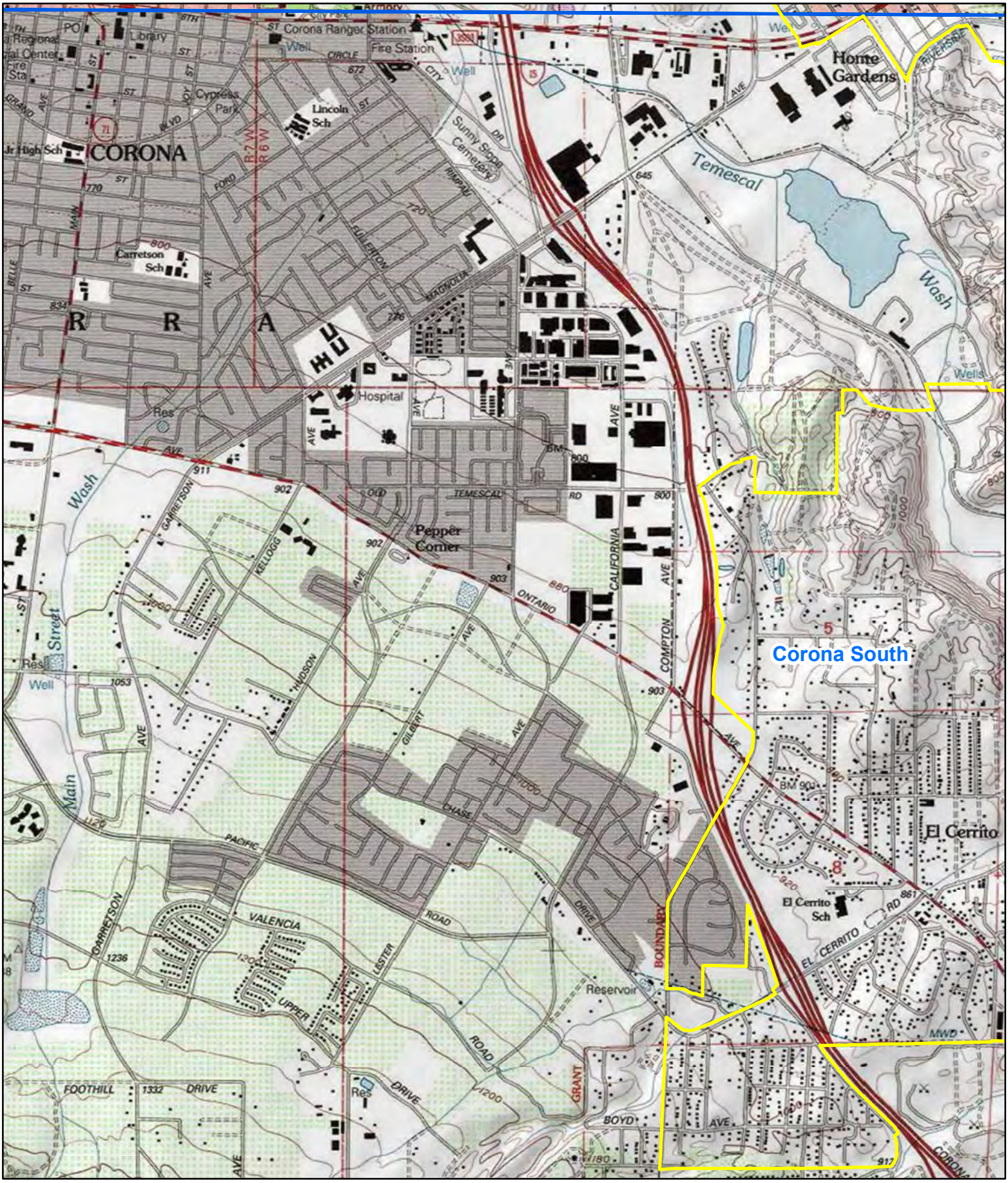


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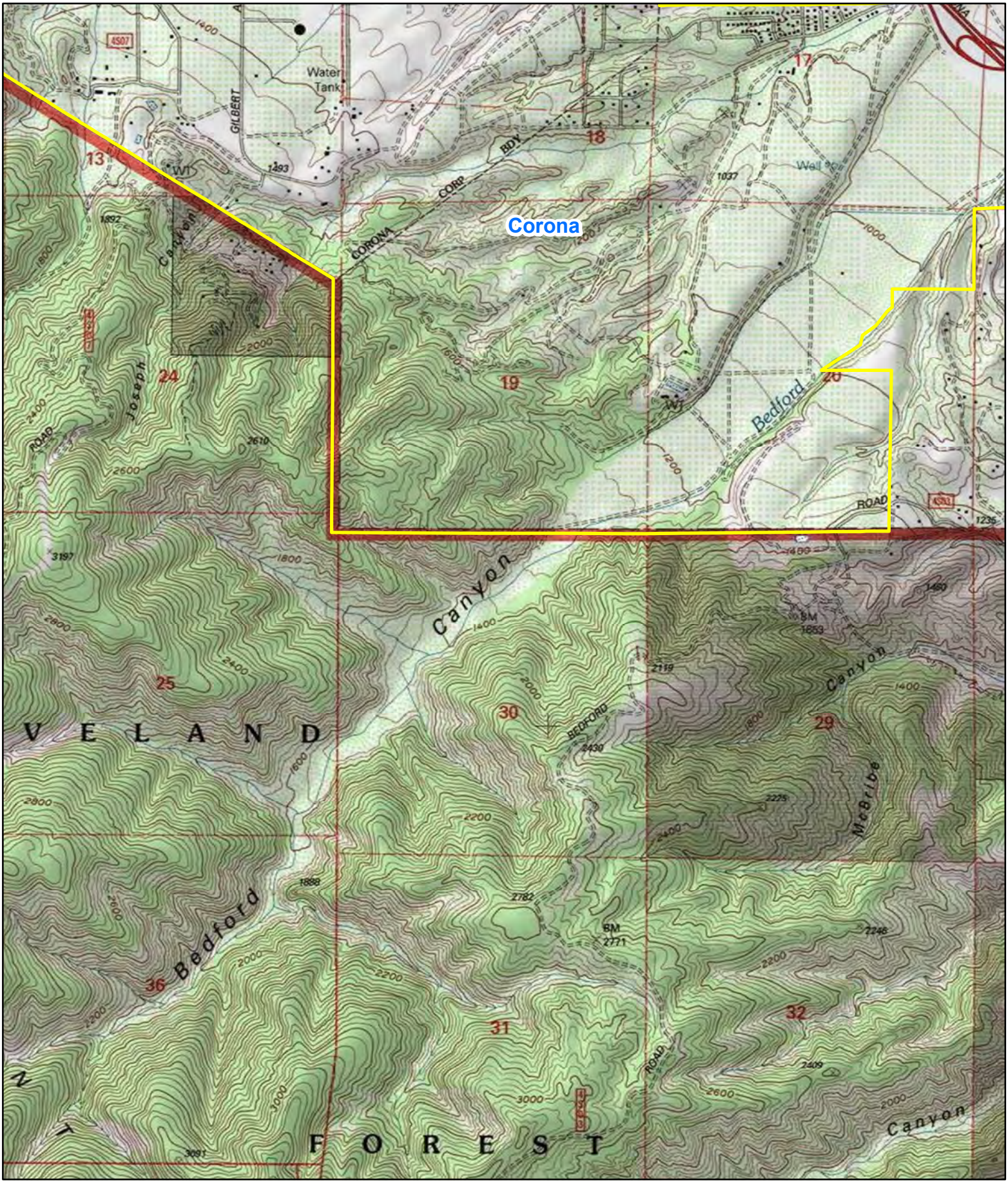


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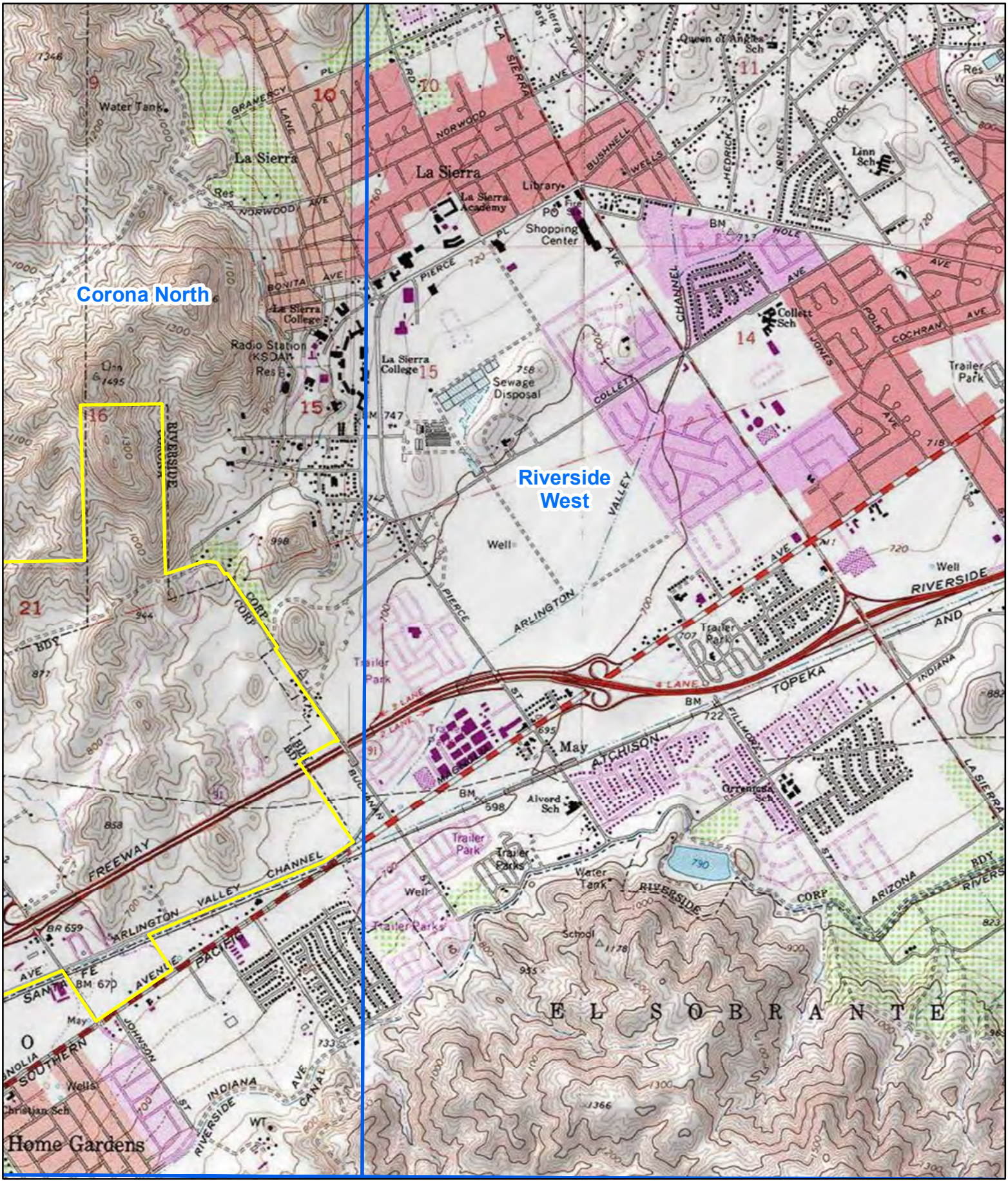


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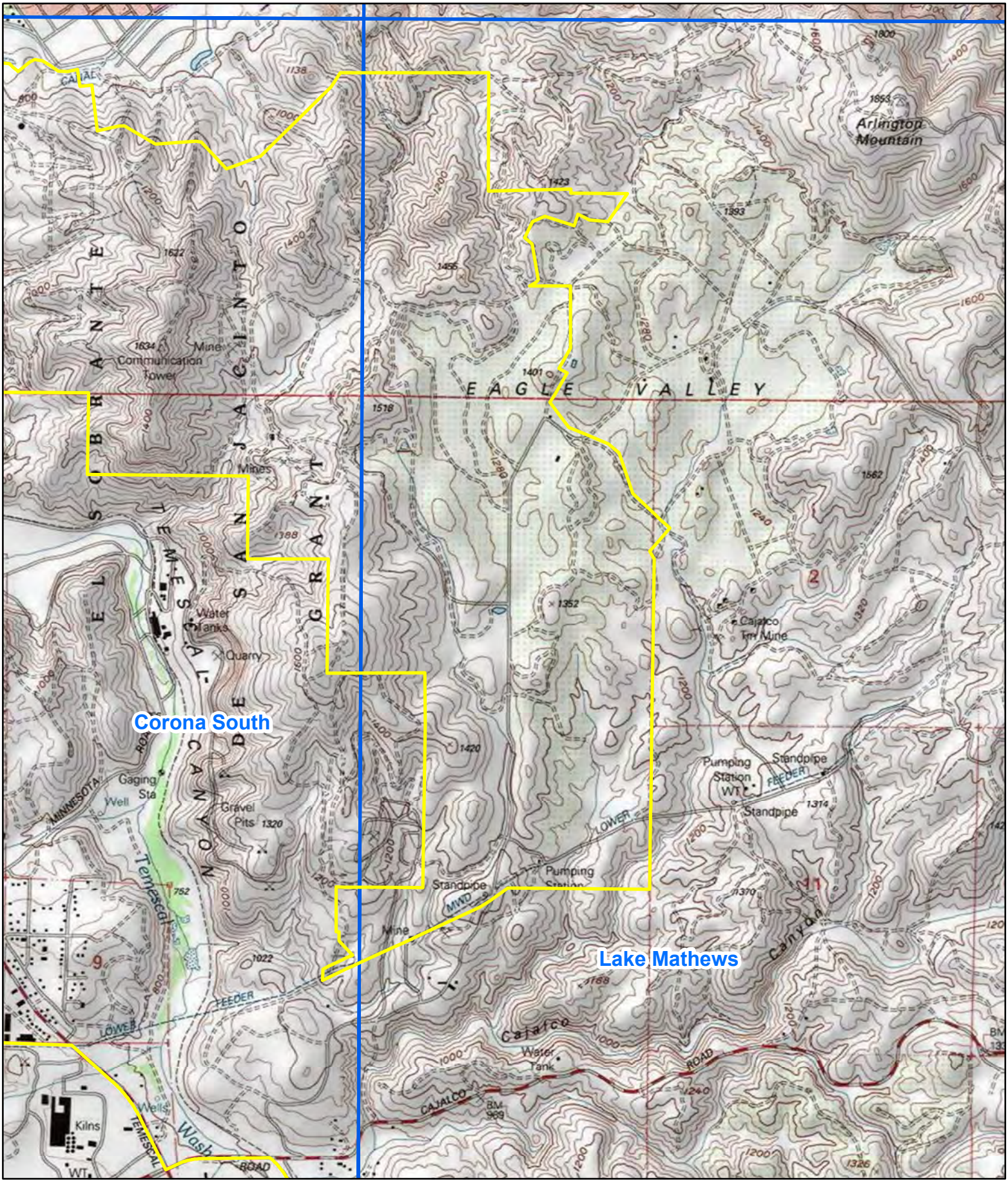
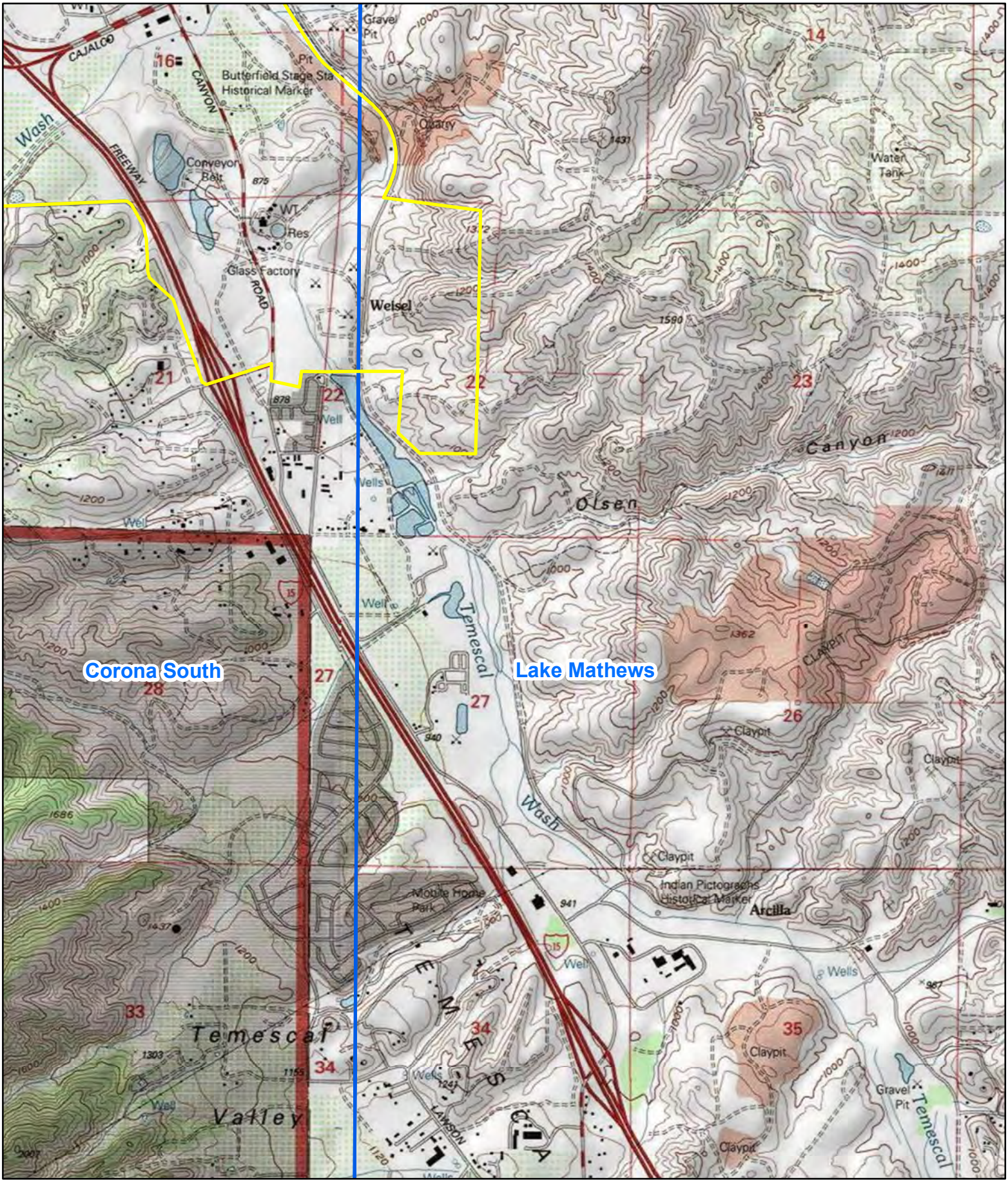


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RED TAIL ENVIRONMENTAL

RED TAIL ENVIRONMENTAL

April 6, 2020

Donna Yocum
Chairperson
San Fernando Band of Mission Indians
PO Box 221838, Newhall, CA, 91322
503-539-0933
ddyocum@comcast.net

Re: City of Corona Reclaimed Water Project, Riverside County, California

Dear Ms. Yocum,

Red Tail Environmental (Red Tail) is conducting an archaeological study for the City of Corona Reclaimed Water Project (project), located within the City of Corona, Riverside County, California. The project area includes the entire City of Corona and the city's sphere of influence. The project is subject to the California Environmental Quality Act (CEQA) and will assess the environmental impact of the City of Corona's Reclaimed Water Master Plan. The City of Corona is the lead agency. The project area is shown on the following USGS 7.5' Quad Maps:

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Sincerely,



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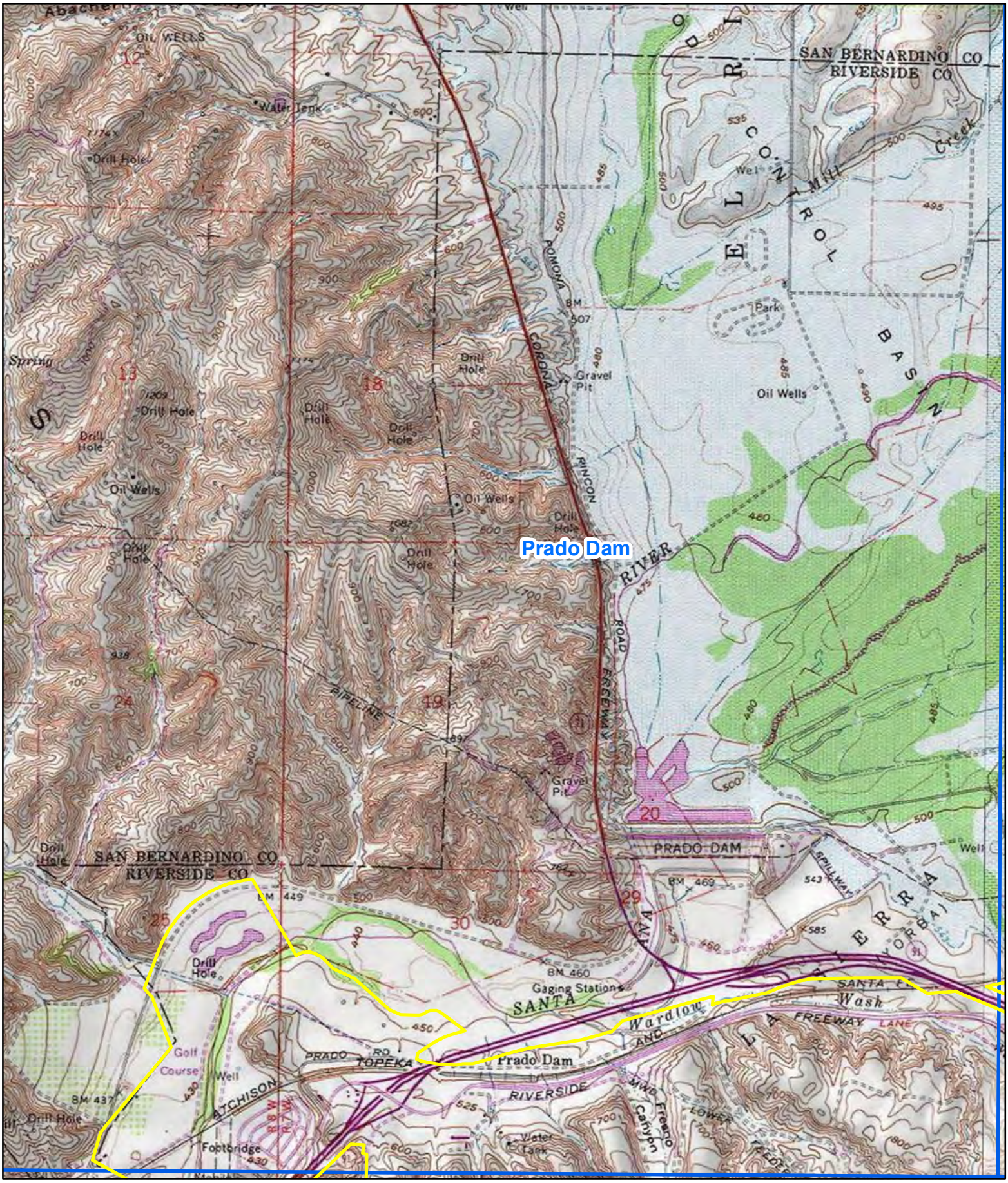


Figure 1. Project Area

RED TAIL ENVIRONMENTAL



Figure 1. Project Area



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Legend

- Project Area
- 7.5' USGS Quads

RED TAIL ENVIRONMENTAL



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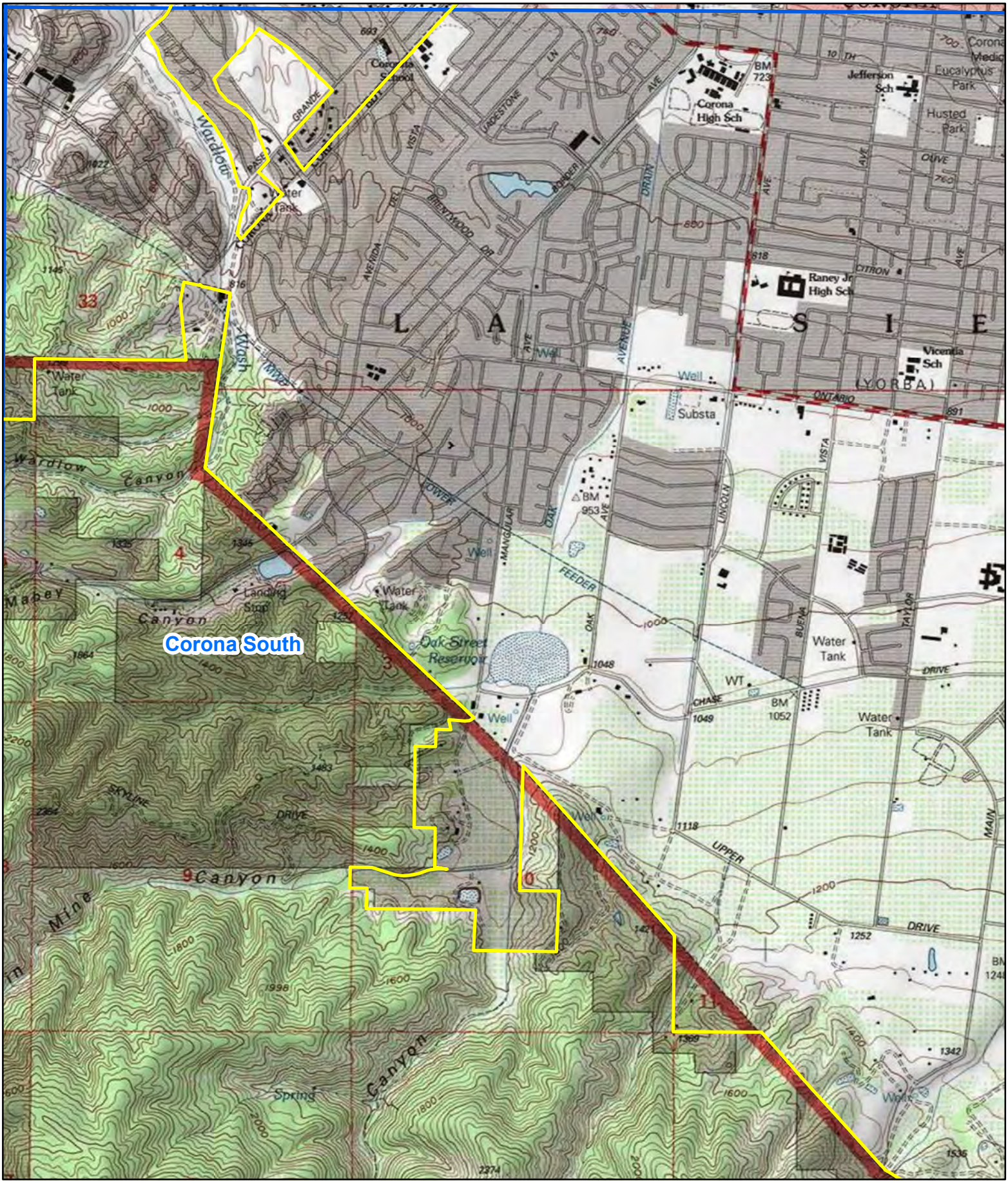


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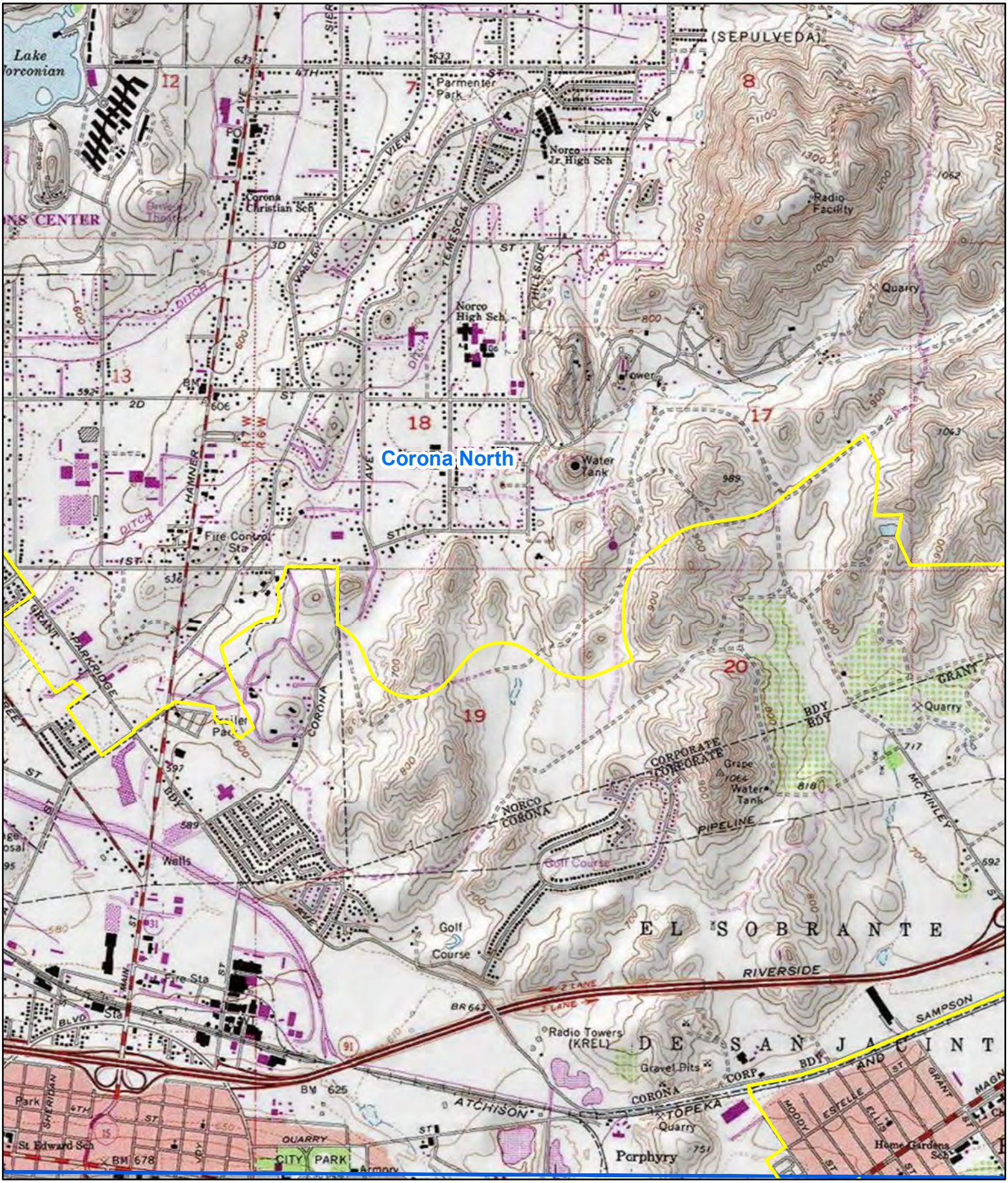
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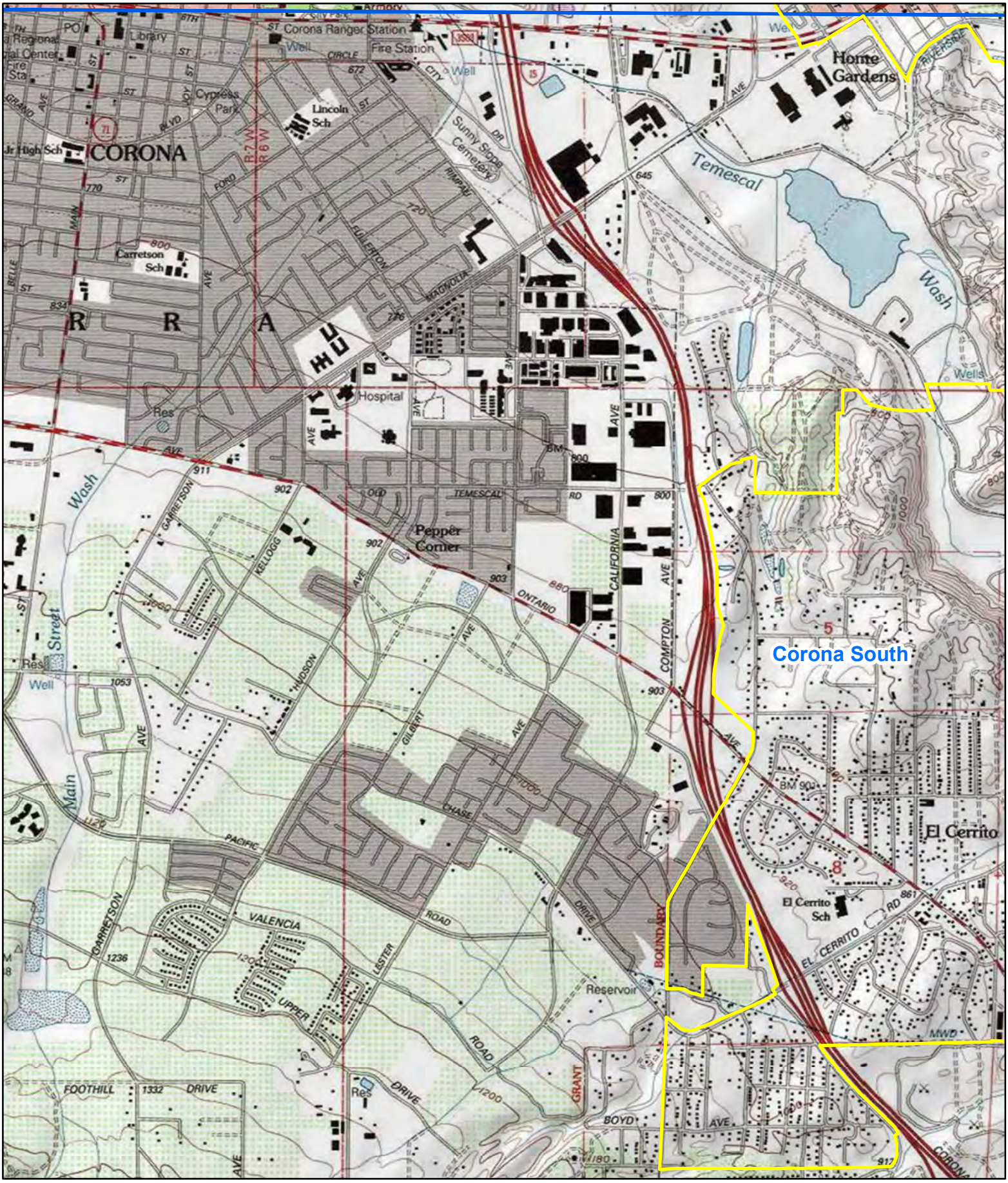


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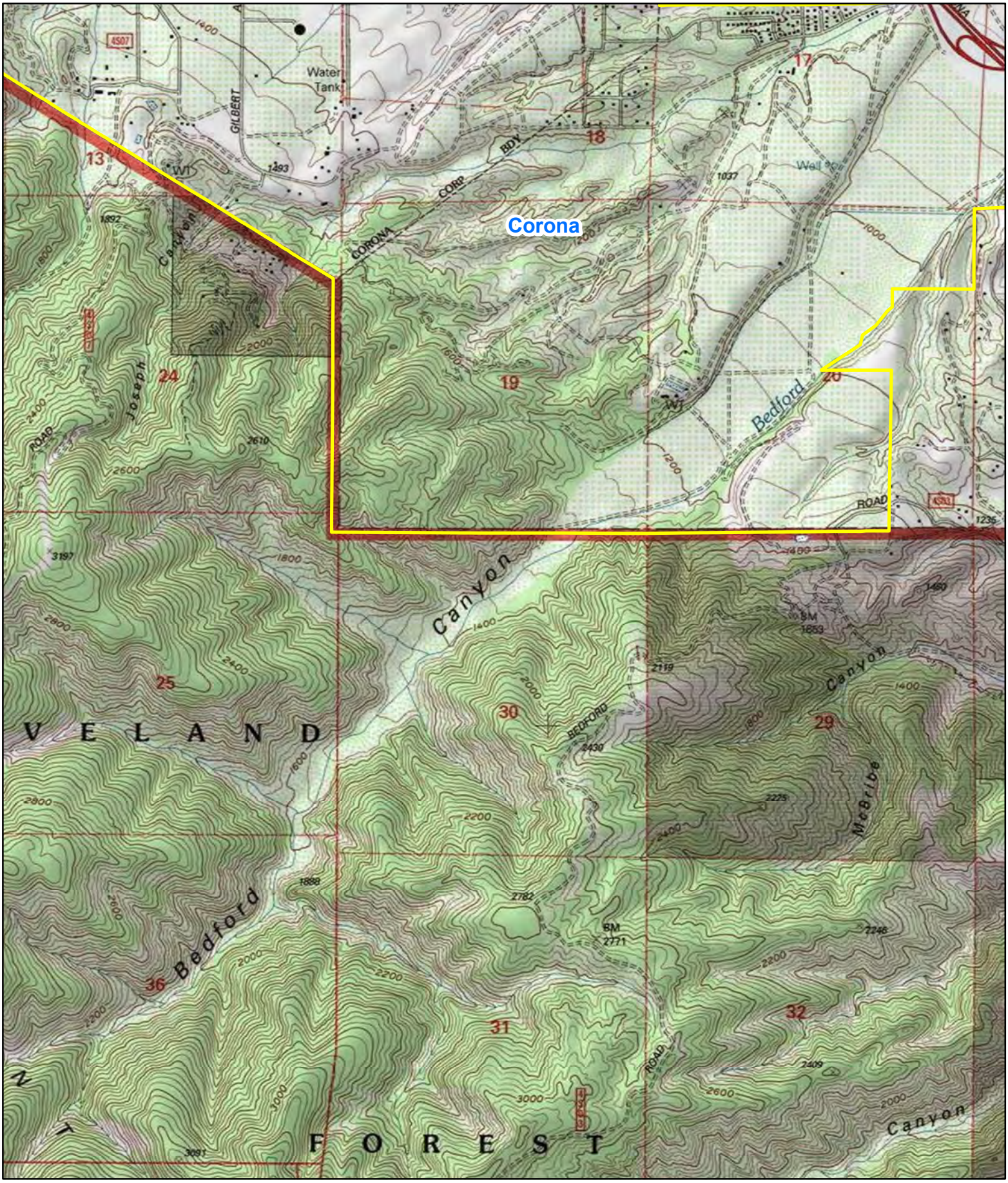
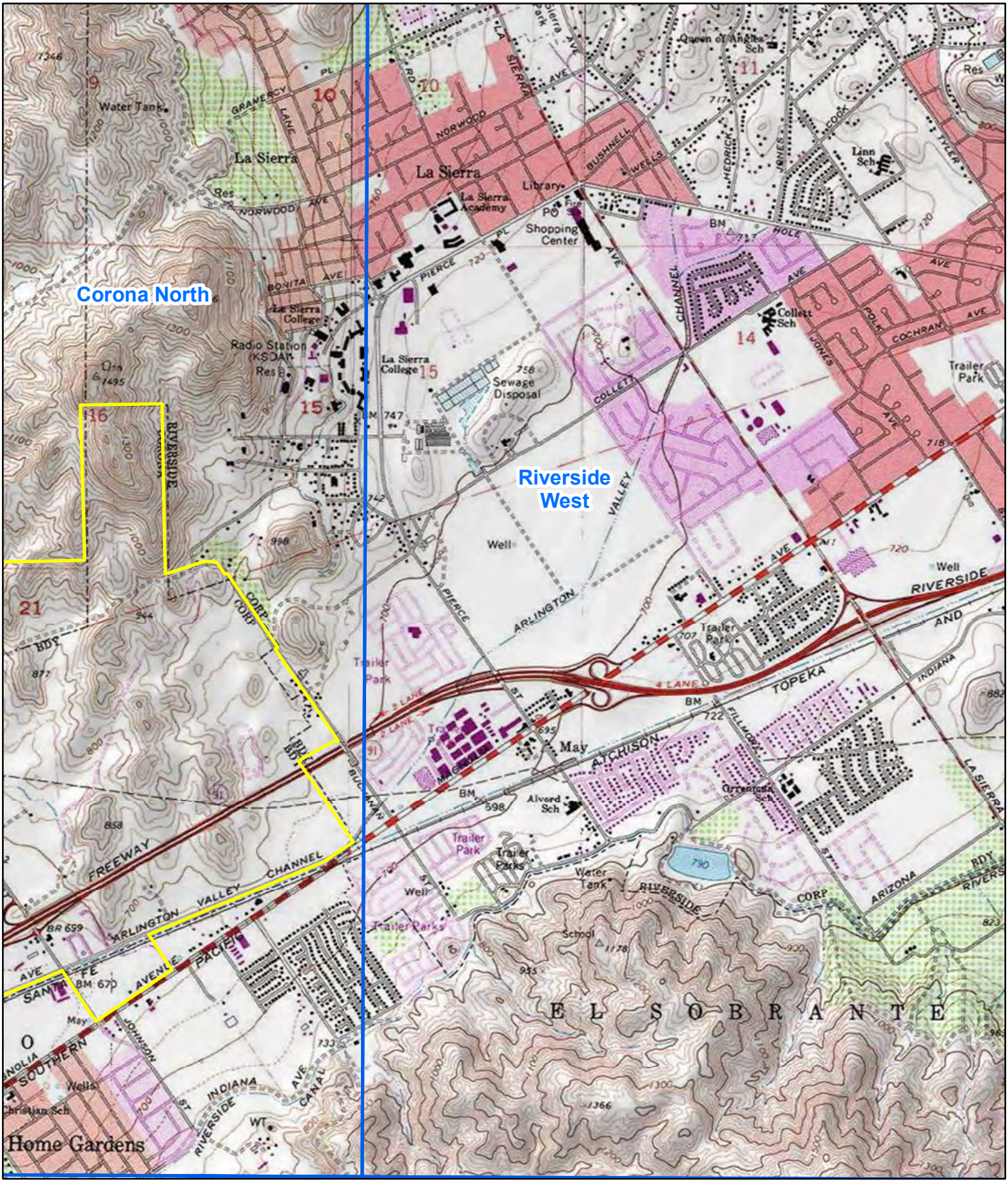


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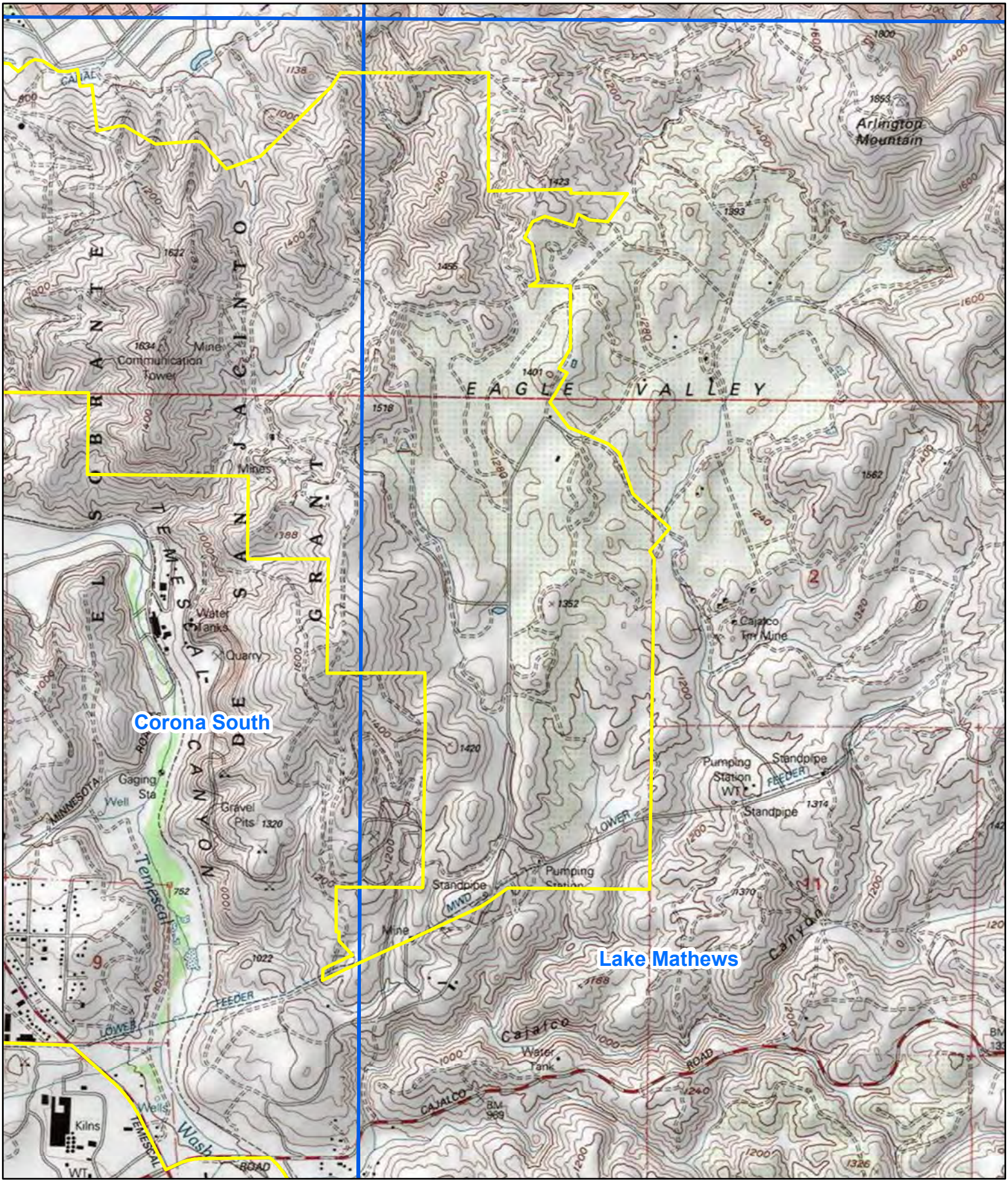
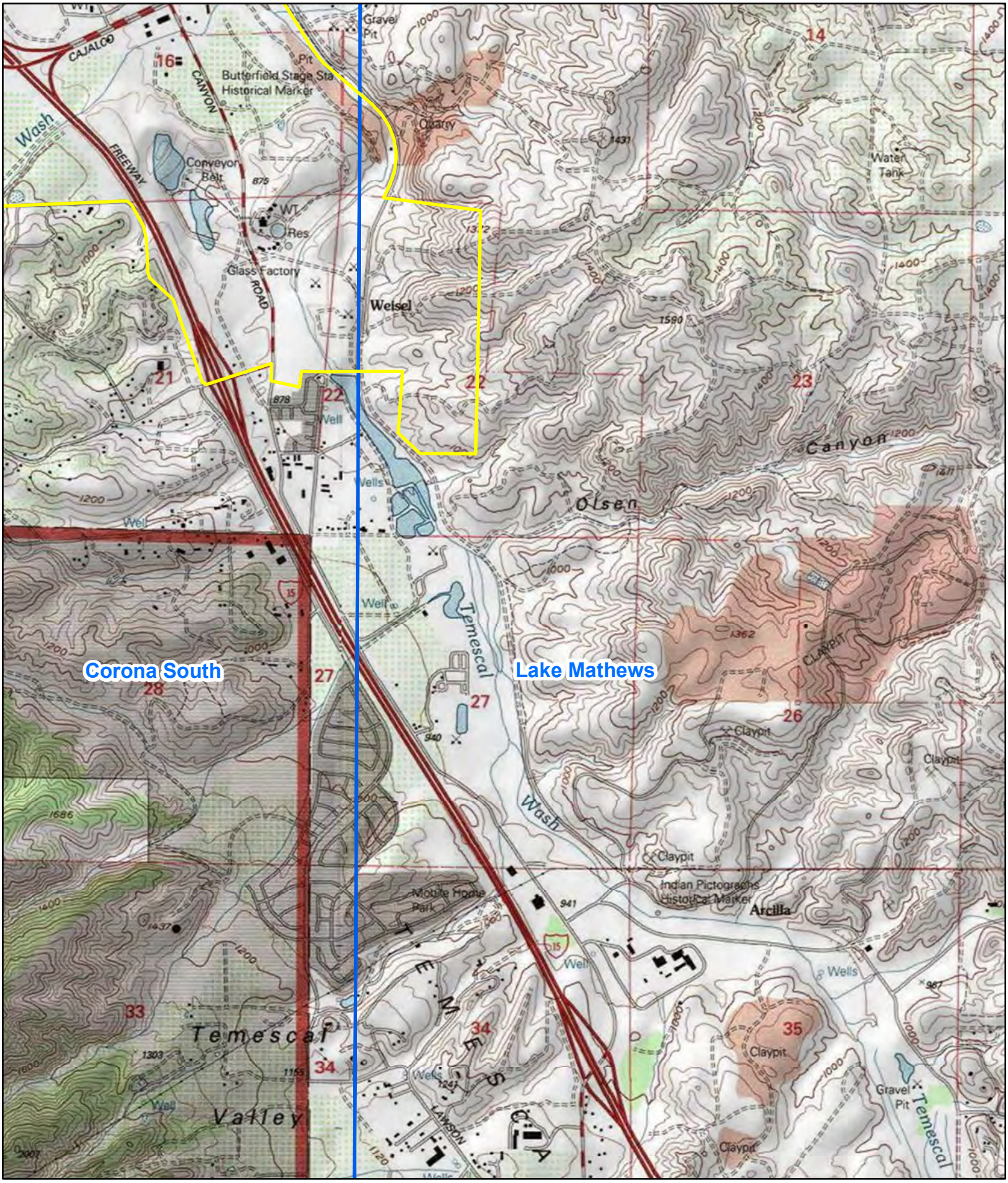


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RED TAIL ENVIRONMENTAL

RED TAIL ENVIRONMENTAL

April 6, 2020

Erica Pinto
Chairperson
Jamul Indian Village
PO Box 612, Jamul, CA, 91935
619-669-4785
epinto@jiv-nsn.gov

Re: City of Corona Reclaimed Water Project, Riverside County, California

Dear Ms. Pinto,

Red Tail Environmental (Red Tail) is conducting an archaeological study for the City of Corona Reclaimed Water Project (project), located within the City of Corona, Riverside County, California. The project area includes the entire City of Corona and the city's sphere of influence. The project is subject to the California Environmental Quality Act (CEQA) and will assess the environmental impact of the City of Corona's Reclaimed Water Master Plan. The City of Corona is the lead agency. The project area is shown on the following USGS 7.5' Quad Maps:

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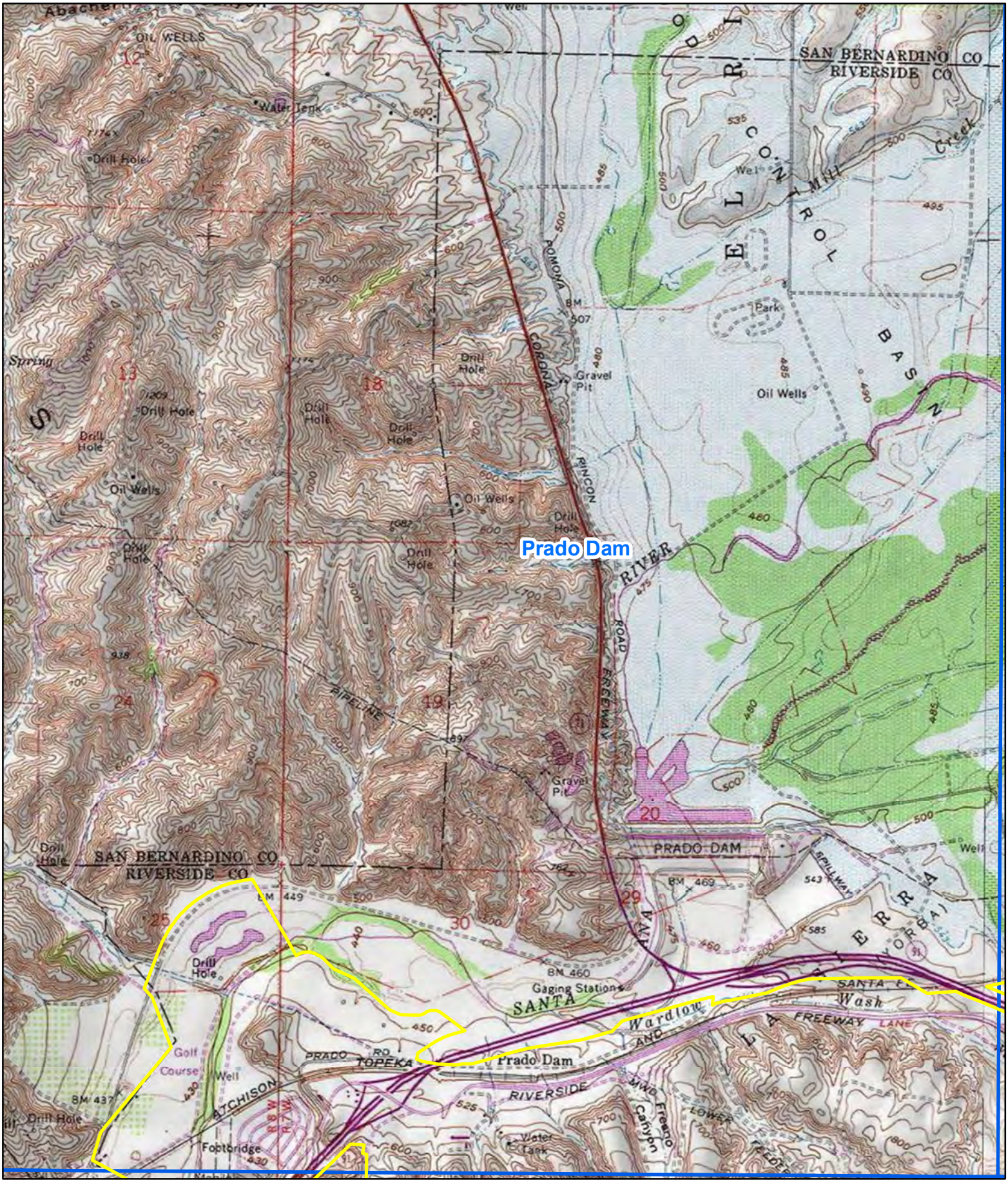


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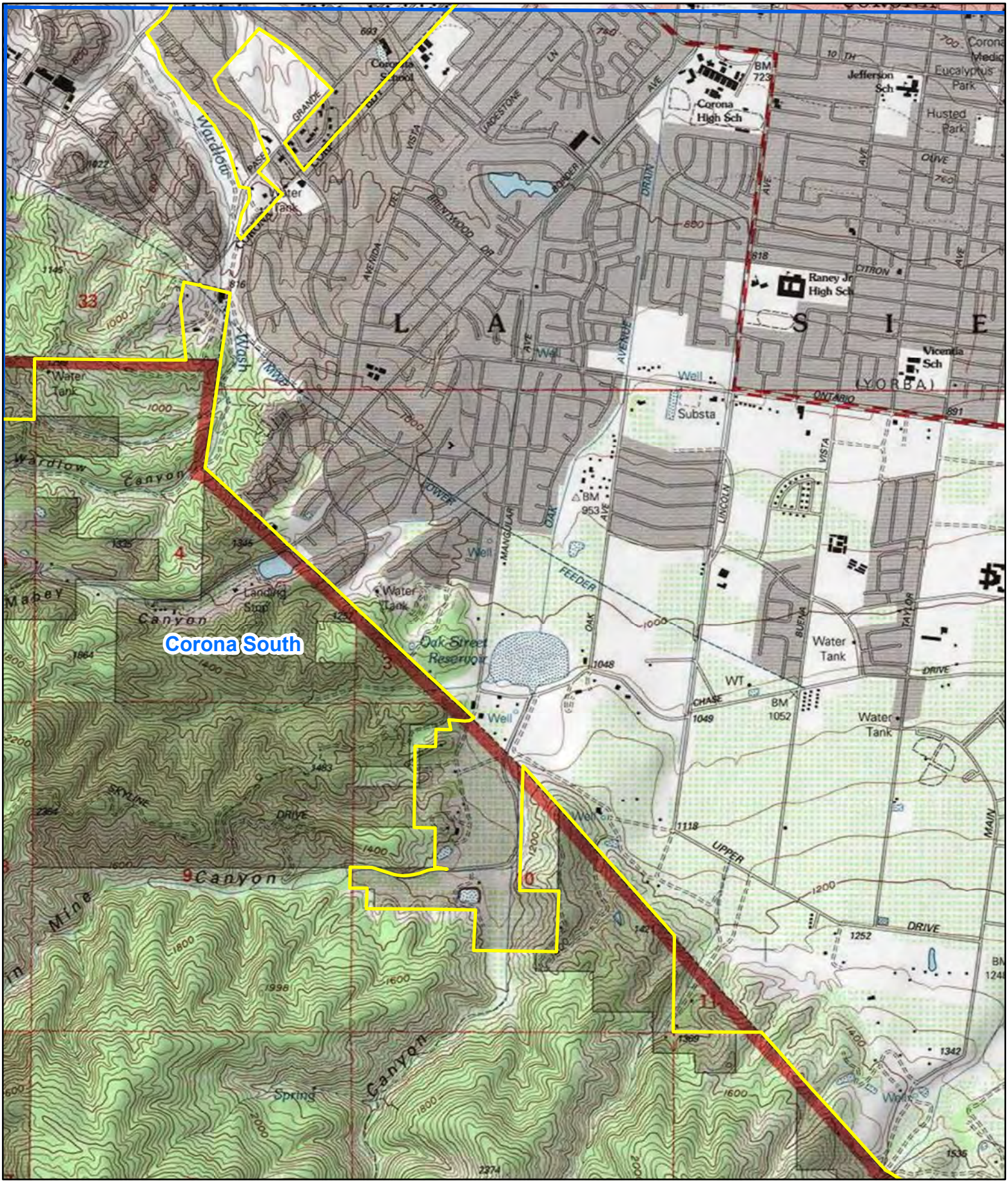


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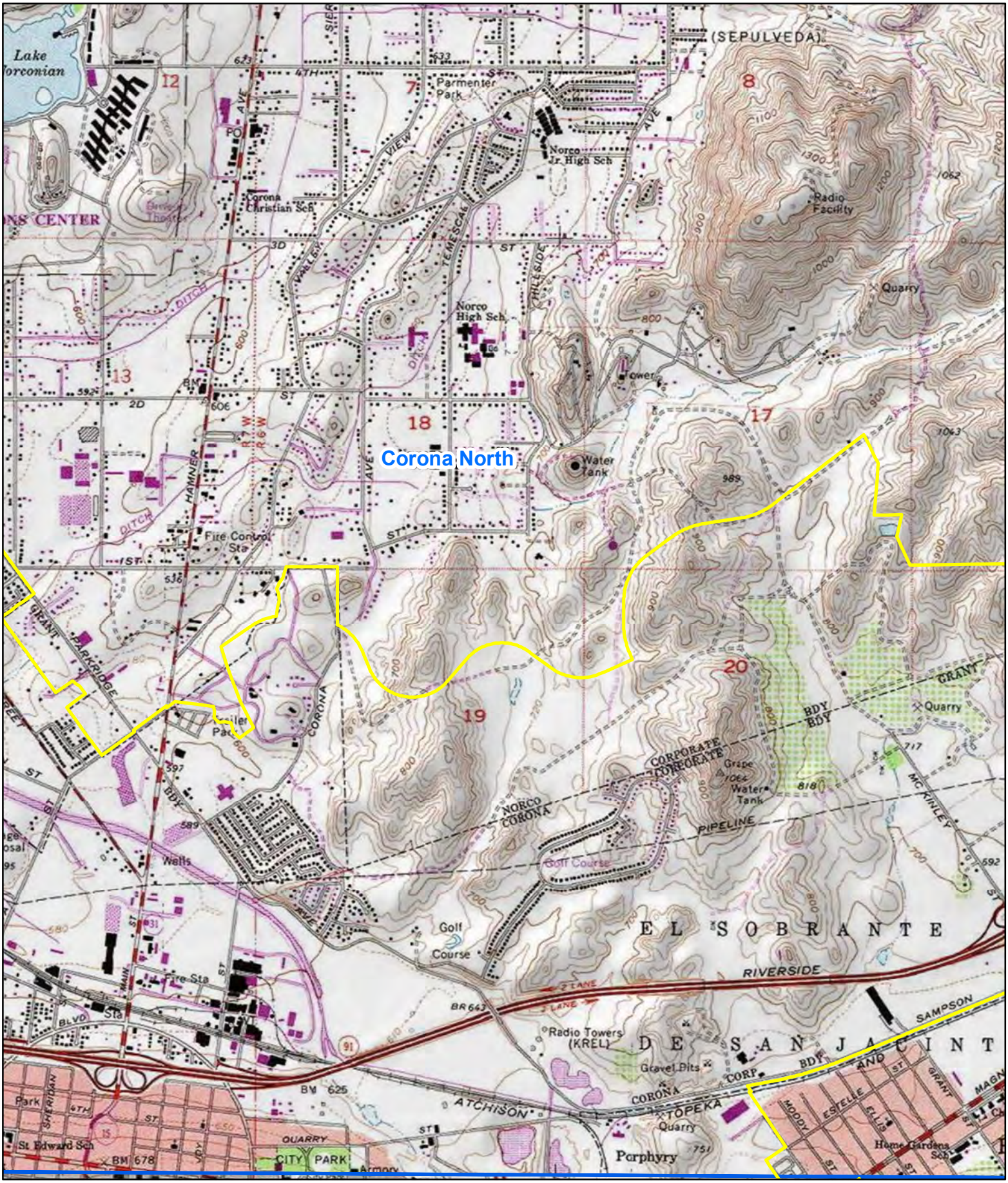
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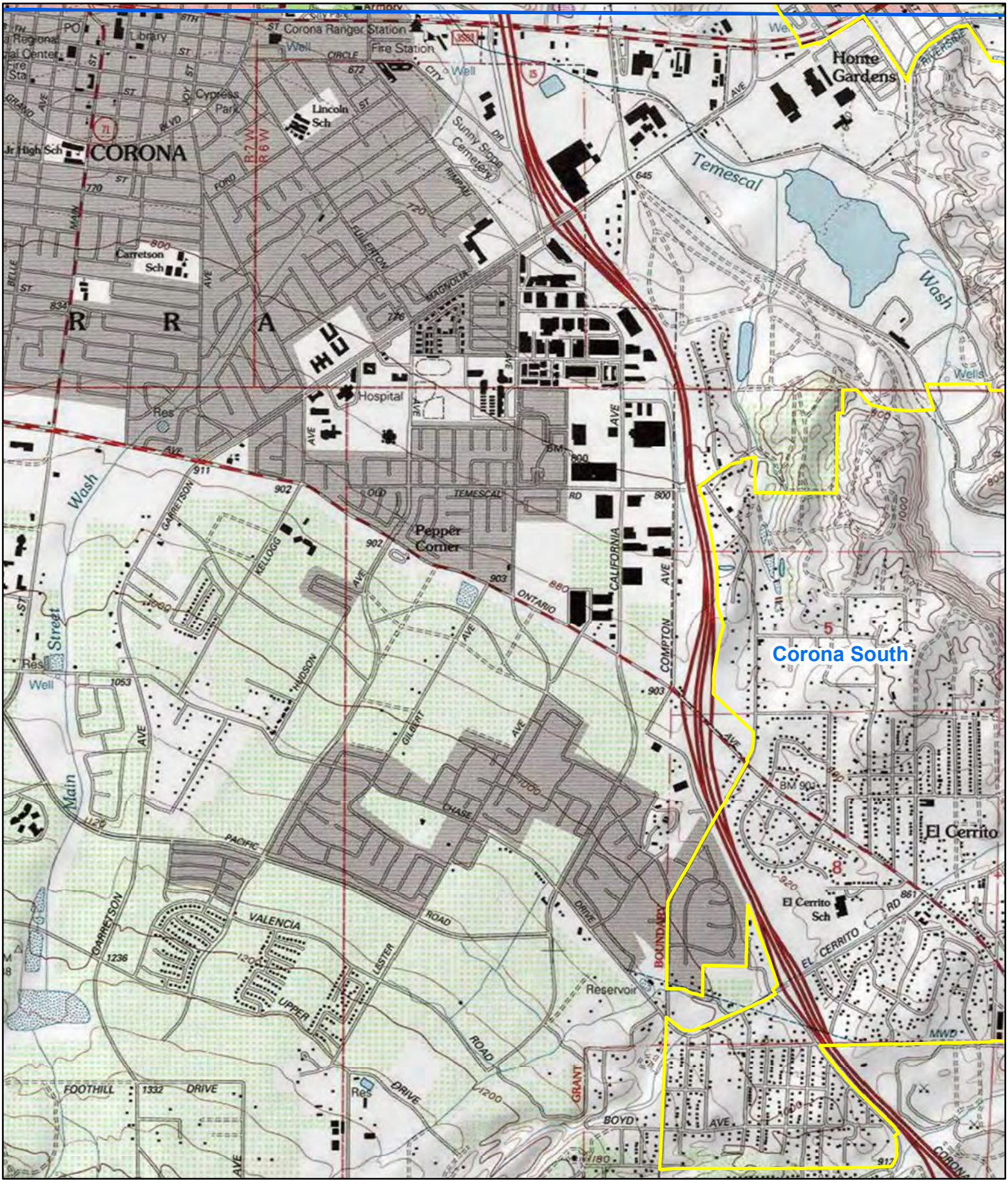


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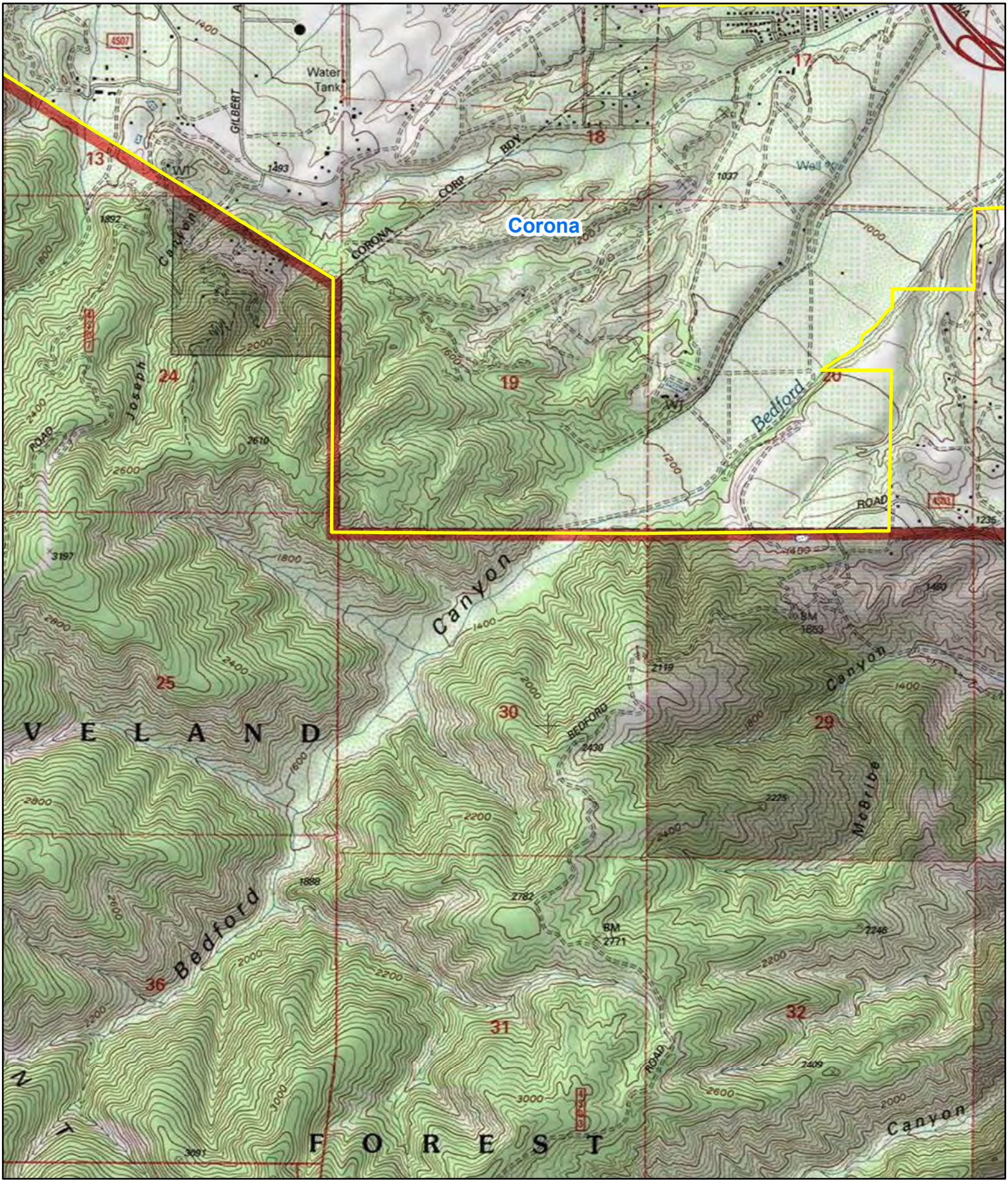


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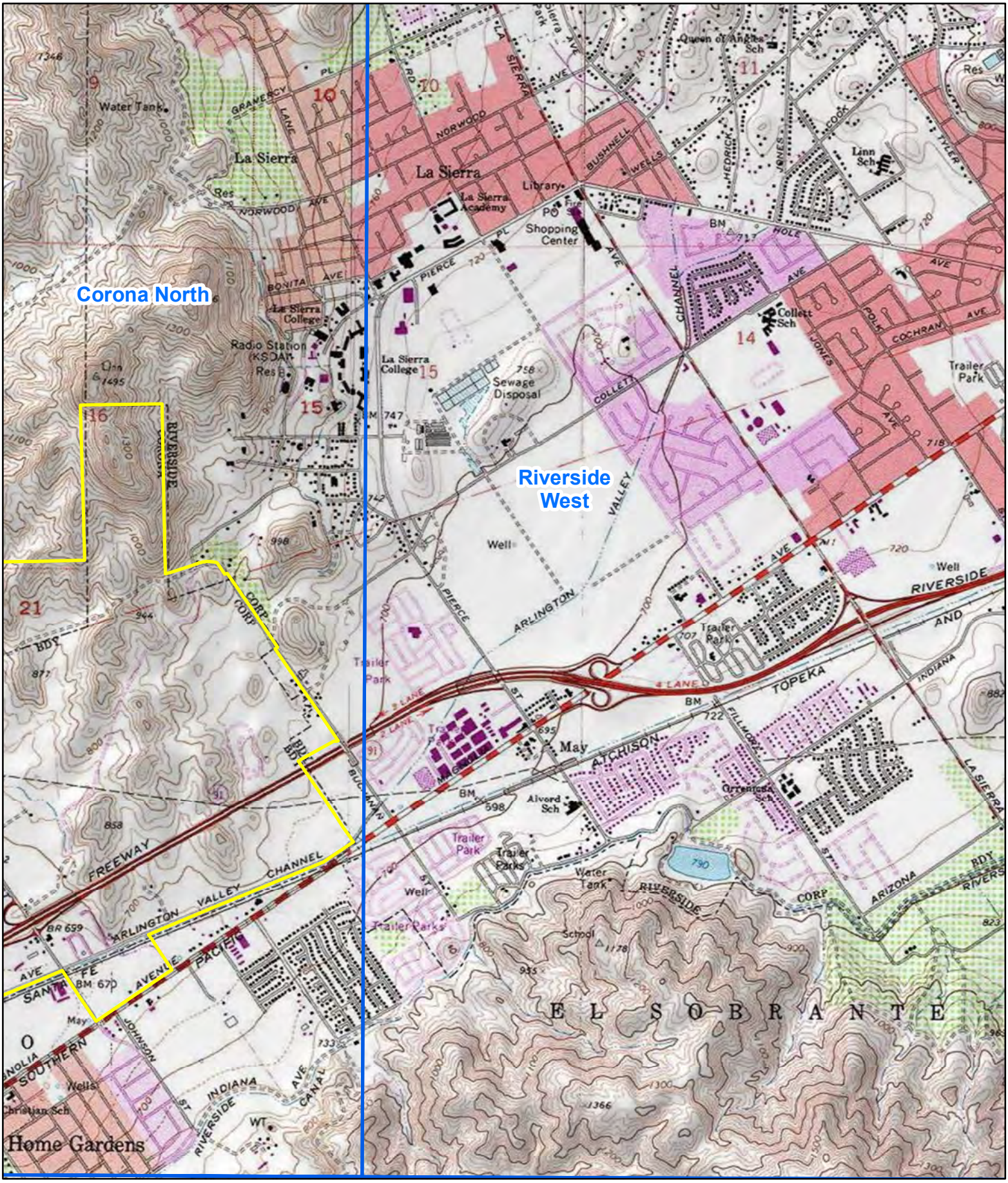


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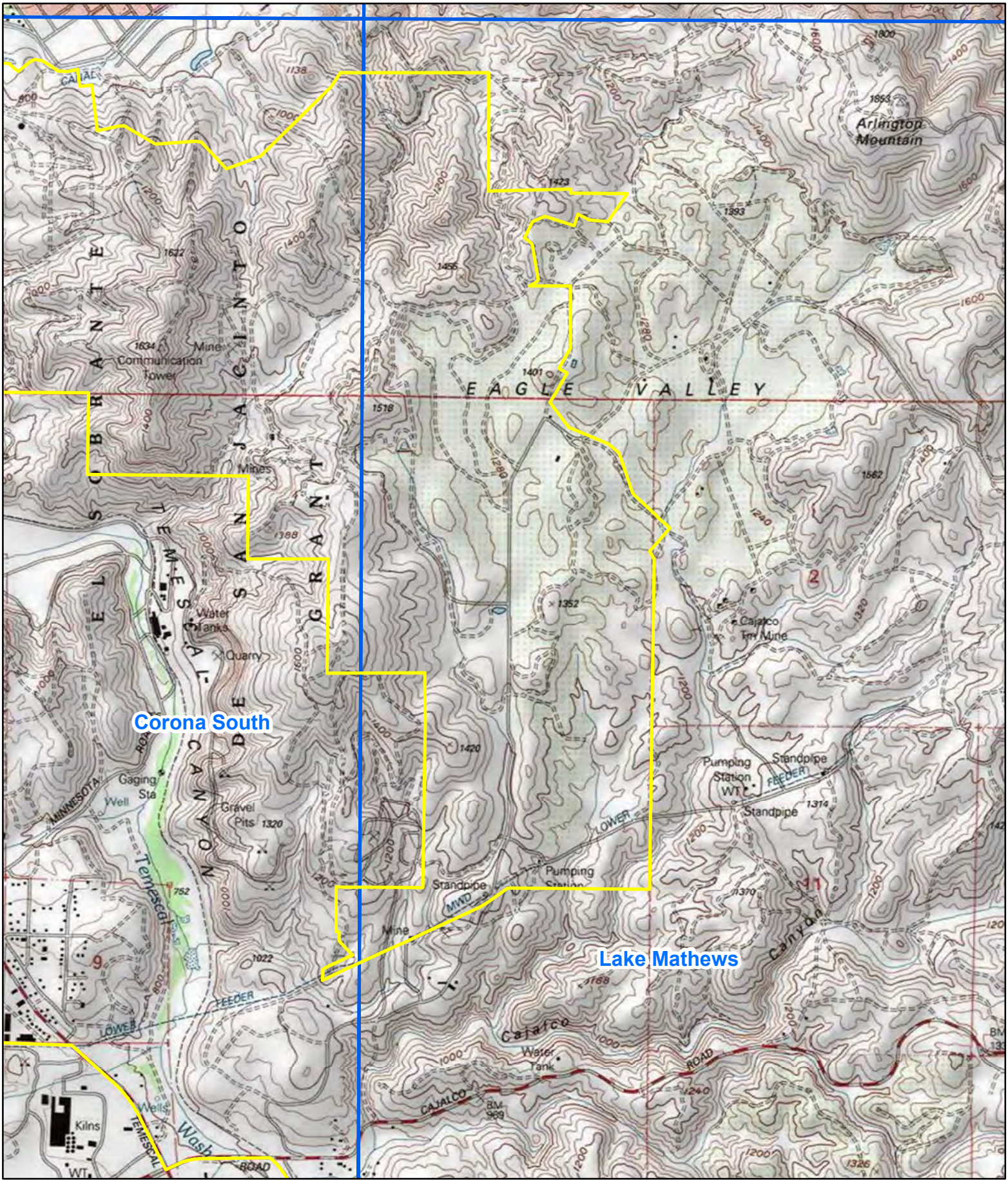
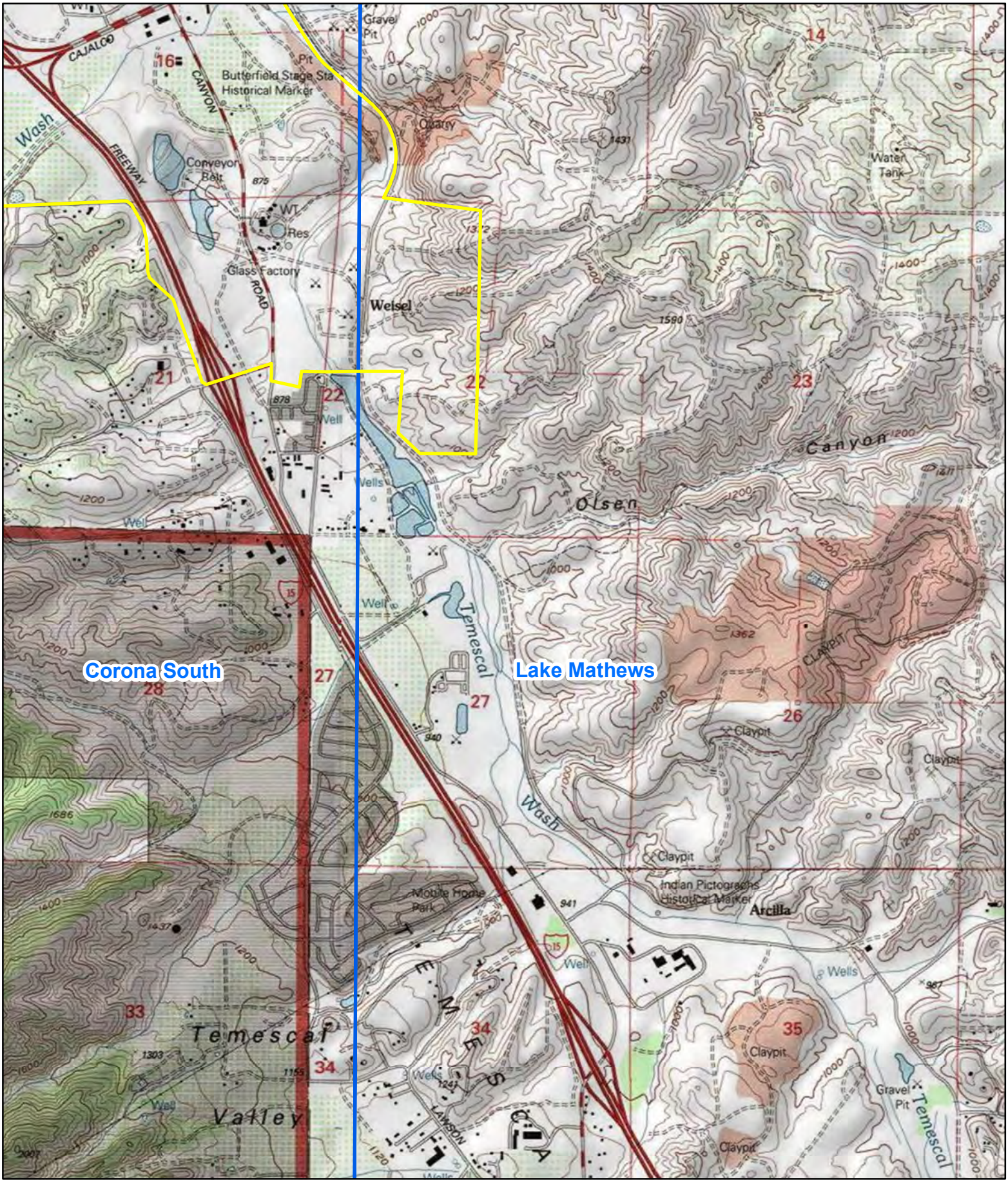


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RED TAIL ENVIRONMENTAL

RED TAIL ENVIRONMENTAL

April 6, 2020

Fred Nelson
Chairperson
La Jolla Band of Luiseno Indians
22000 Highway 76, Pauma Valley, CA, 92061
760-742-3771

Re: City of Corona Reclaimed Water Project, Riverside County, California

Dear Mr. Nelson,

Red Tail Environmental (Red Tail) is conducting an archaeological study for the City of Corona Reclaimed Water Project (project), located within the City of Corona, Riverside County, California. The project area includes the entire City of Corona and the city's sphere of influence. The project is subject to the California Environmental Quality Act (CEQA) and will assess the environmental impact of the City of Corona's Reclaimed Water Master Plan. The City of Corona is the lead agency. The project area is shown on the following USGS 7.5' Quad Maps:

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Director of Archaeology
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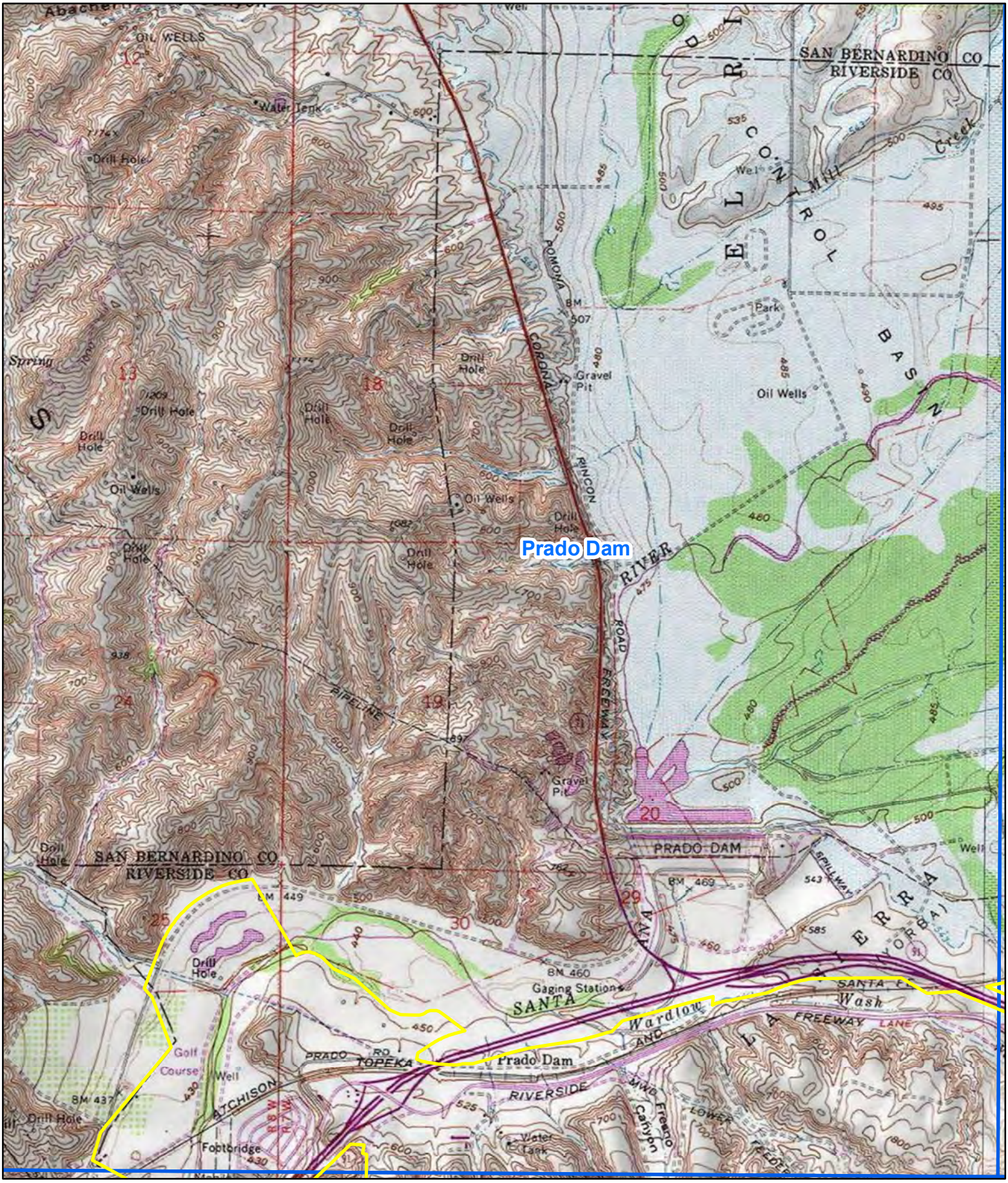


Figure 1. Project Area

RED TAIL ENVIRONMENTAL



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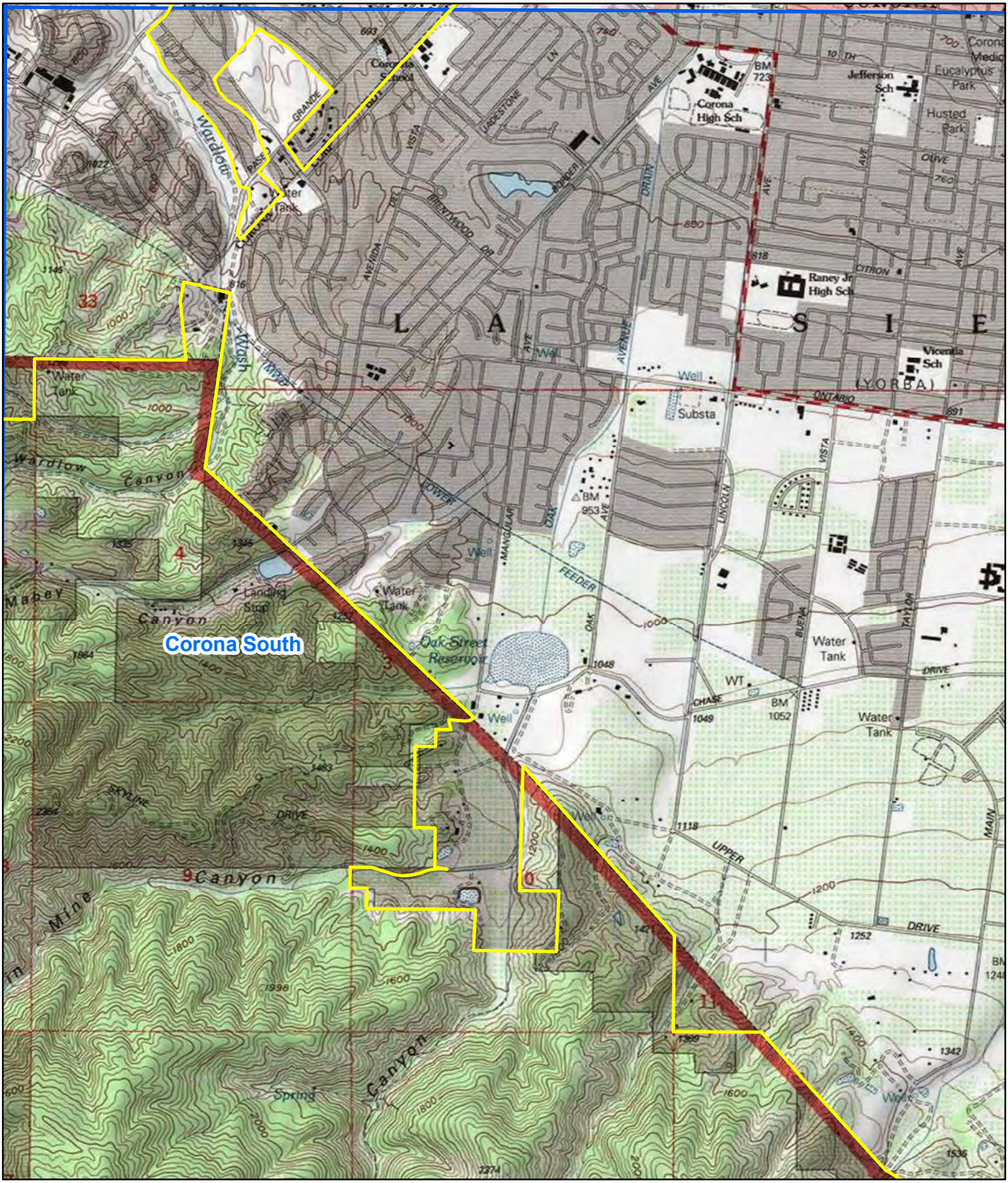


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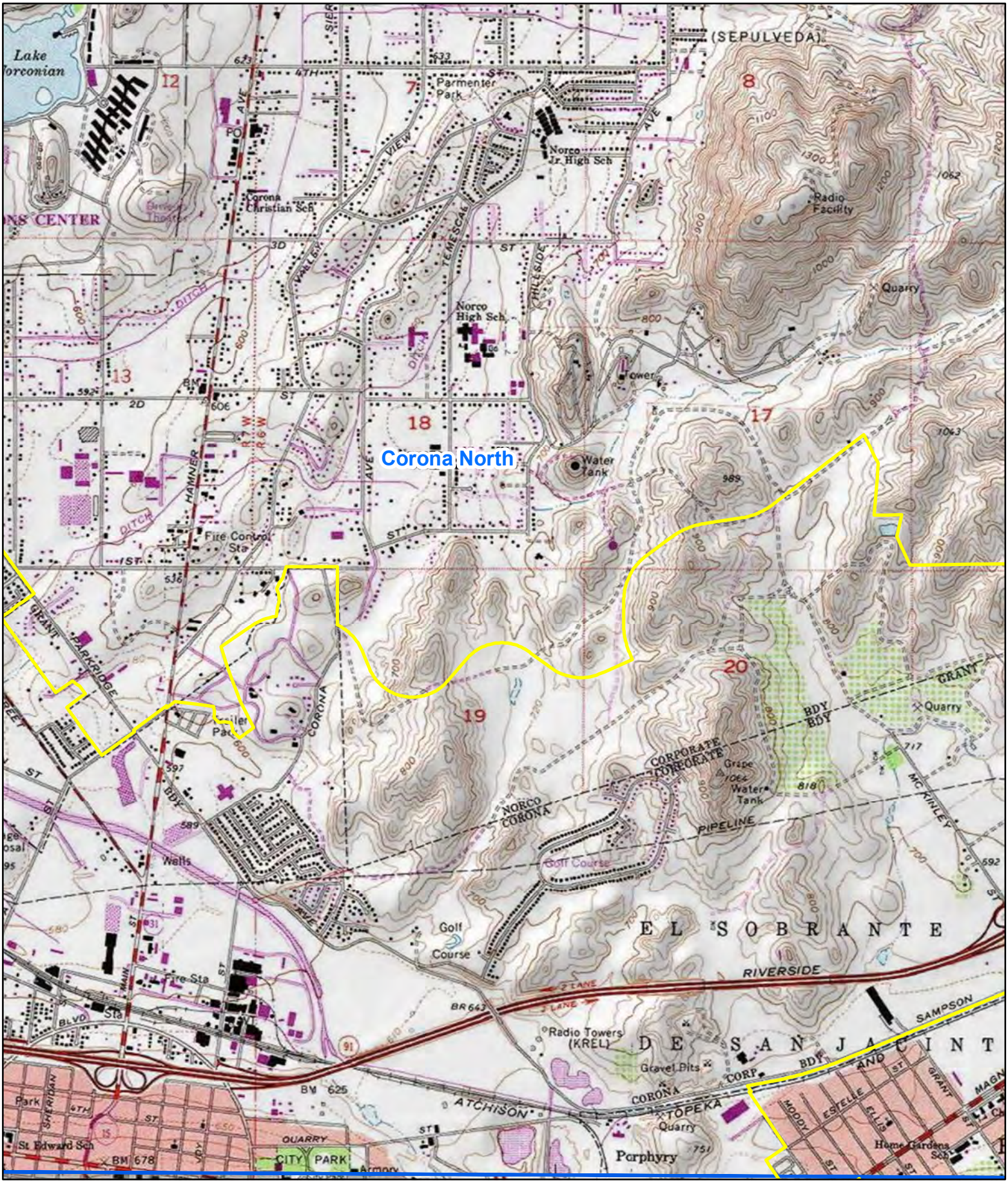
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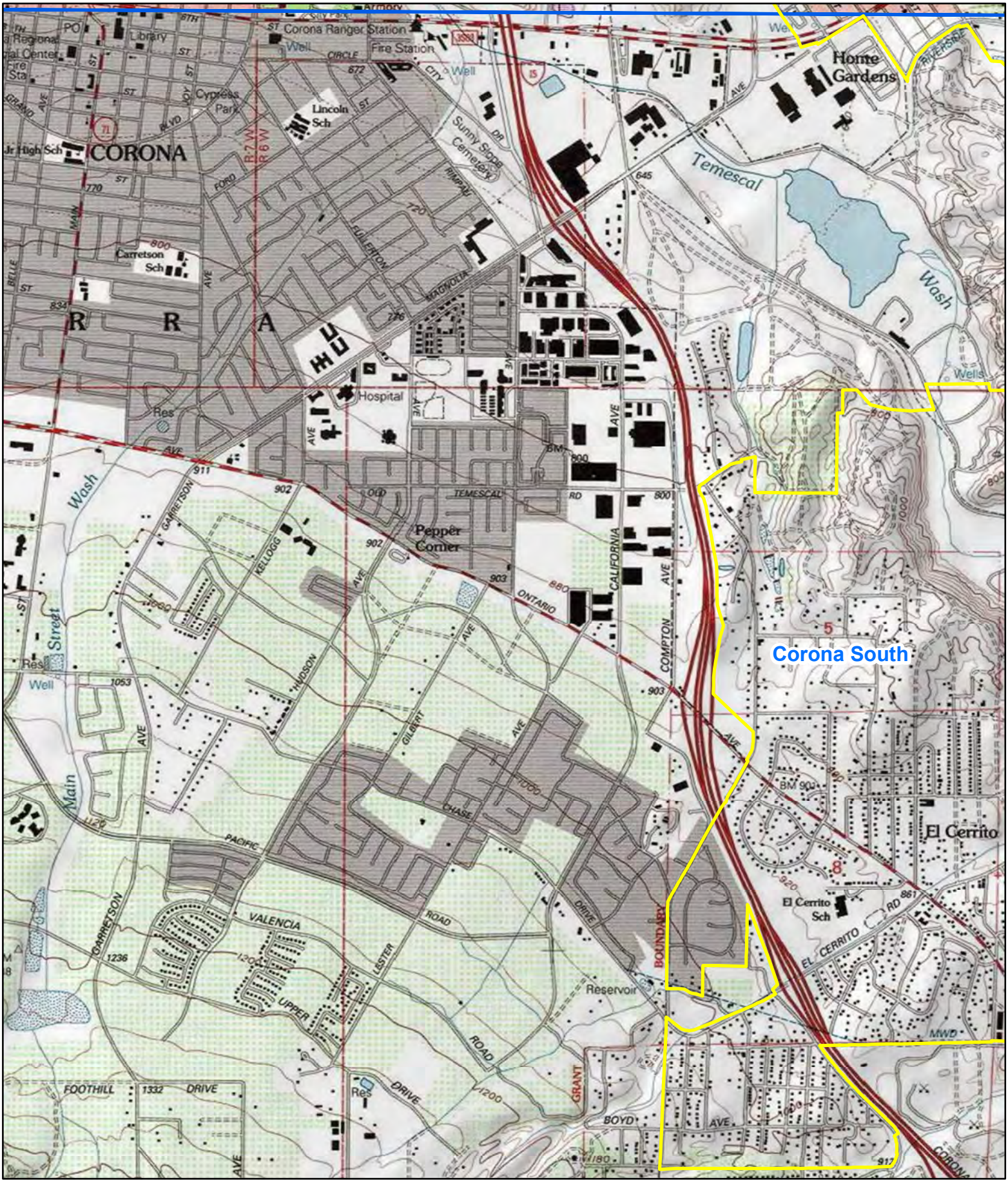


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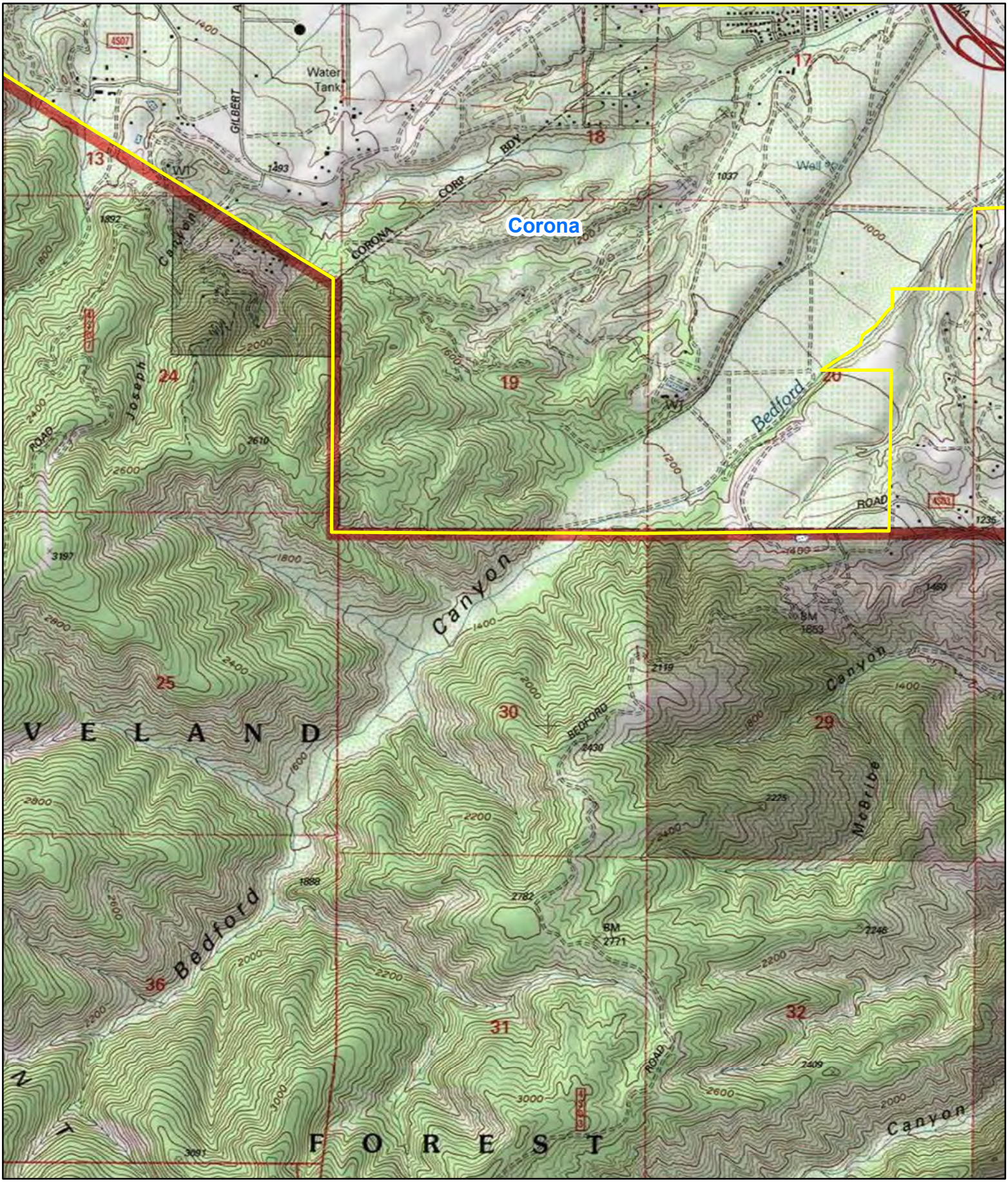


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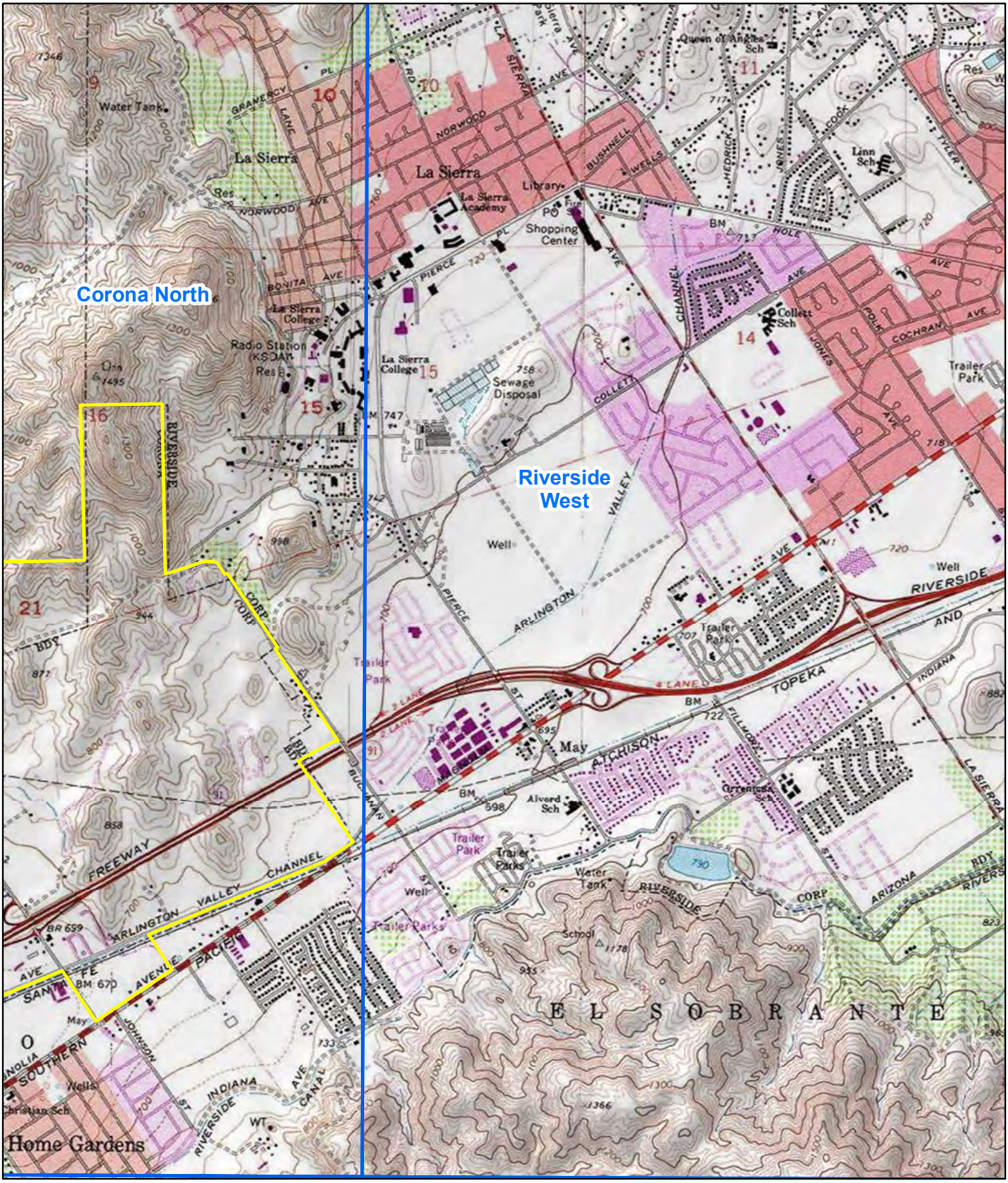


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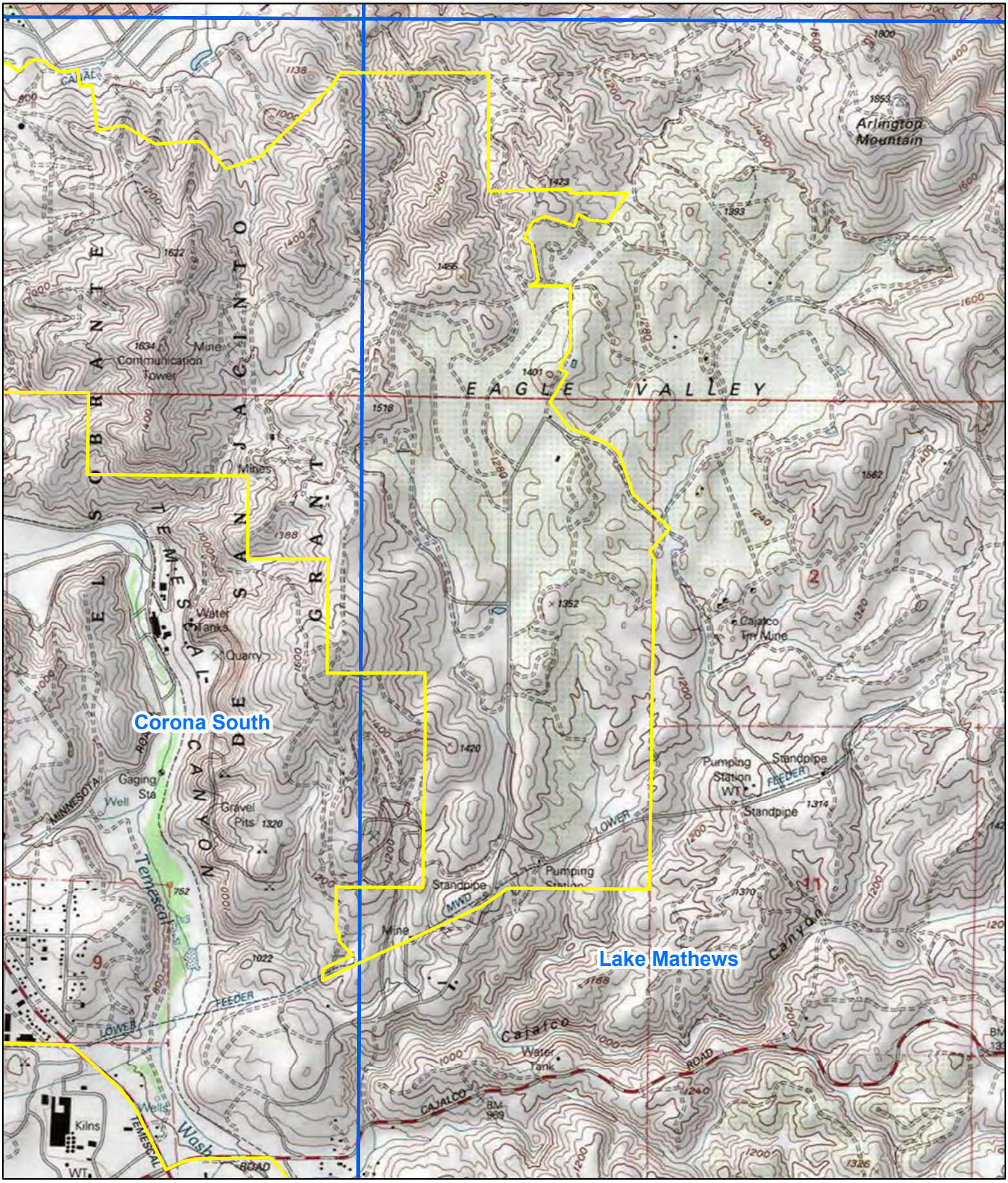
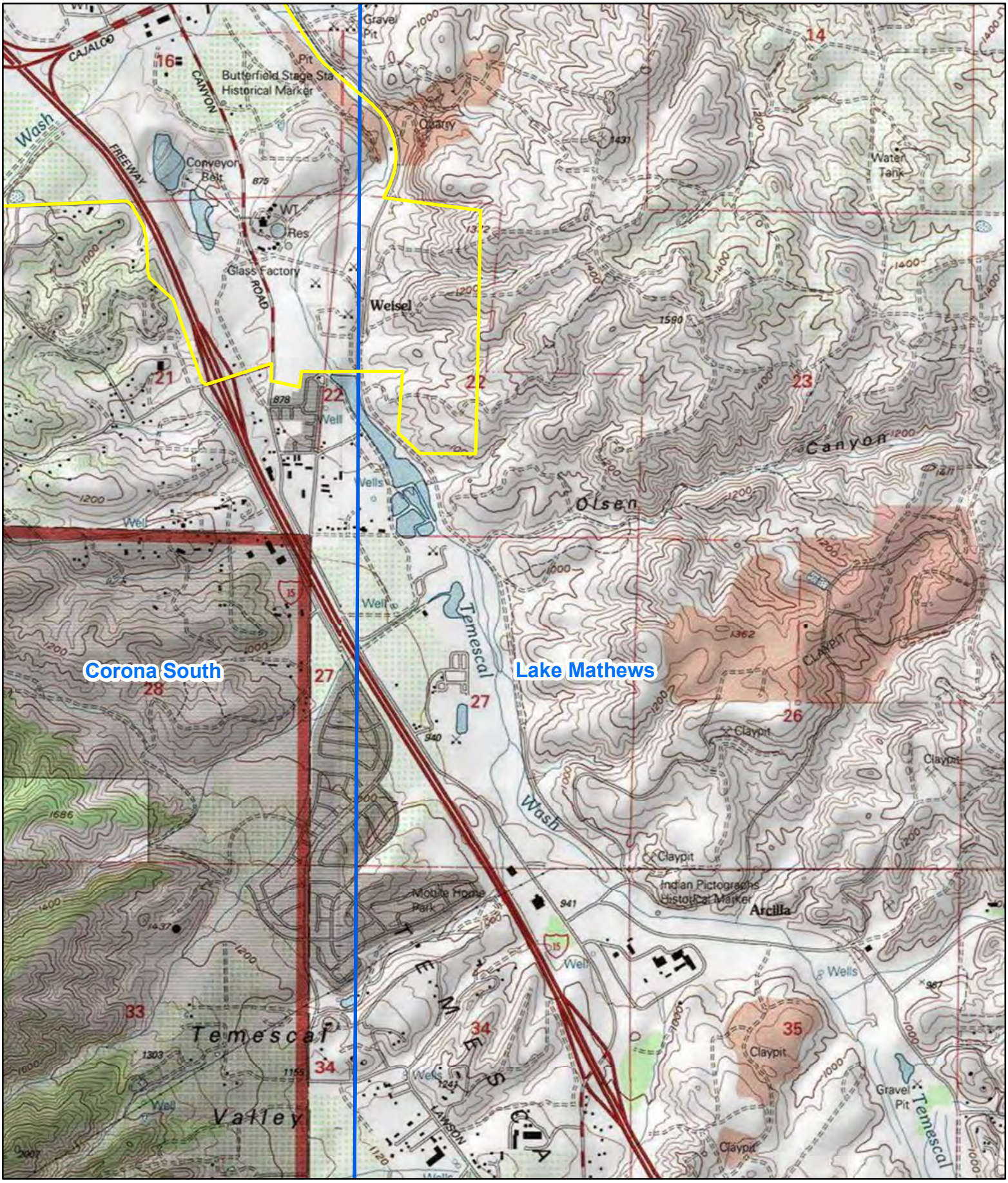


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RED TAIL ENVIRONMENTAL

RED TAIL ENVIRONMENTAL

April 6, 2020

Gwendolyn Parada
Chairperson
La Posta Band of Diegueno Mission Indians
8 Crestwood Road, Boulevard, CA, 91905
619-478-2113
LP13boots@aol.com

Re: City of Corona Reclaimed Water Project, Riverside County, California

Dear Ms. Parada,

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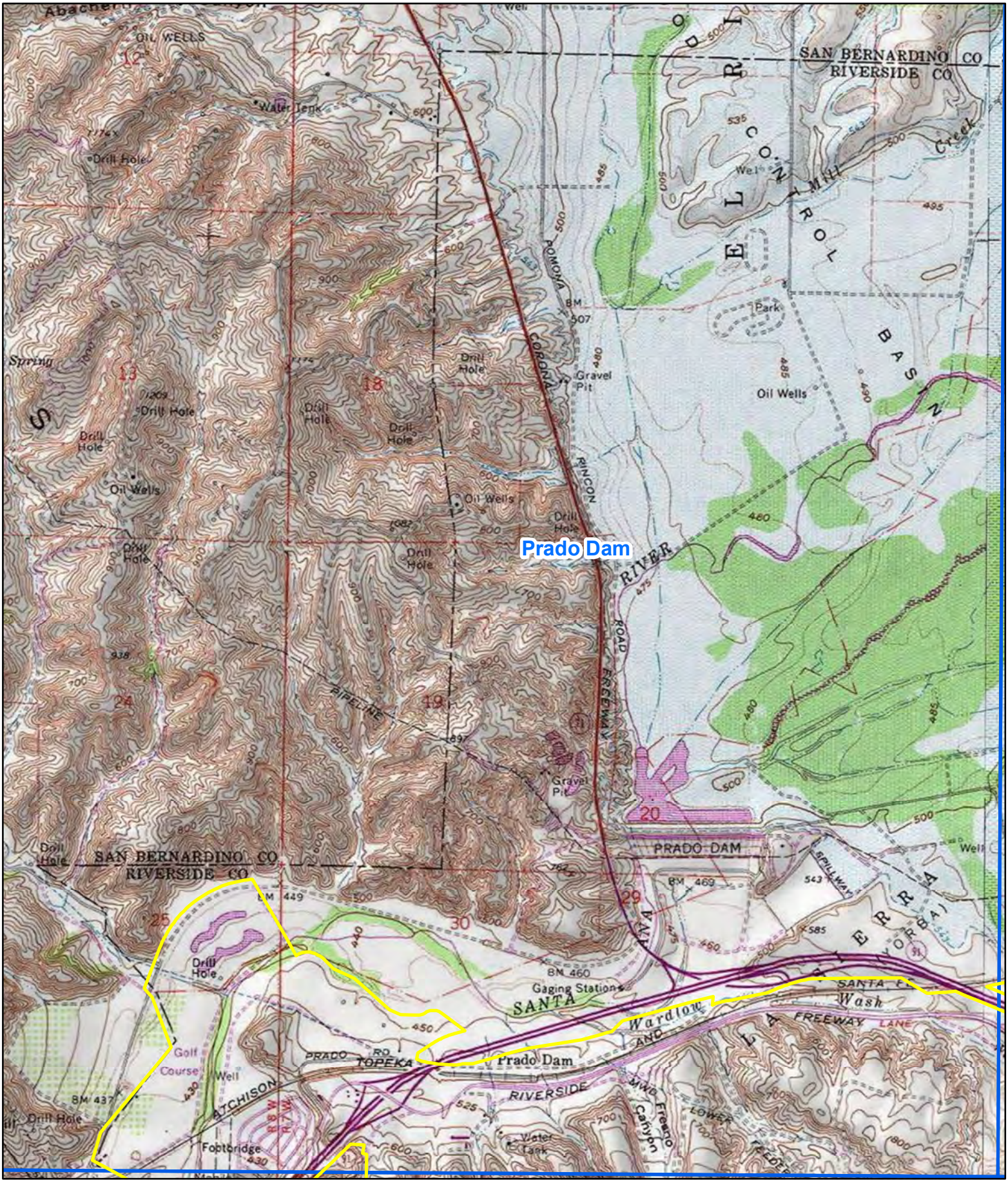


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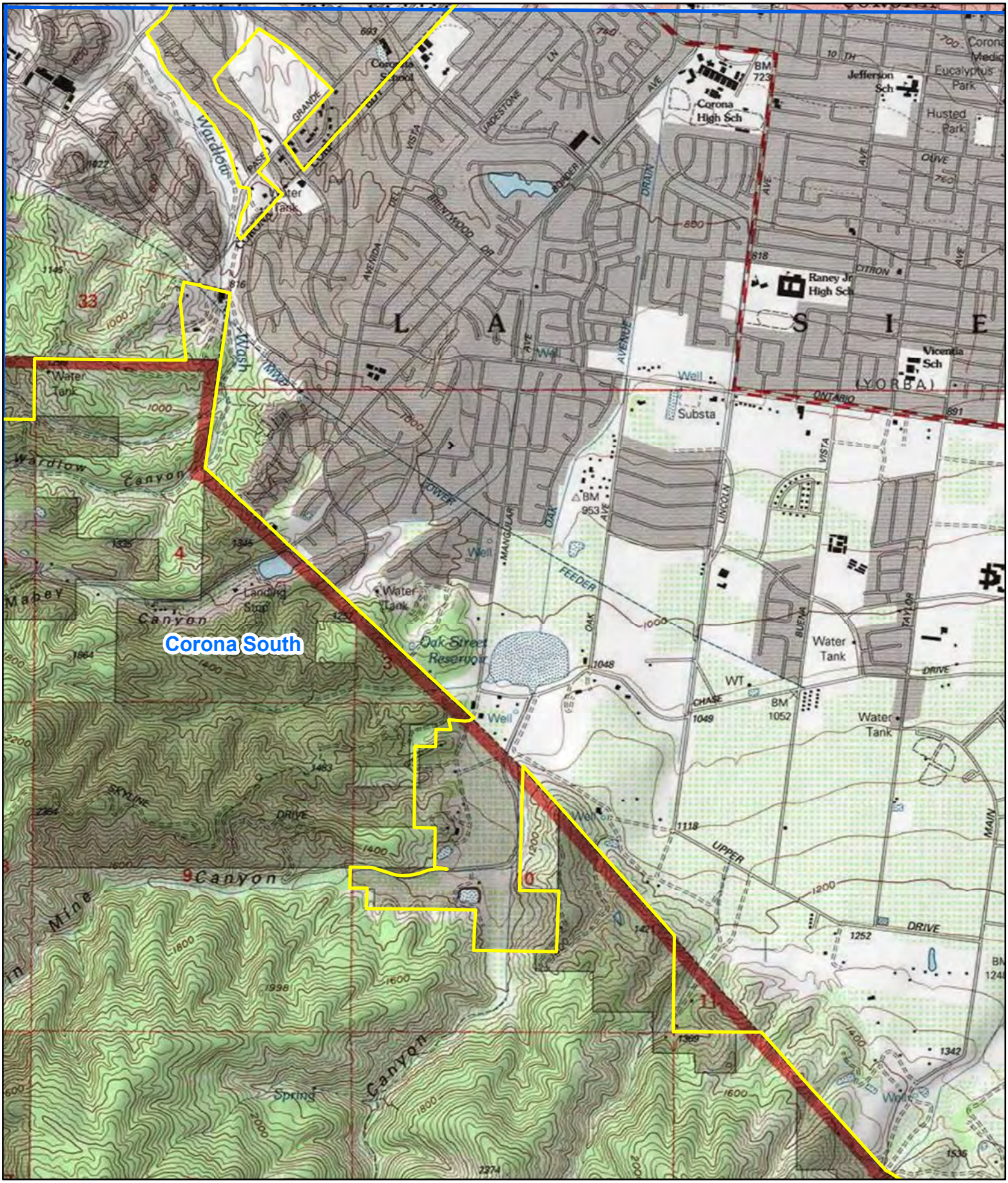


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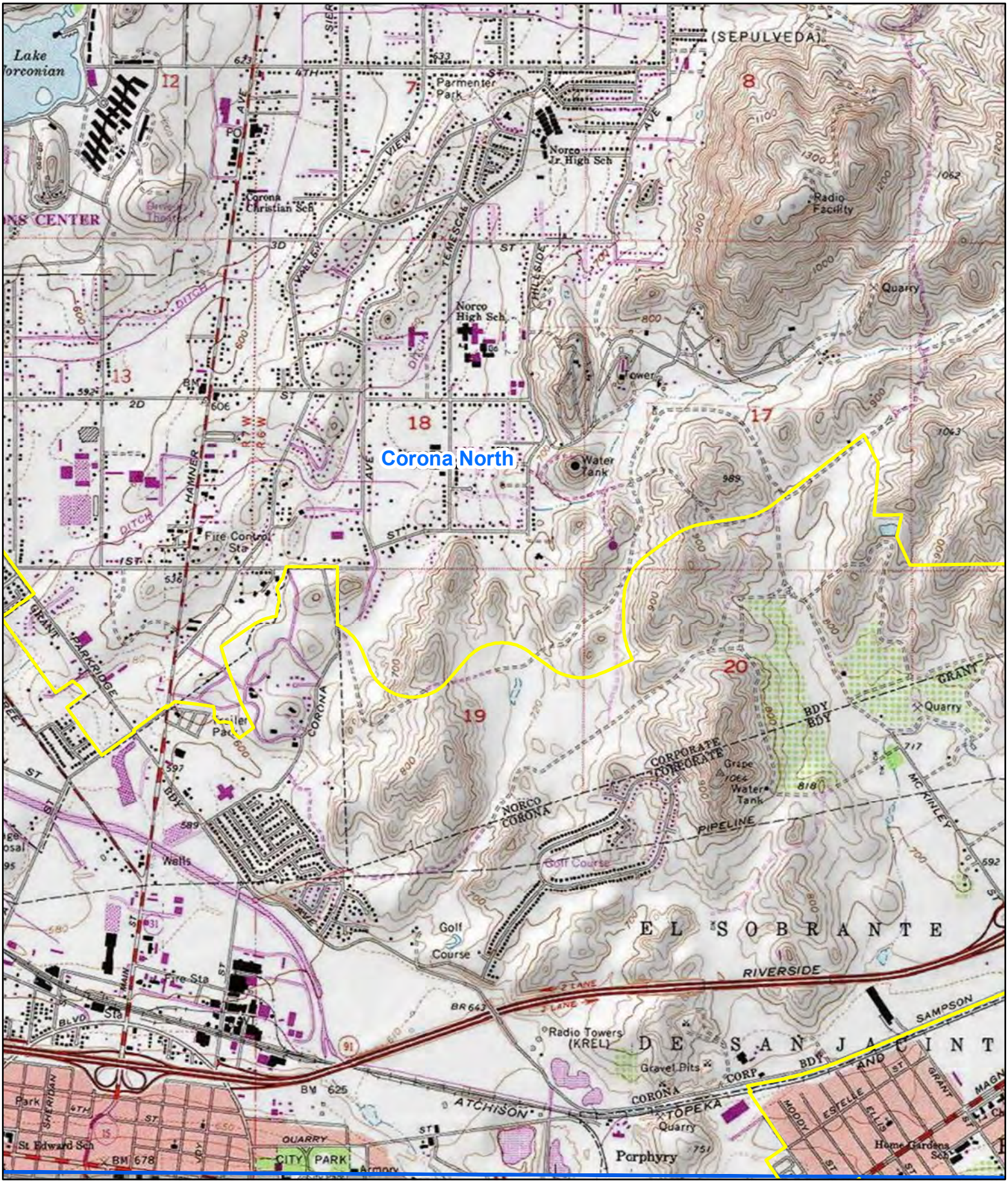
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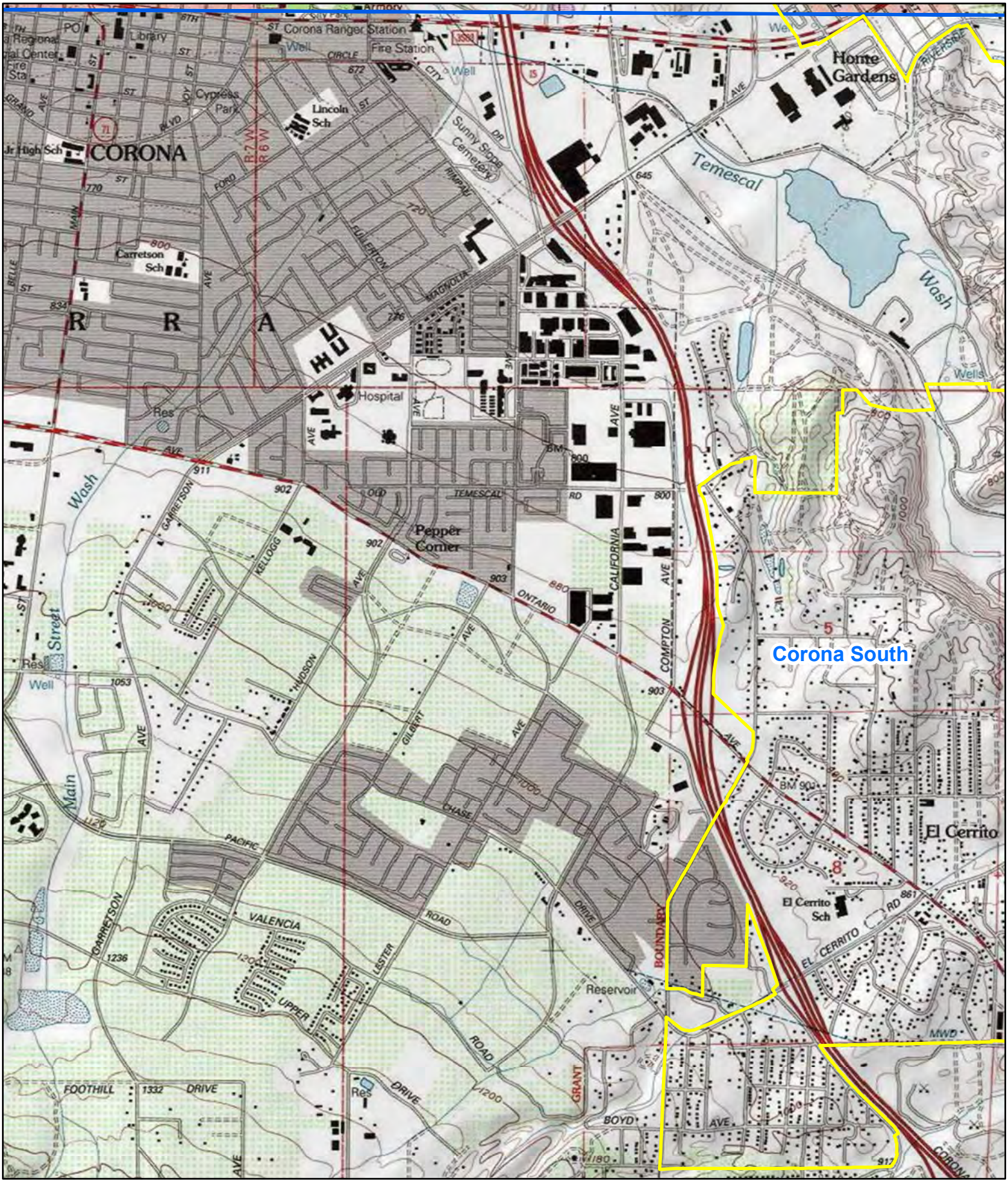


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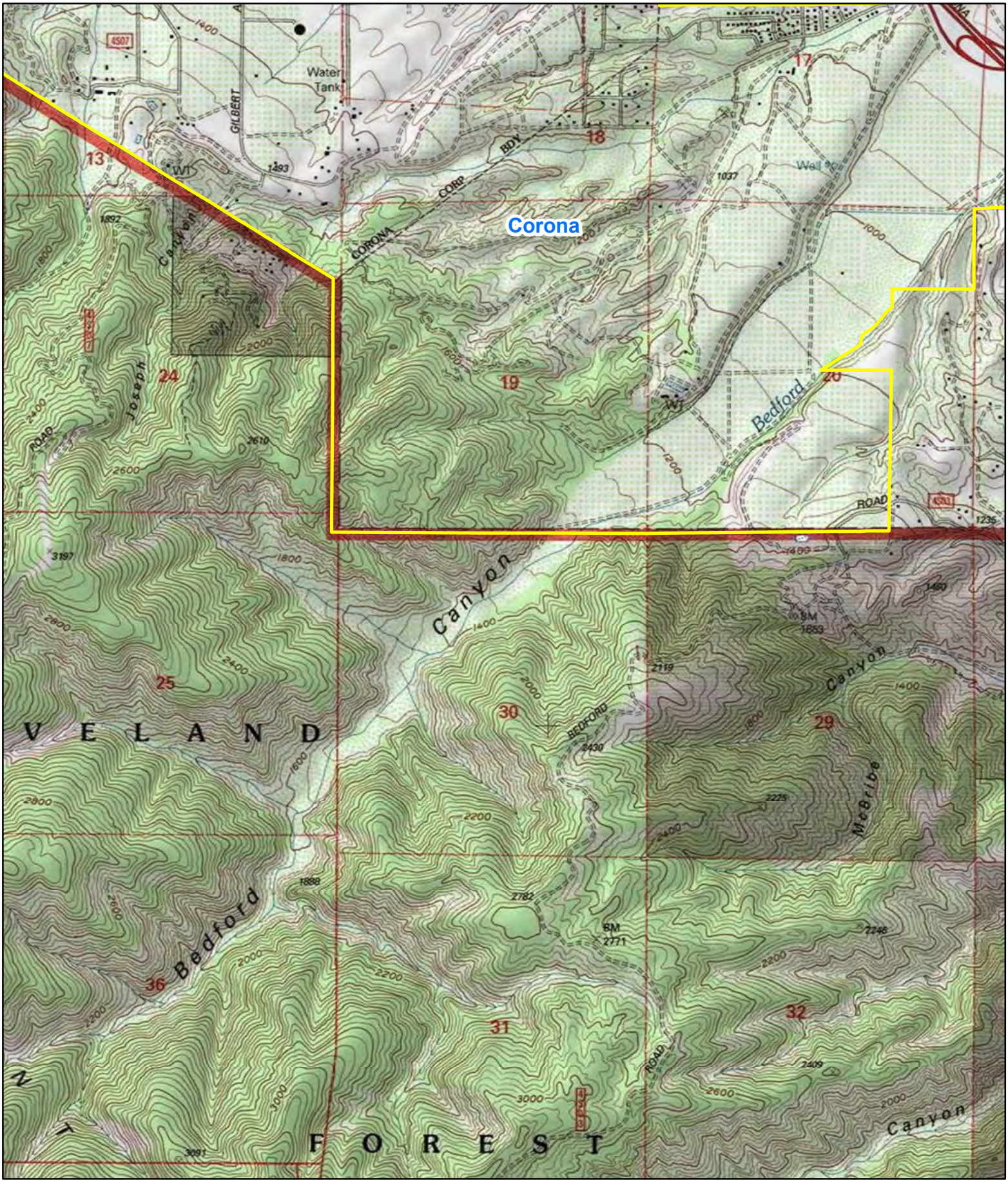


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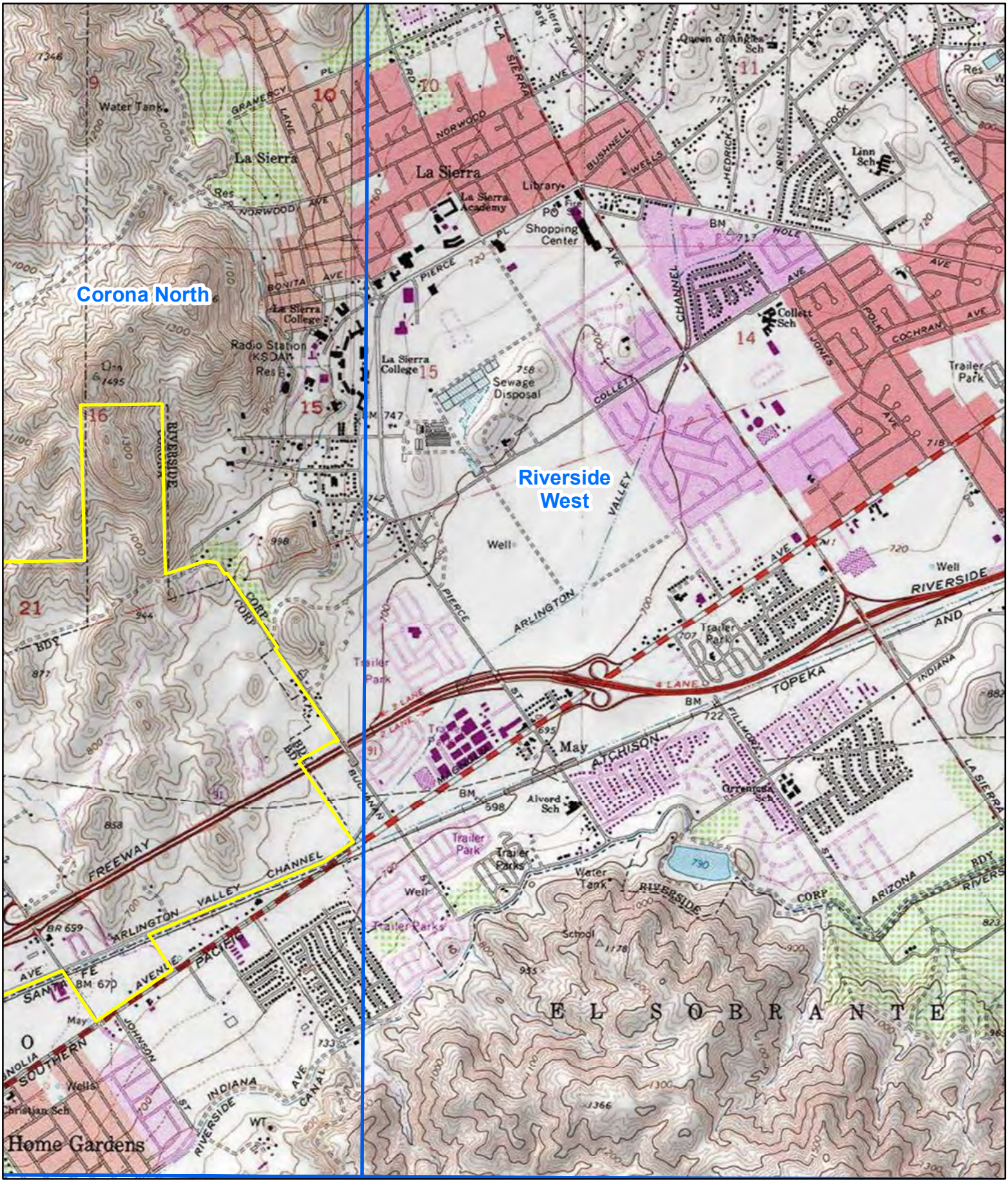


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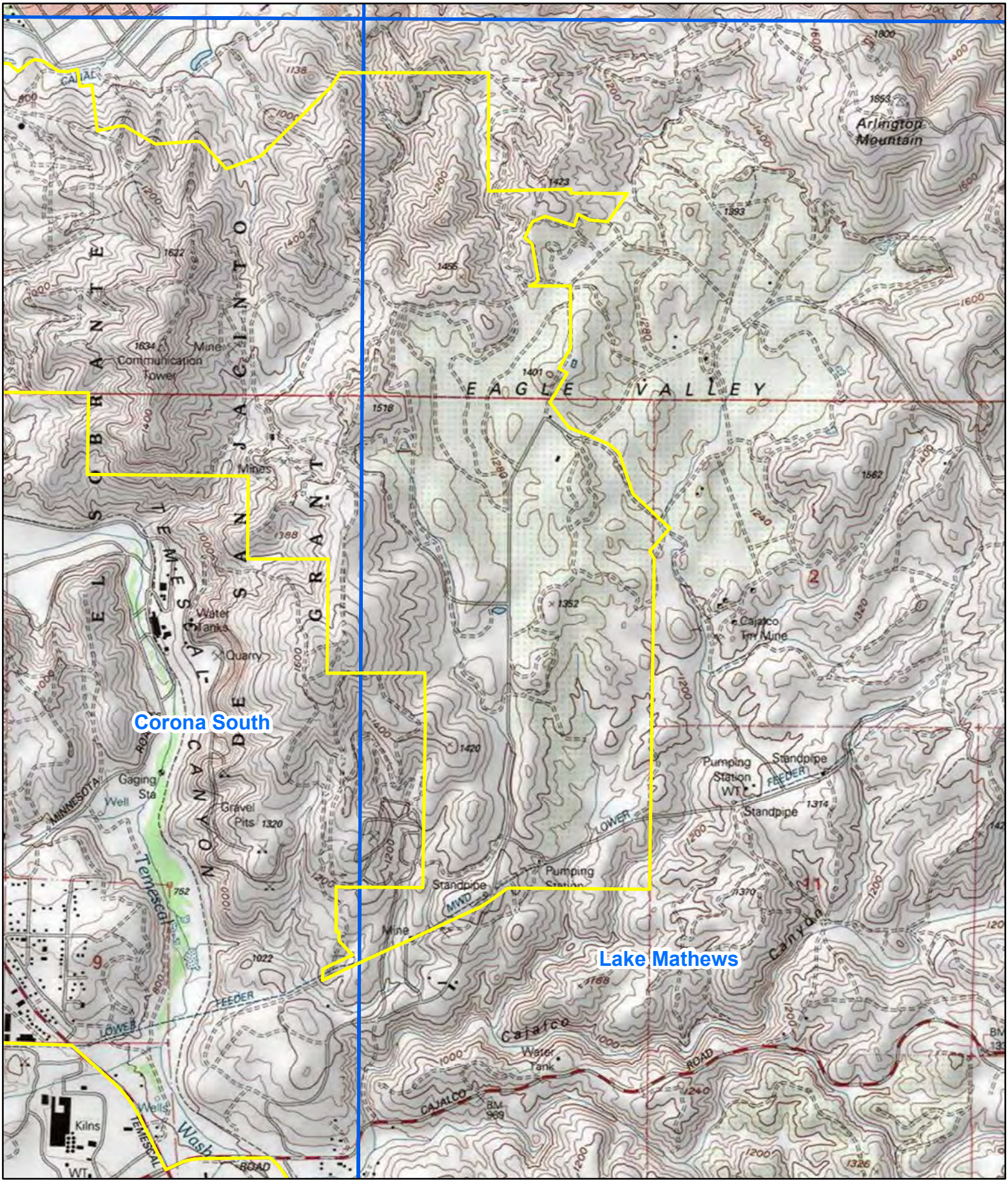
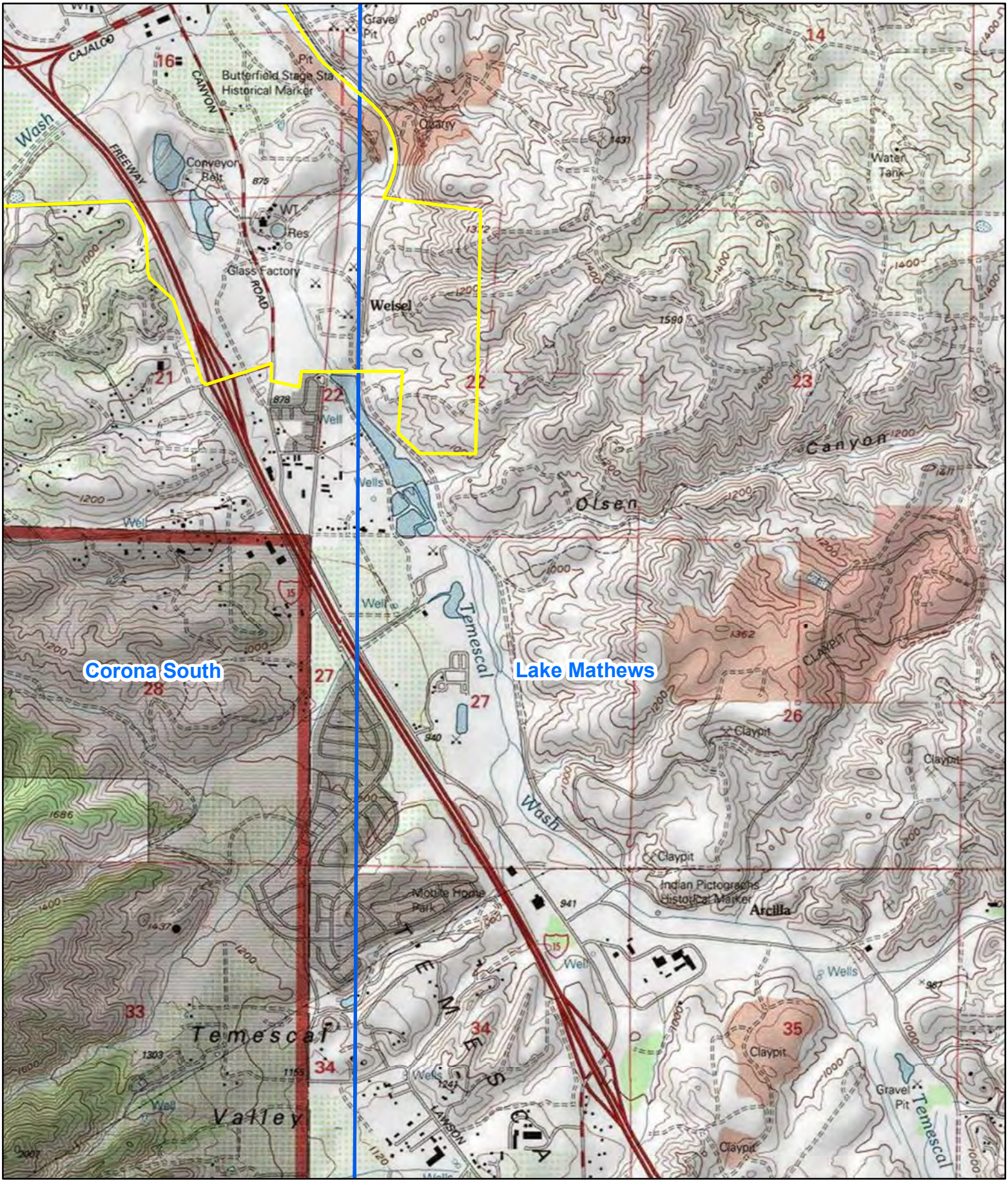


Figure 1. Project Area

RED TAIL ENVIRONMENTAL



1:24,000

0 250 500 1,000 Meters

0 1,000 2,000 4,000 Feet

Legend

- Project Area
- 7.5' USGS Quads

Figure 1. Project Area

RED TAIL ENVIRONMENTAL

RED TAIL ENVIRONMENTAL

April 6, 2020

John Christman
Chairperson
Viejas Band of Kumeyaay Indians
1 Viejas Grade Road, Alpine, CA, 91901
619-445-3810

Re: City of Corona Reclaimed Water Project, Riverside County, California

Dear Mr. Christman,

Red Tail Environmental (Red Tail) is conducting an archaeological study for the City of Corona Reclaimed Water Project (project), located within the City of Corona, Riverside County, California. The project area includes the entire City of Corona and the city's sphere of influence. The project is subject to the California Environmental Quality Act (CEQA) and will assess the environmental impact of the City of Corona's Reclaimed Water Master Plan. The City of Corona is the lead agency. The project area is shown on the following USGS 7.5' Quad Maps:

- USGS 7.5' Prado Dam Quad map within:
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- USGS 7.5' Corona North Quad map within:
  - Unsectioned portions of the La Sierra Yorba Land Grant,
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A record search of the Sacred Lands File with the California Native American Heritage Commission was positive. Red Tail also conducted a record search at the Eastern Information Center.

We are contacting you to request additional information regarding the Project area, if you are aware of any issues of cultural concern regarding the area shown on the enclosed map. In particular, we would like to know if you have knowledge of any Traditional Cultural Properties, Sacred Sites, Tribal Cultural Resources, resource collecting areas, or any other areas of concern of which you would wish us to be aware. If you have any questions or concerns regarding the proposed Project, please contact me at the address or phone number listed below, or via email at Shelby@redtailenvironmental.com. We appreciate any input you may have on this project.

Sincerely,



Shelby Castells, M.A., RPA
Director of Archaeology
Attachments: Project Area Maps (1-10)

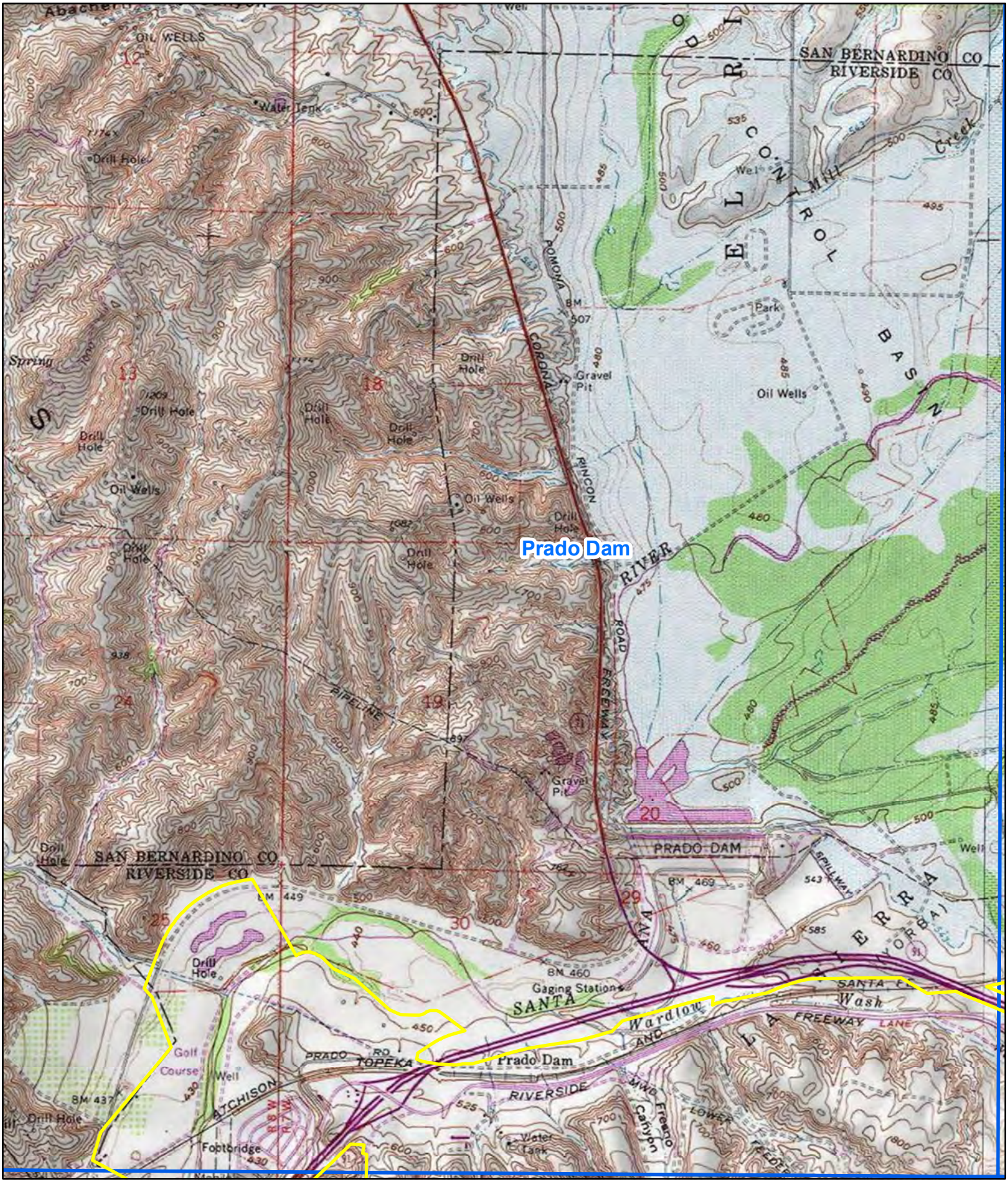


Figure 1. Project Area

RED TAIL ENVIRONMENTAL



Figure 1. Project Area



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Legend

- Project Area
- 7.5' USGS Quads

RED TAIL ENVIRONMENTAL



Figure 1. Project Area

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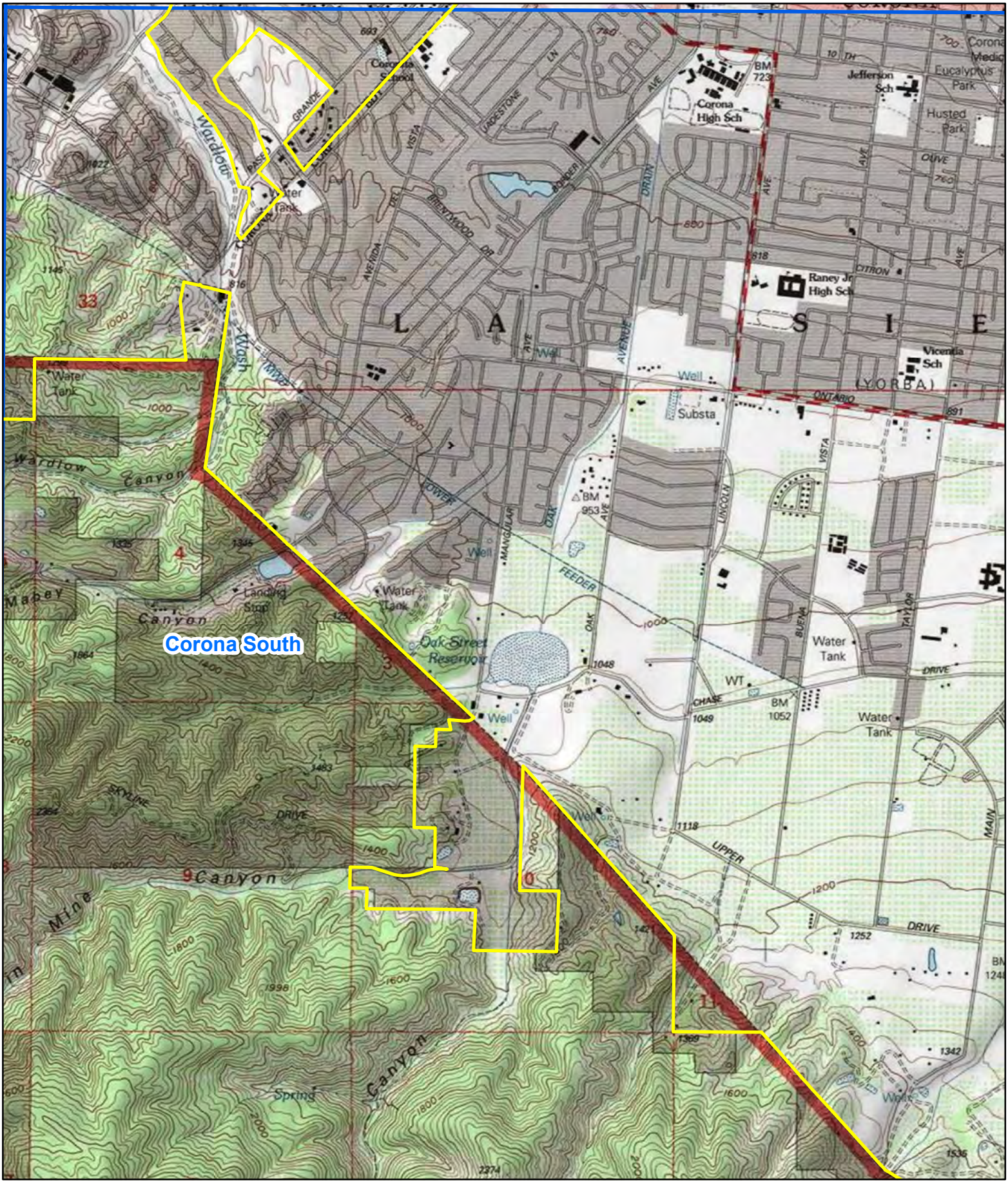


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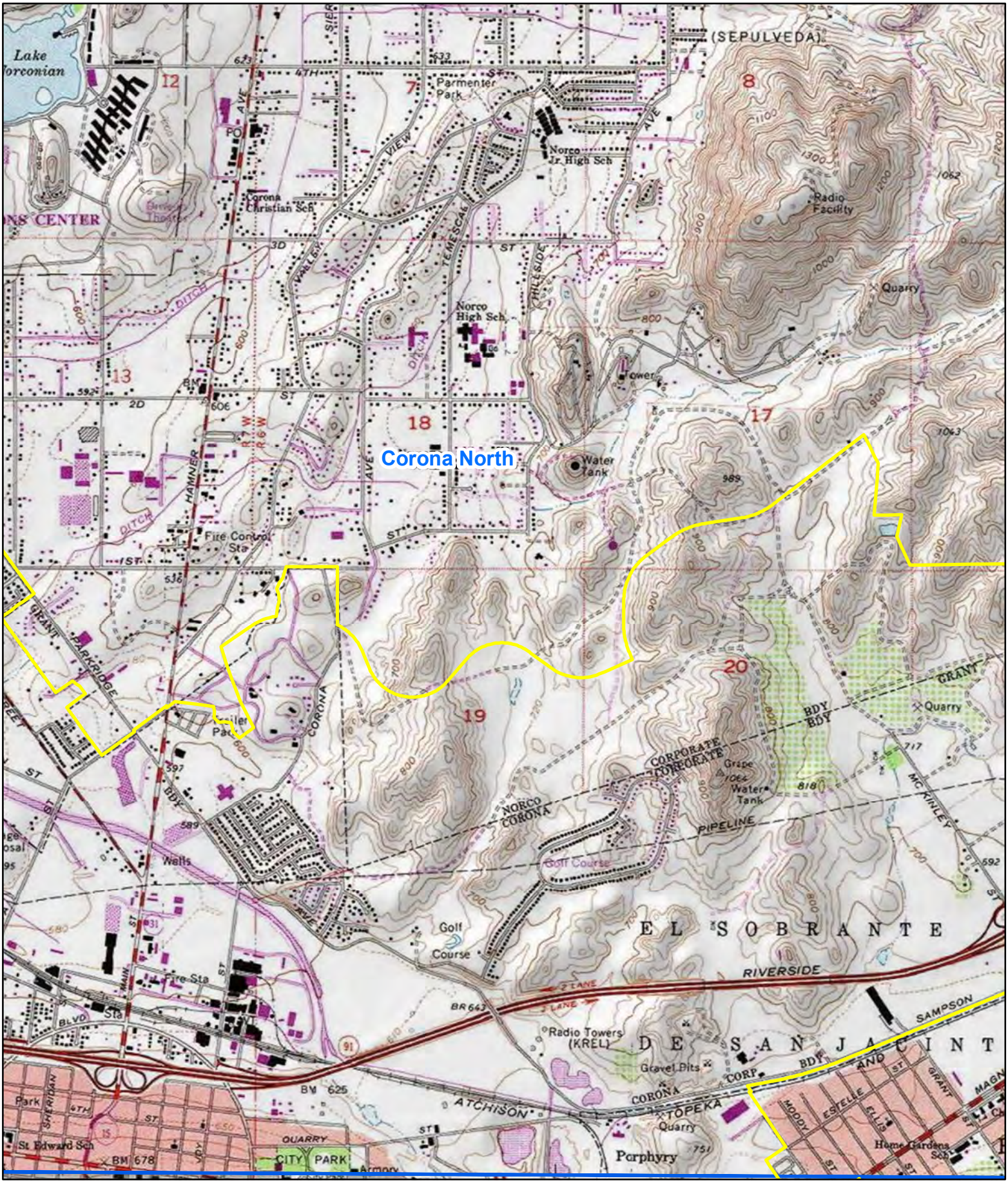
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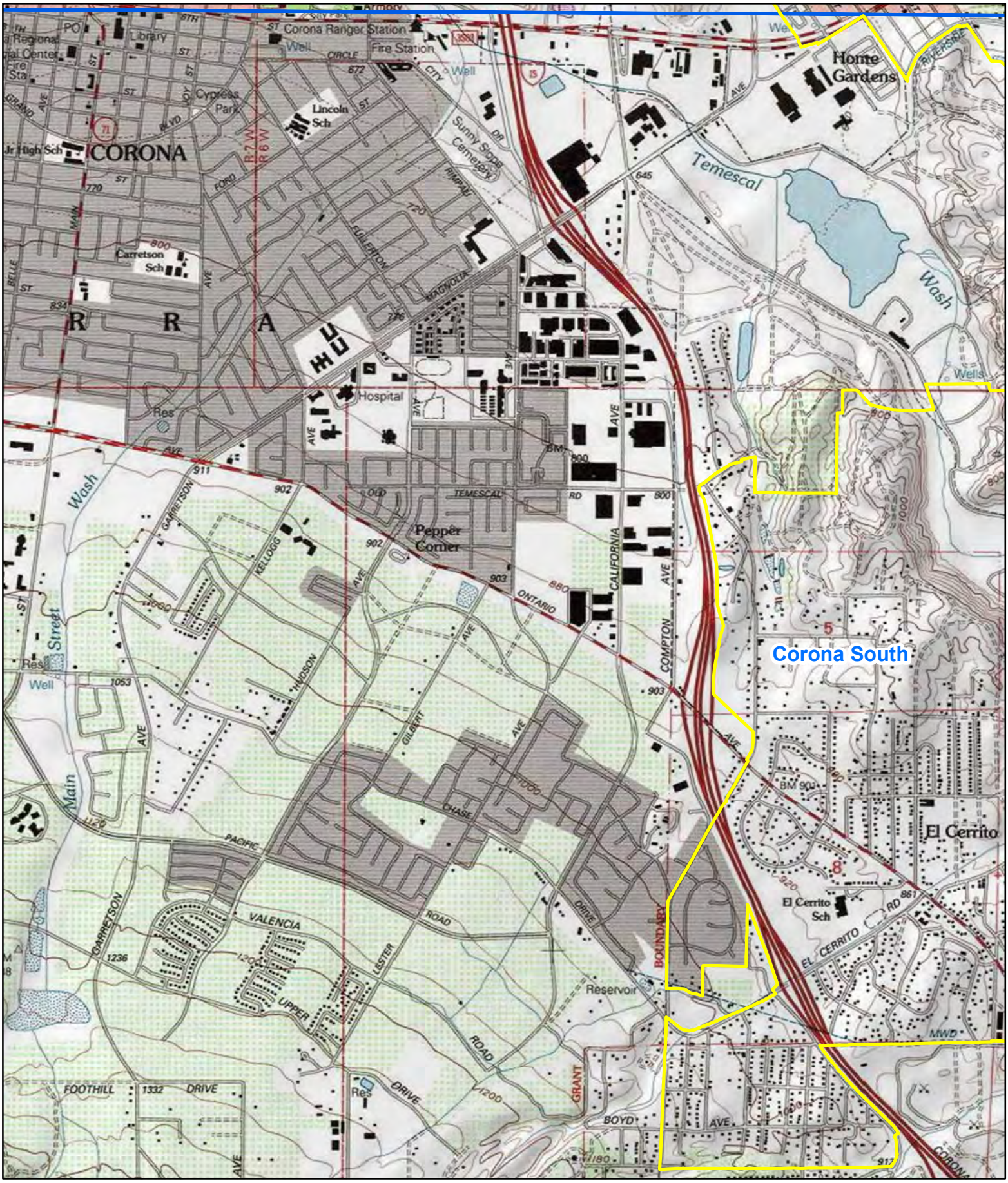


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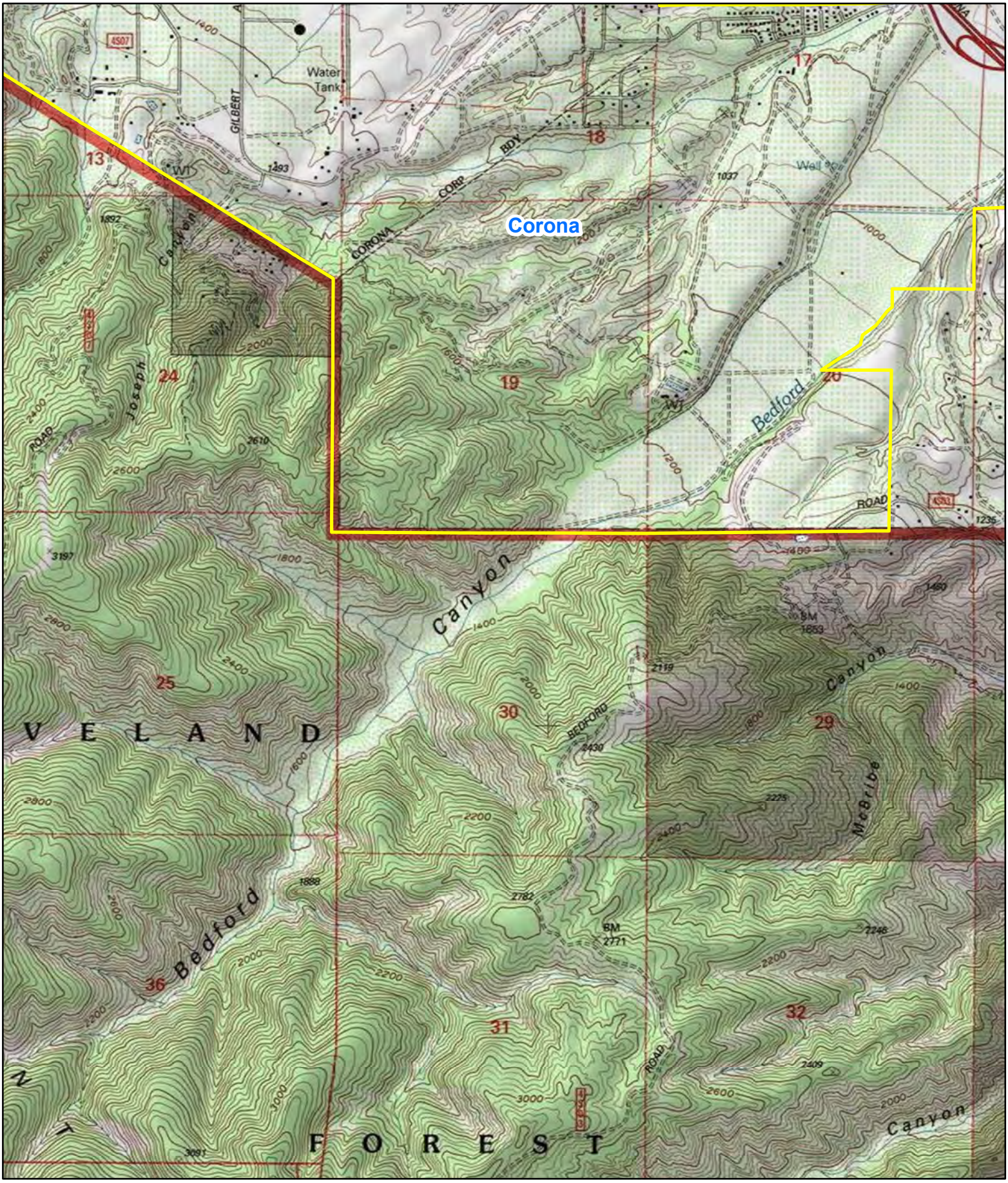


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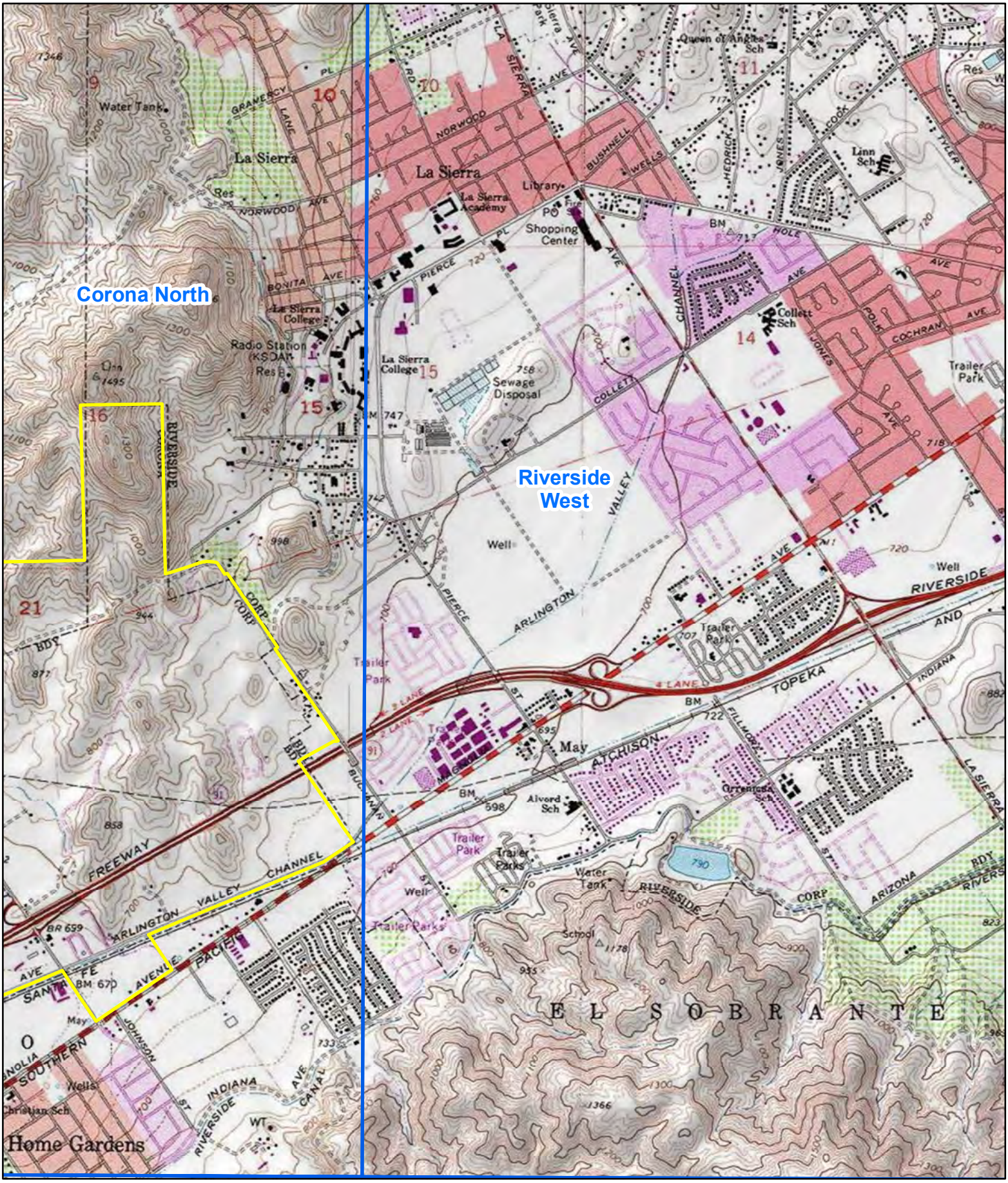


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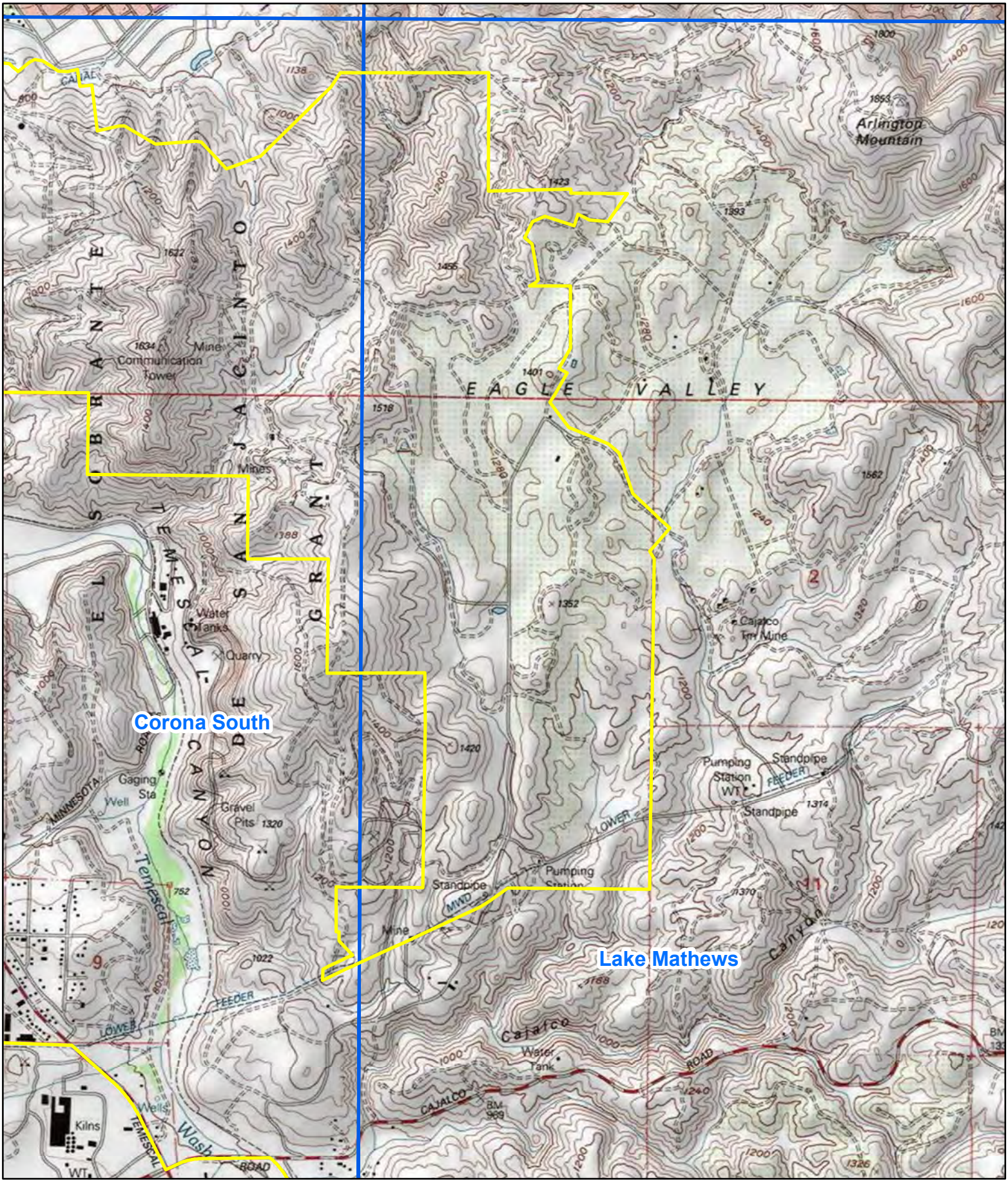
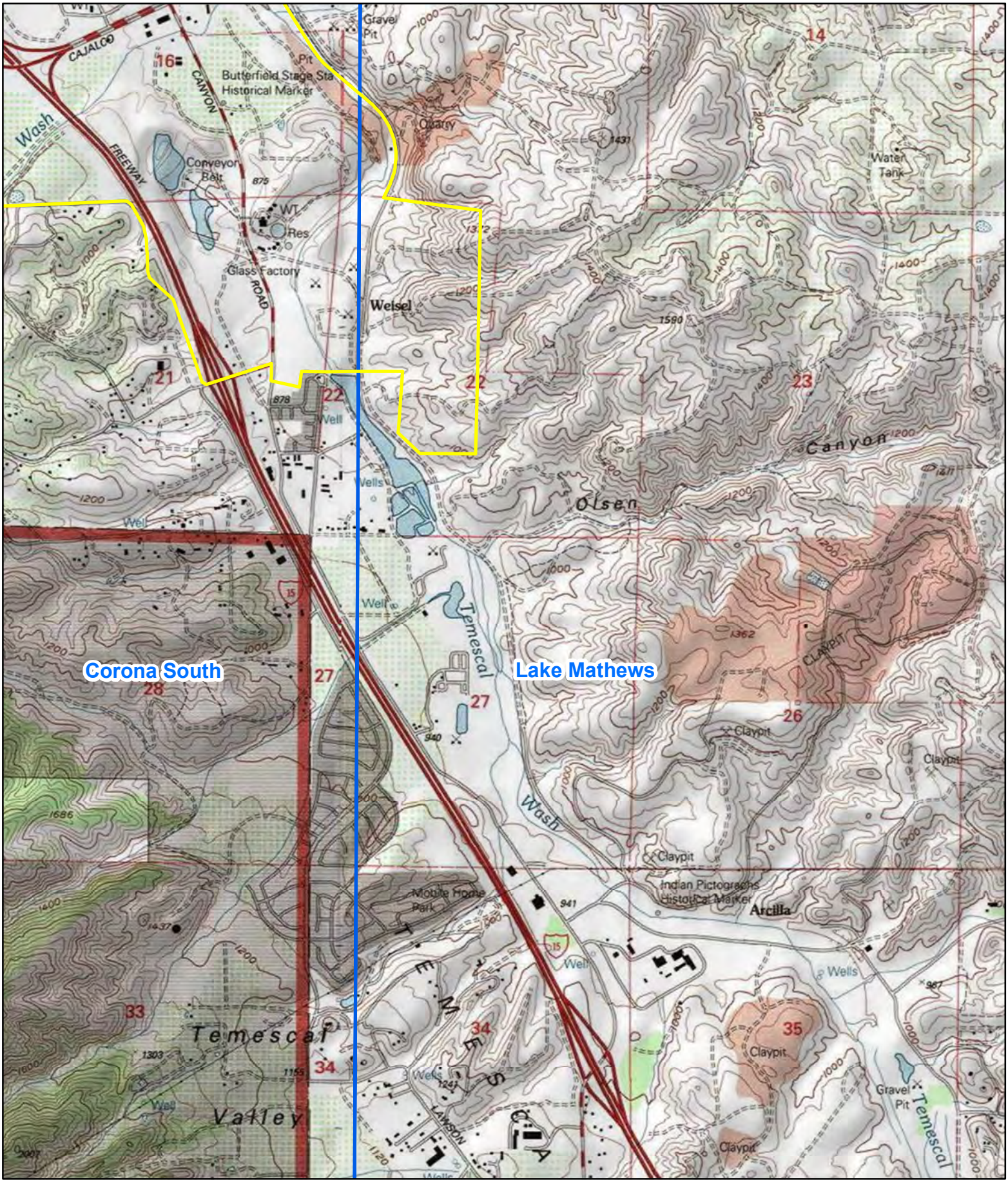


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Figure 1. Project Area

RED TAIL ENVIRONMENTAL

RED TAIL ENVIRONMENTAL

April 6, 2020

Jeff Grubbe
Chairperson
Agua Caliente Band of Cahuilla Indians
5401 Dinah Shore Drive, Palm Springs, CA, 92264
760-699-6800

Re: City of Corona Reclaimed Water Project, Riverside County, California

Dear Mr. Grubbe,

Red Tail Environmental (Red Tail) is conducting an archaeological study for the City of Corona Reclaimed Water Project (project), located within the City of Corona, Riverside County, California. The project area includes the entire City of Corona and the city's sphere of influence. The project is subject to the California Environmental Quality Act (CEQA) and will assess the environmental impact of the City of Corona's Reclaimed Water Master Plan. The City of Corona is the lead agency. The project area is shown on the following USGS 7.5' Quad Maps:

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A record search of the Sacred Lands File with the California Native American Heritage Commission was positive. Red Tail also conducted a record search at the Eastern Information Center.

We are contacting you to request additional information regarding the Project area, if you are aware of any issues of cultural concern regarding the area shown on the enclosed map. In particular, we would like to know if you have knowledge of any Traditional Cultural Properties, Sacred Sites, Tribal Cultural Resources, resource collecting areas, or any other areas of concern of which you would wish us to be aware. If you have any questions or concerns regarding the proposed Project, please contact me at the address or phone number listed below, or via email at Shelby@redtailenvironmental.com. We appreciate any input you may have on this project.

Sincerely,



Shelby Castells, M.A., RPA
Director of Archaeology
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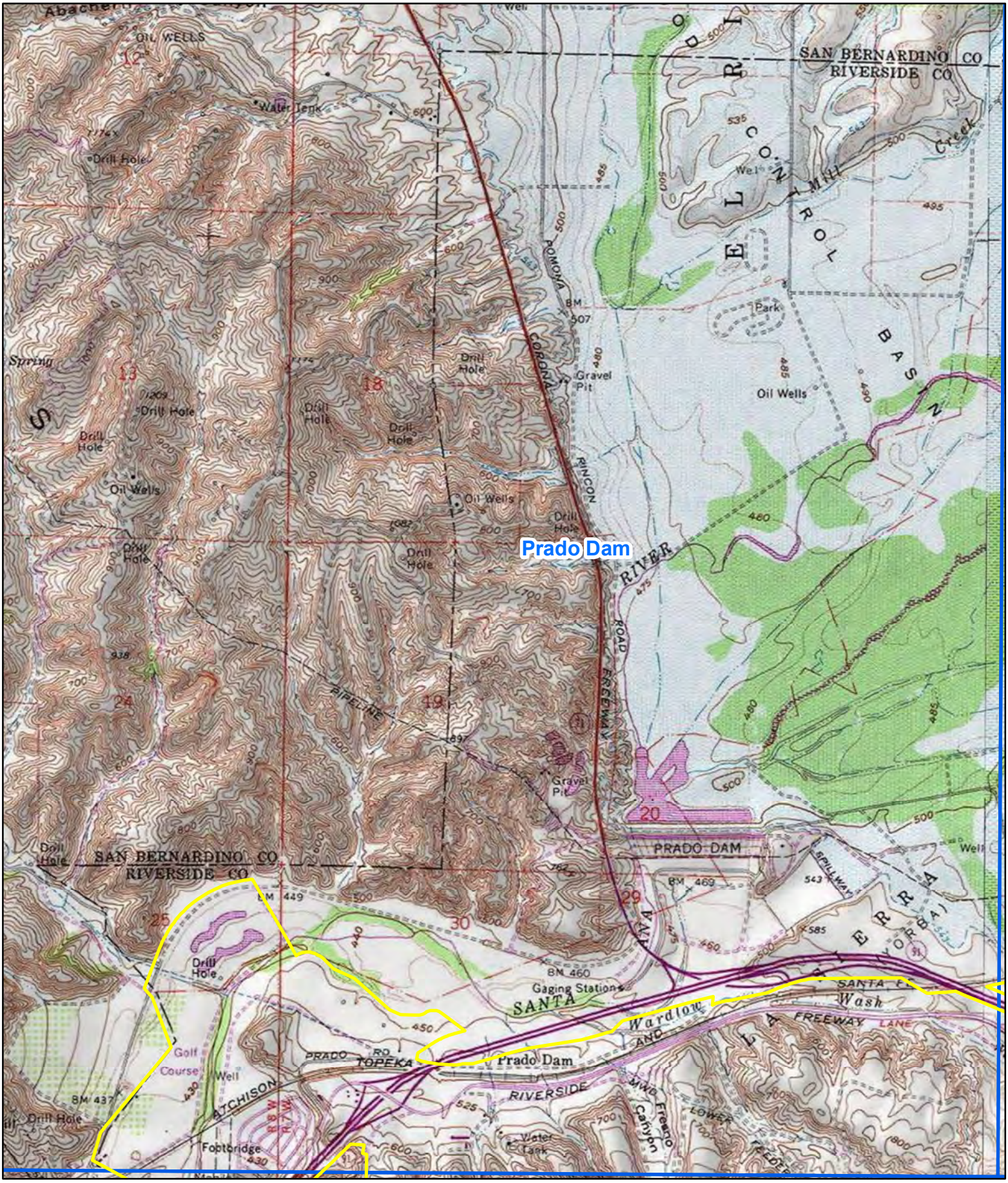


Figure 1. Project Area

RED TAIL ENVIRONMENTAL



Figure 1. Project Area



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Legend

- Project Area
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RED TAIL ENVIRONMENTAL



Figure 1. Project Area

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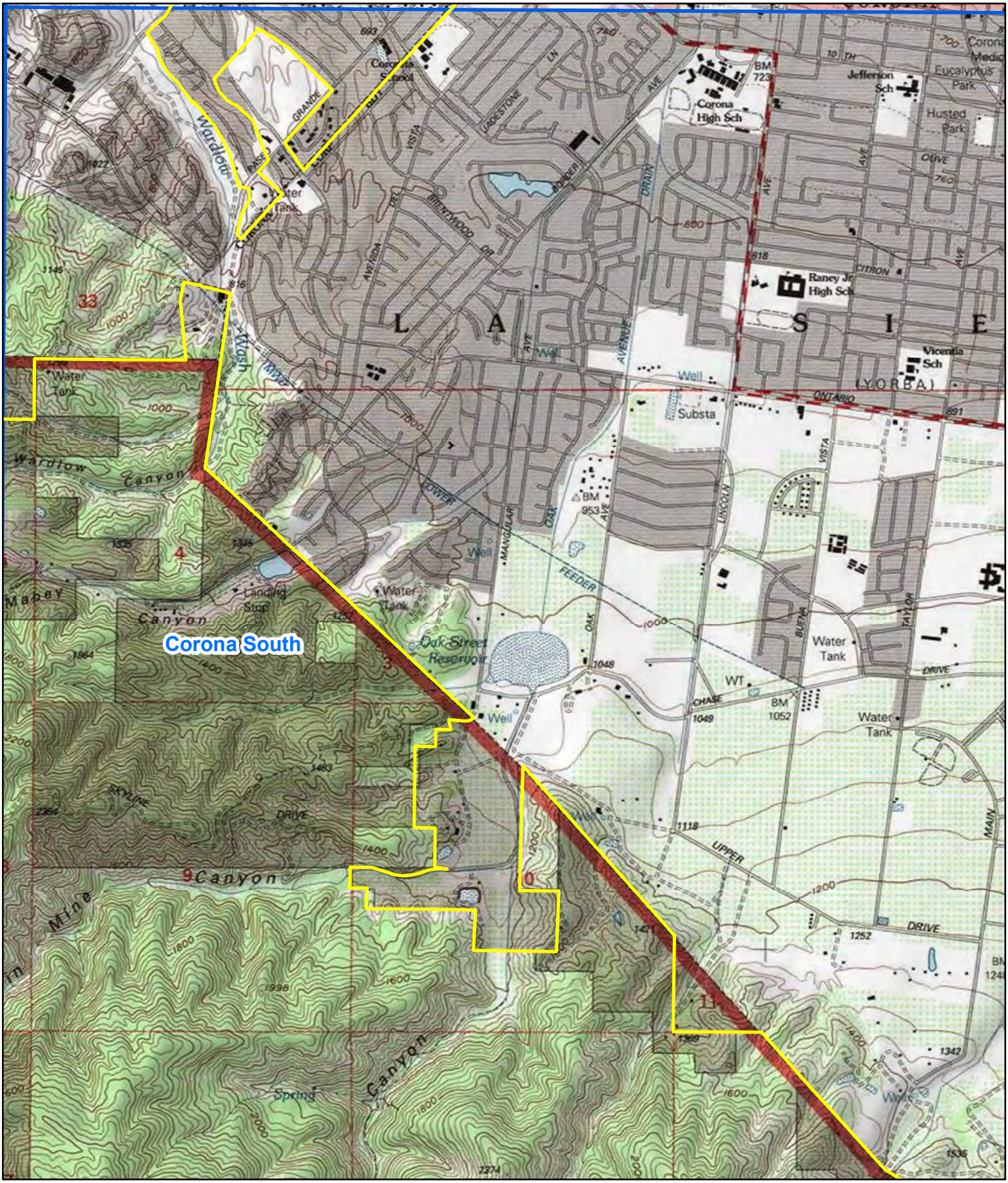


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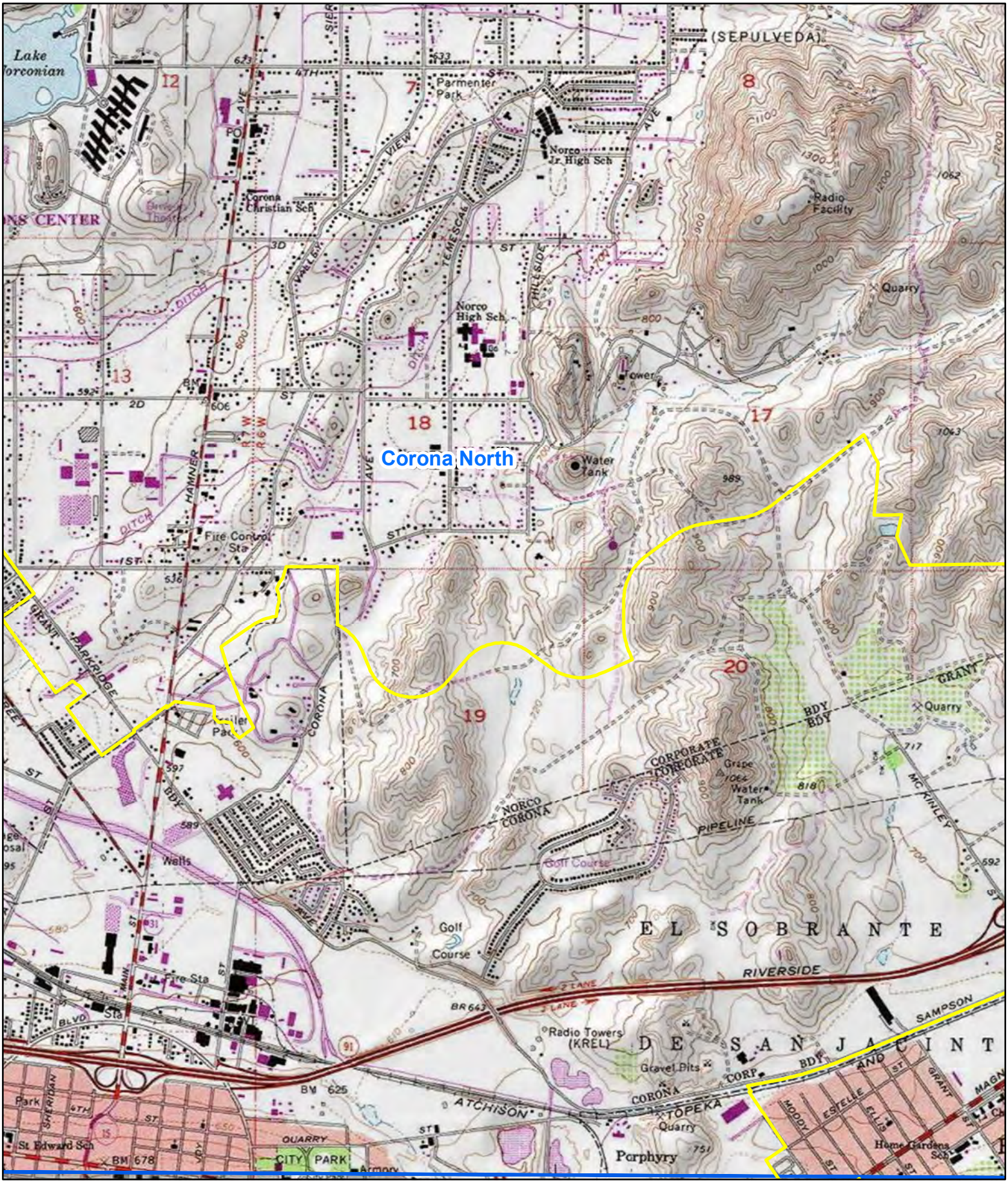
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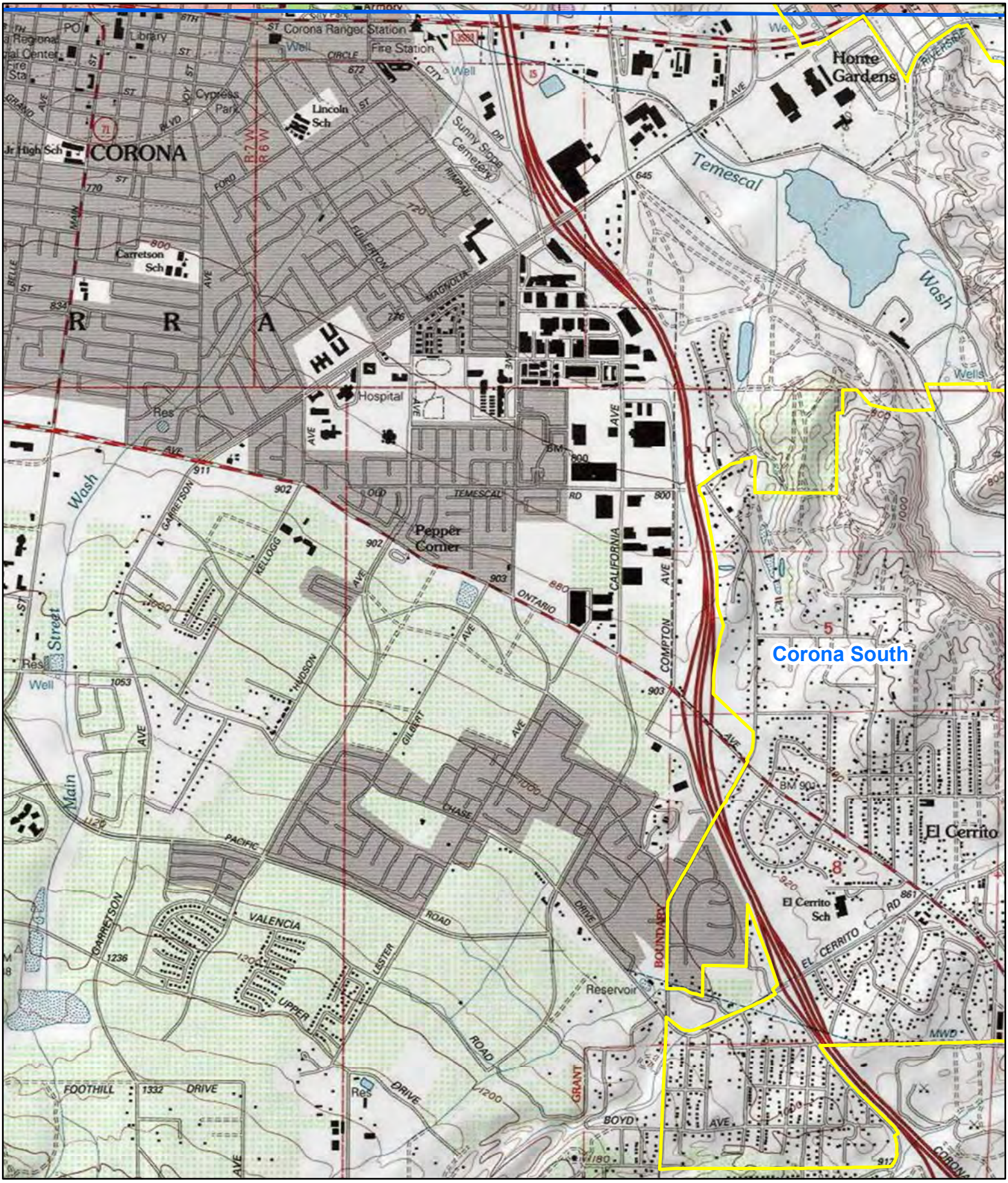


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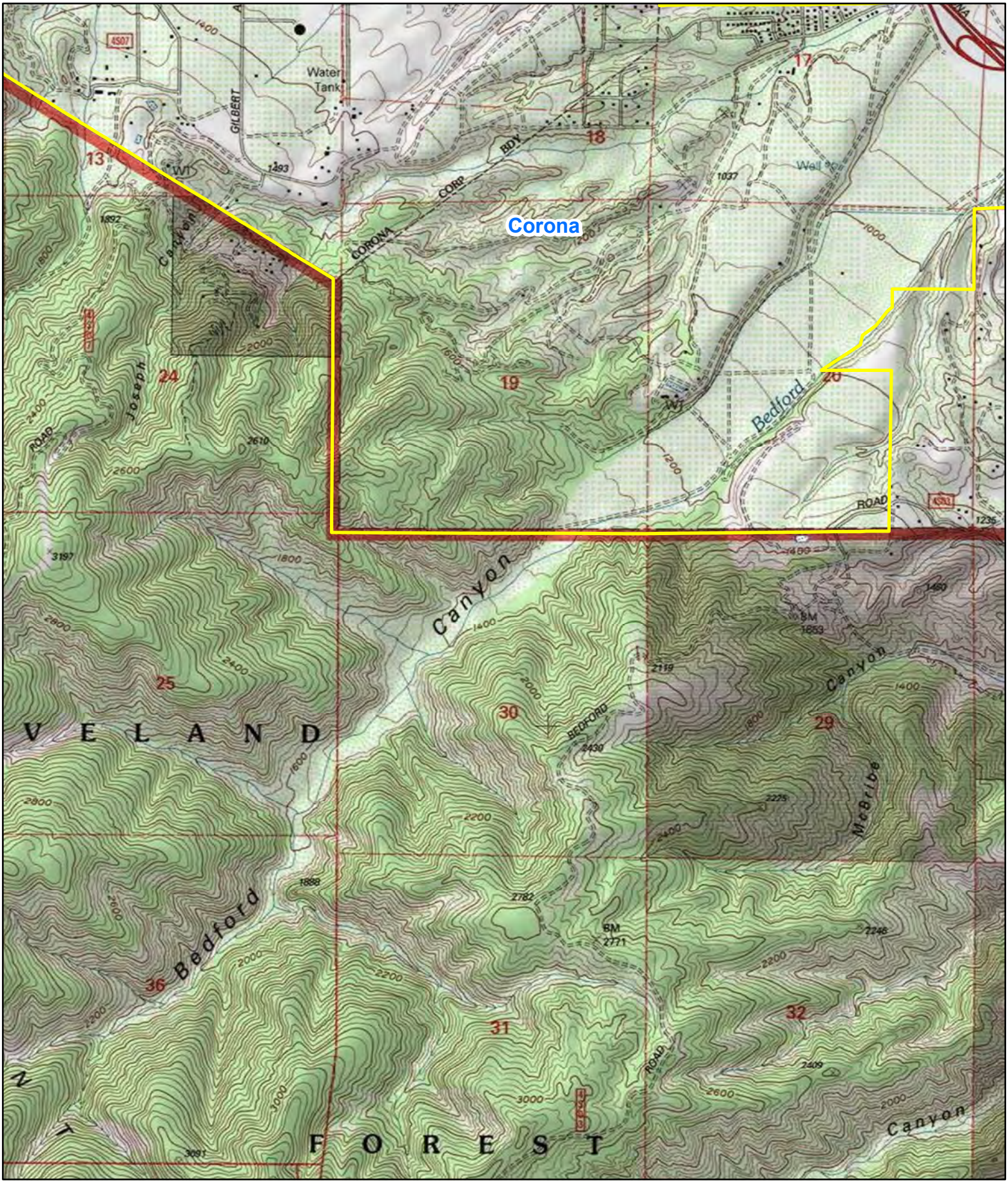


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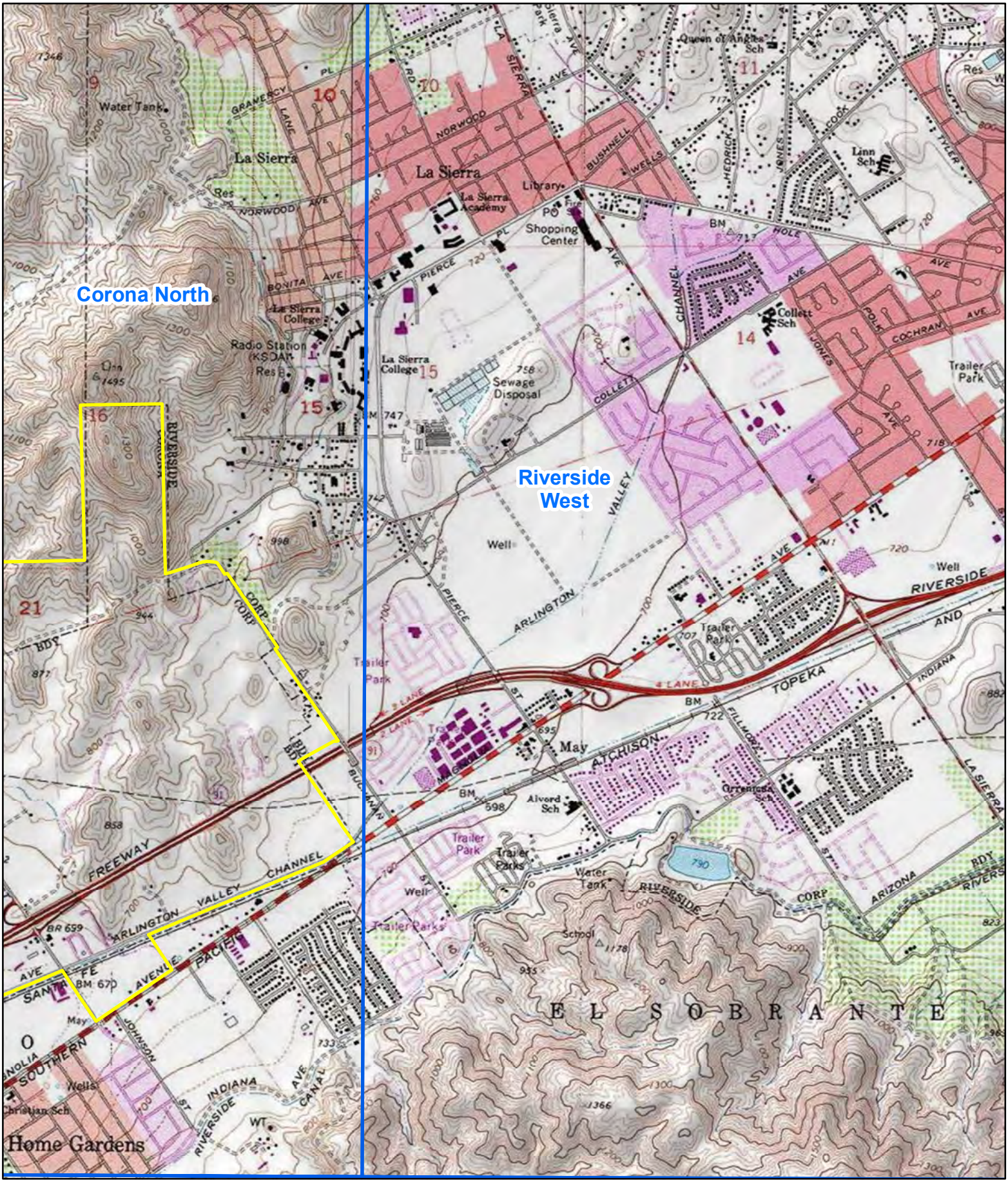


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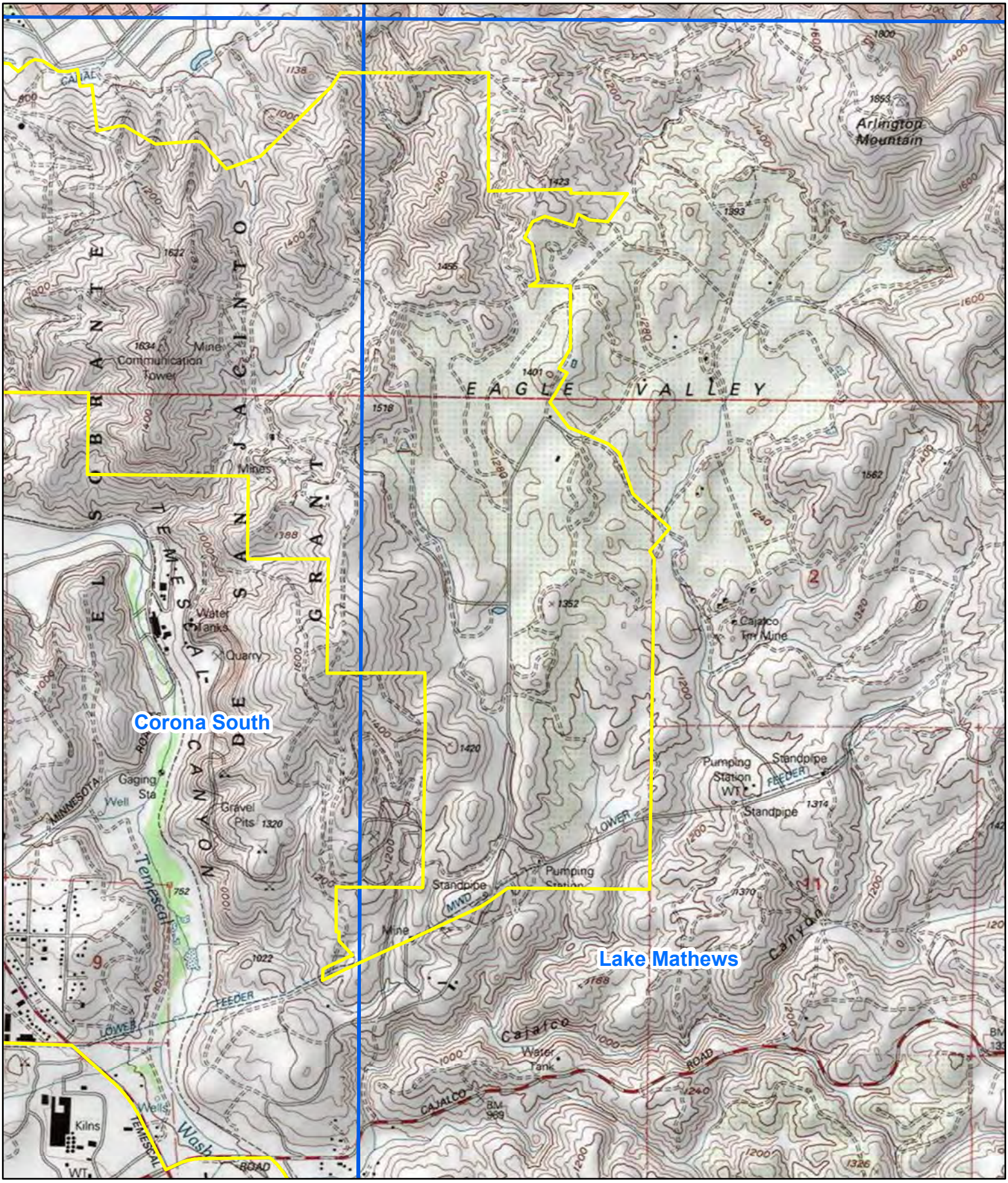
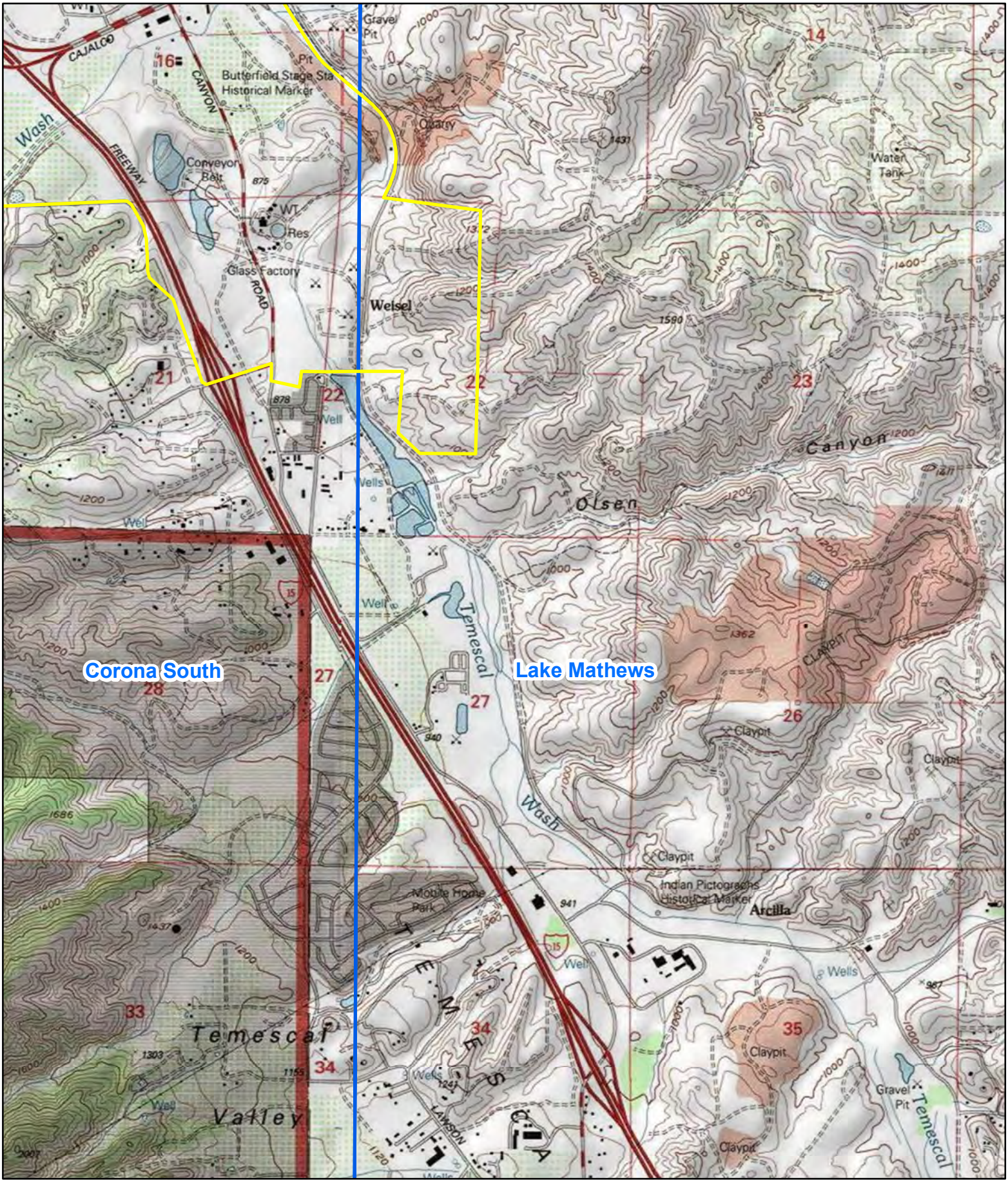


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RED TAIL ENVIRONMENTAL

RED TAIL ENVIRONMENTAL

April 6, 2020

Joeseph Hamilton
Chairperson
Ramona Band of Cahuilla
PO Box 391670, Anza, CA, 92539
951-763-4105
admin@ramona-nsn.gov

Re: City of Corona Reclaimed Water Project, Riverside County, California

Dear Mr. Hamilton,

Red Tail Environmental (Red Tail) is conducting an archaeological study for the City of Corona Reclaimed Water Project (project), located within the City of Corona, Riverside County, California. The project area includes the entire City of Corona and the city's sphere of influence. The project is subject to the California Environmental Quality Act (CEQA) and will assess the environmental impact of the City of Corona's Reclaimed Water Master Plan. The City of Corona is the lead agency. The project area is shown on the following USGS 7.5' Quad Maps:

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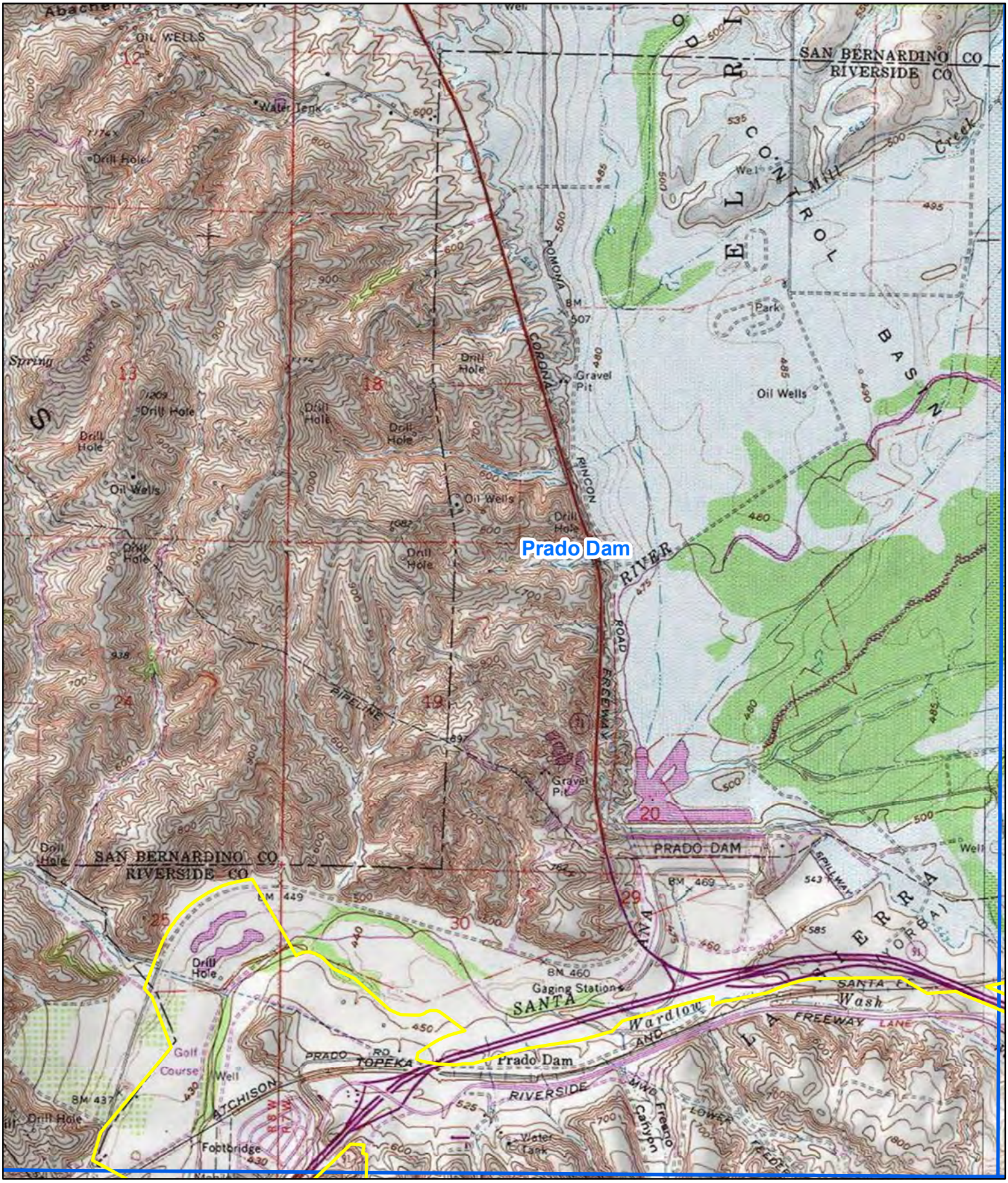


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RED TAIL ENVIRONMENTAL



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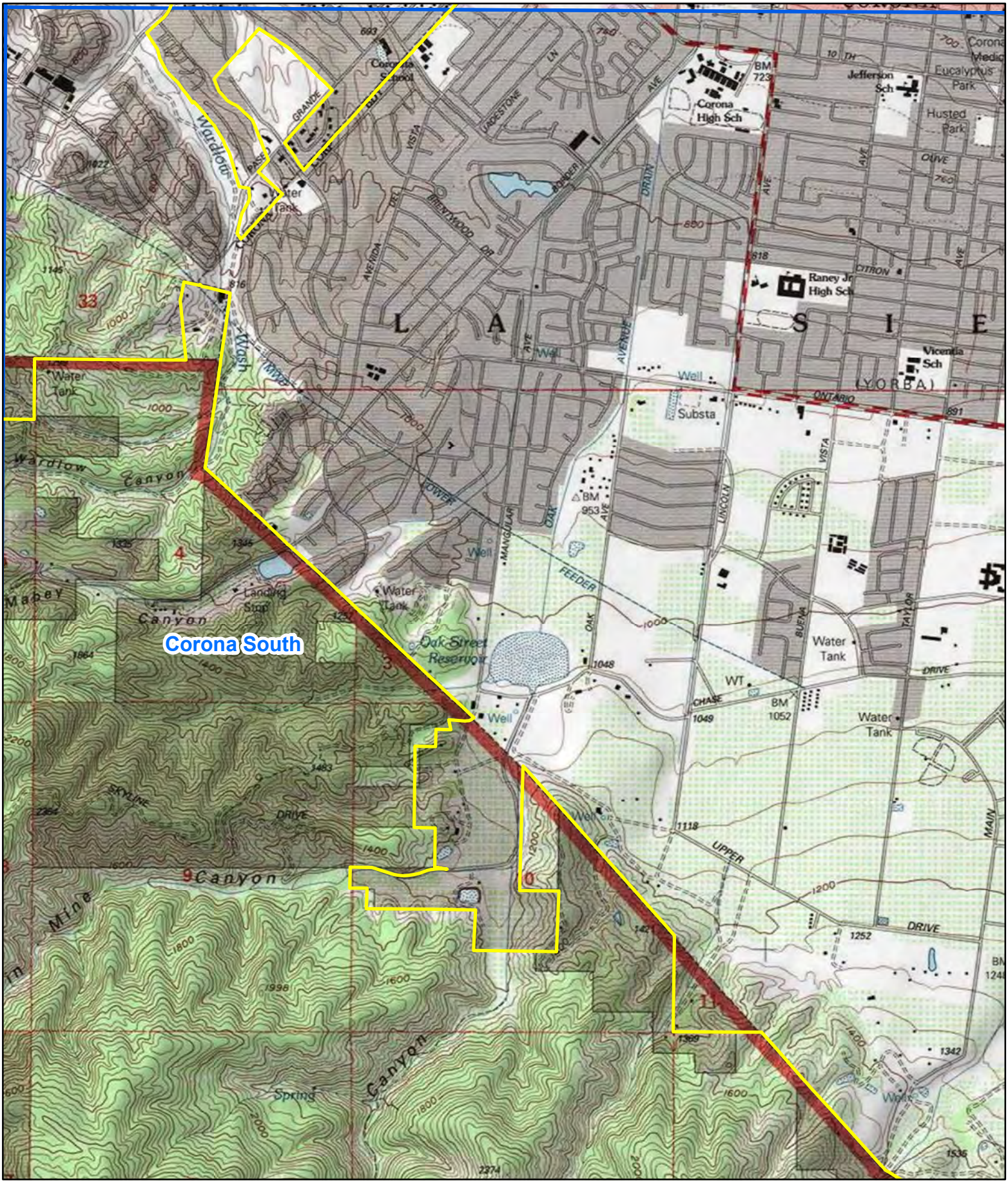


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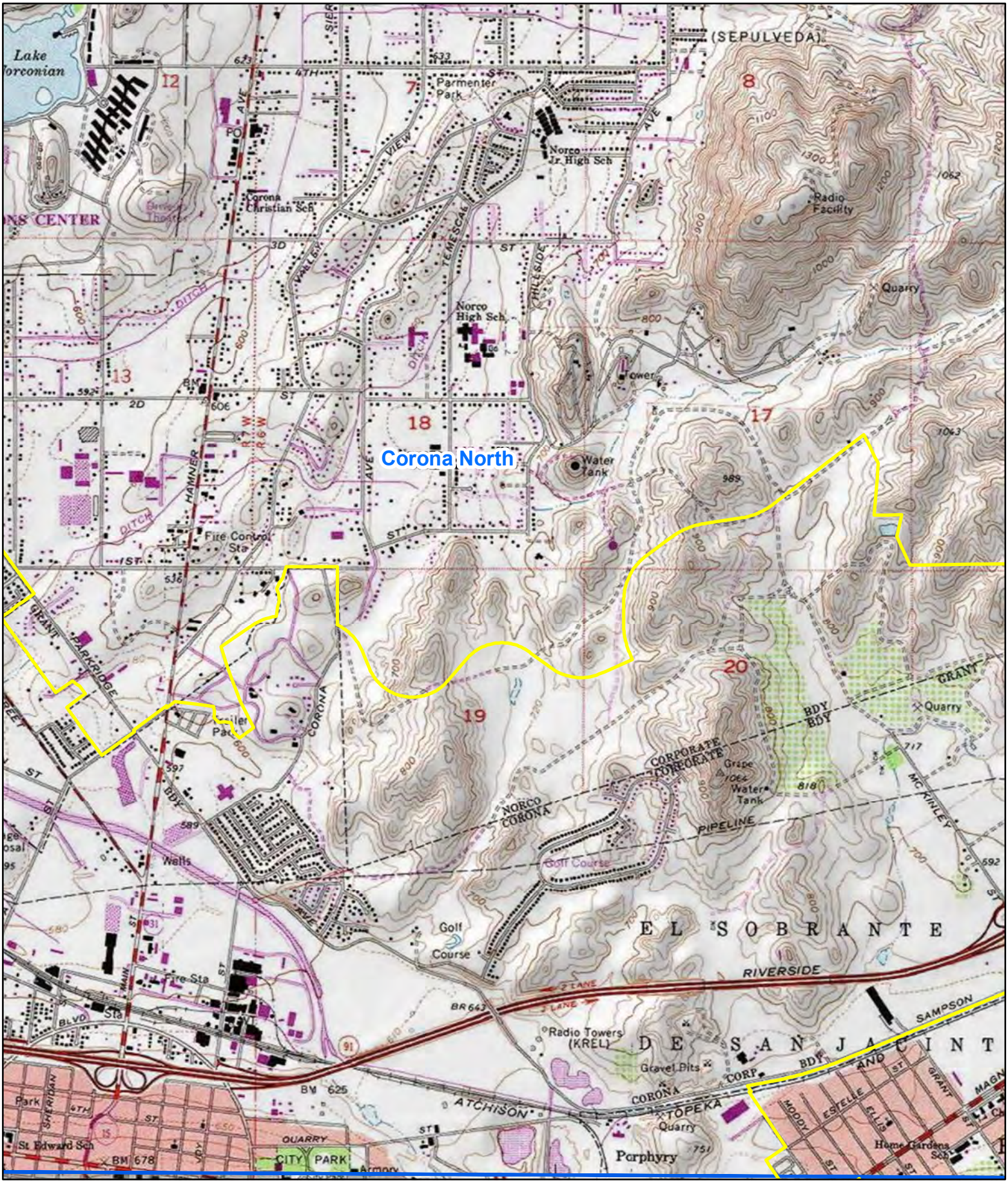
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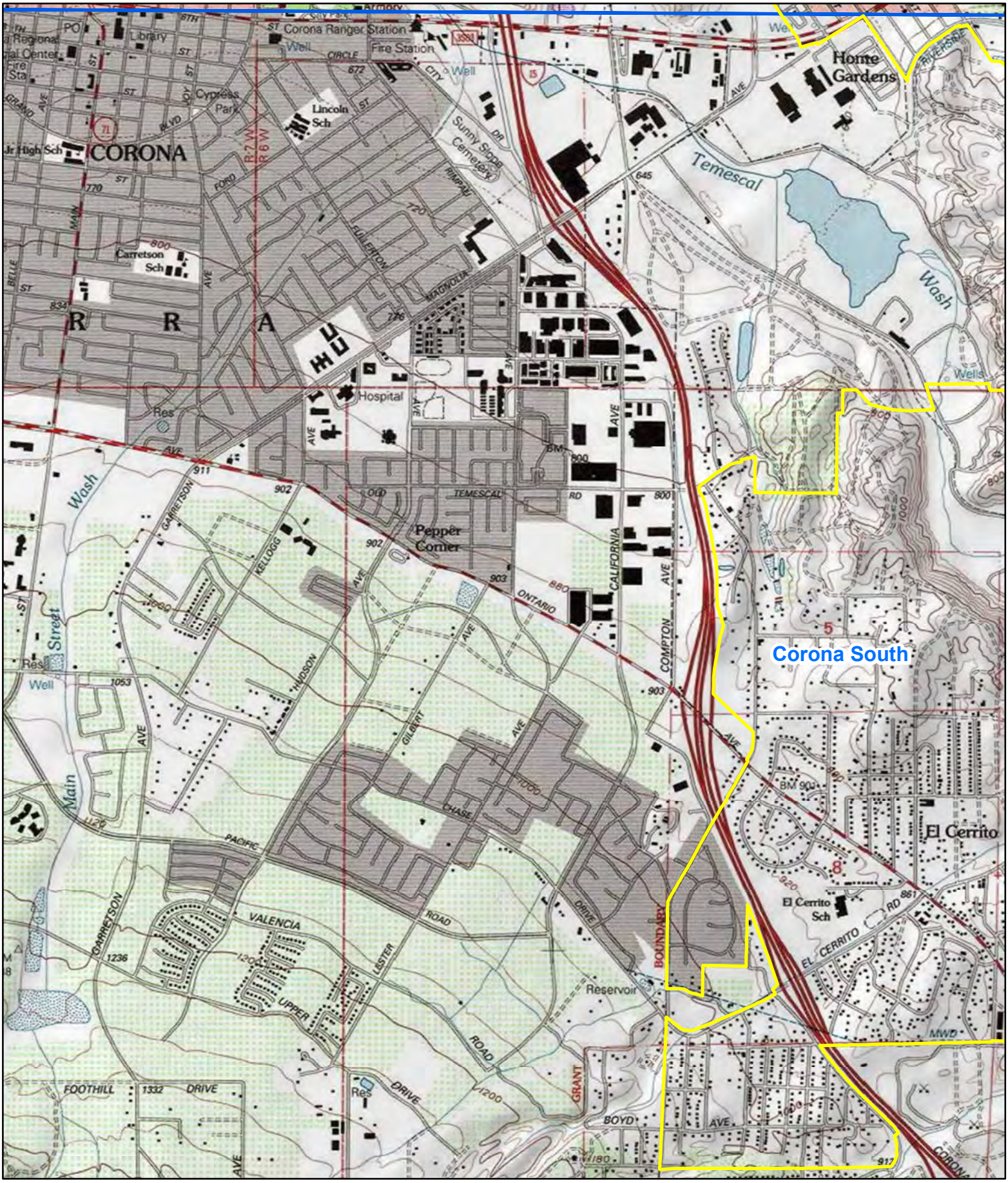


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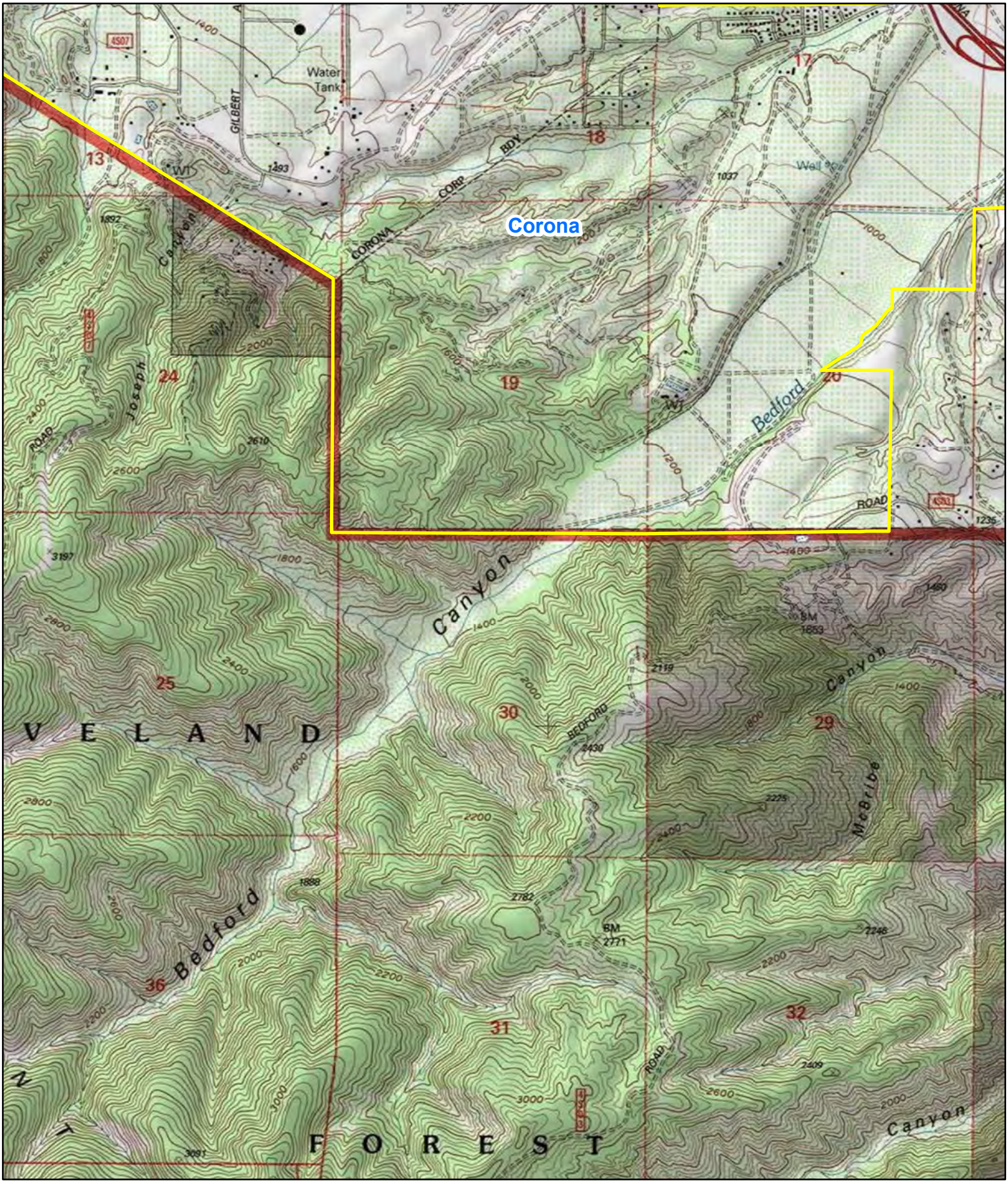


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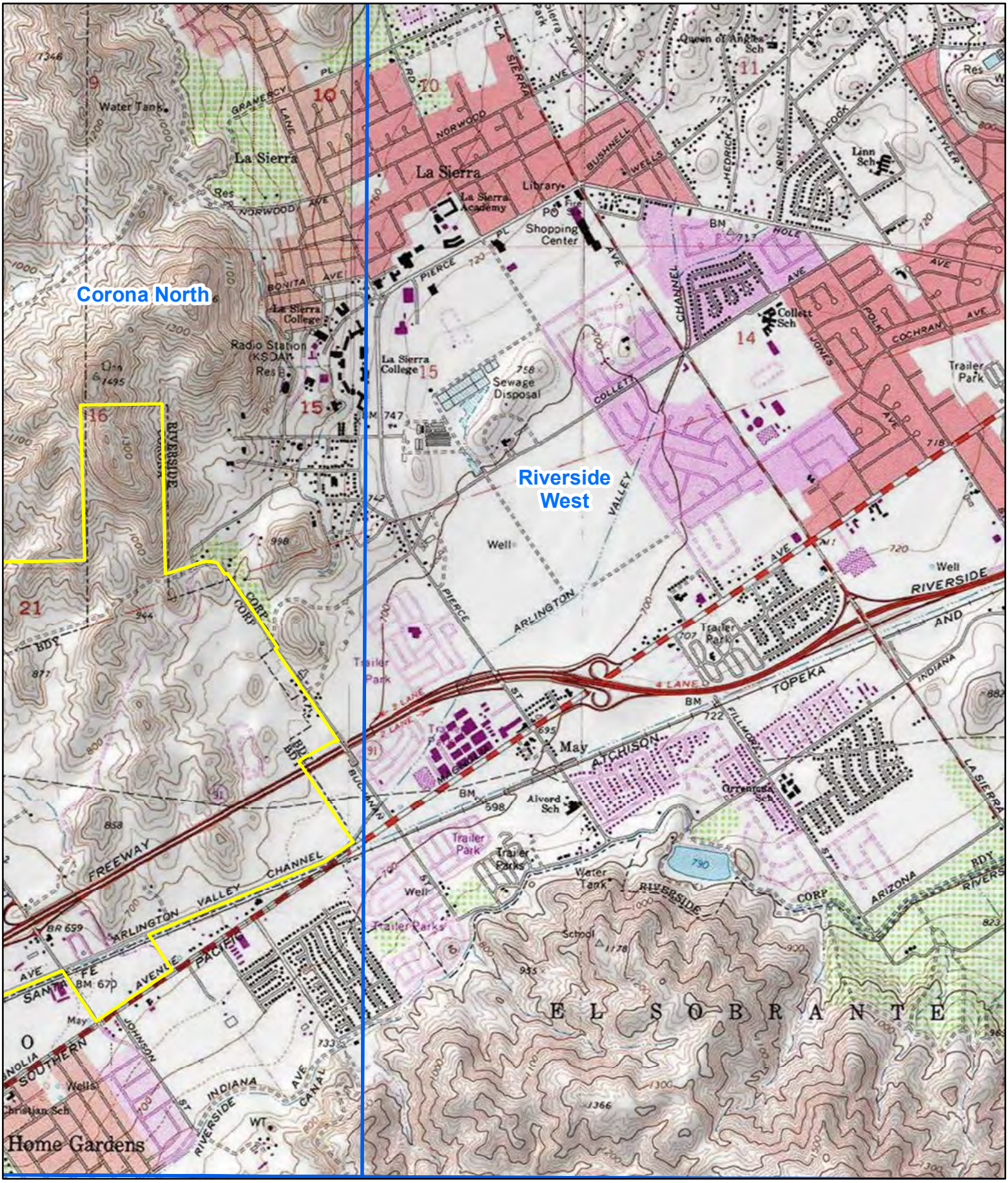


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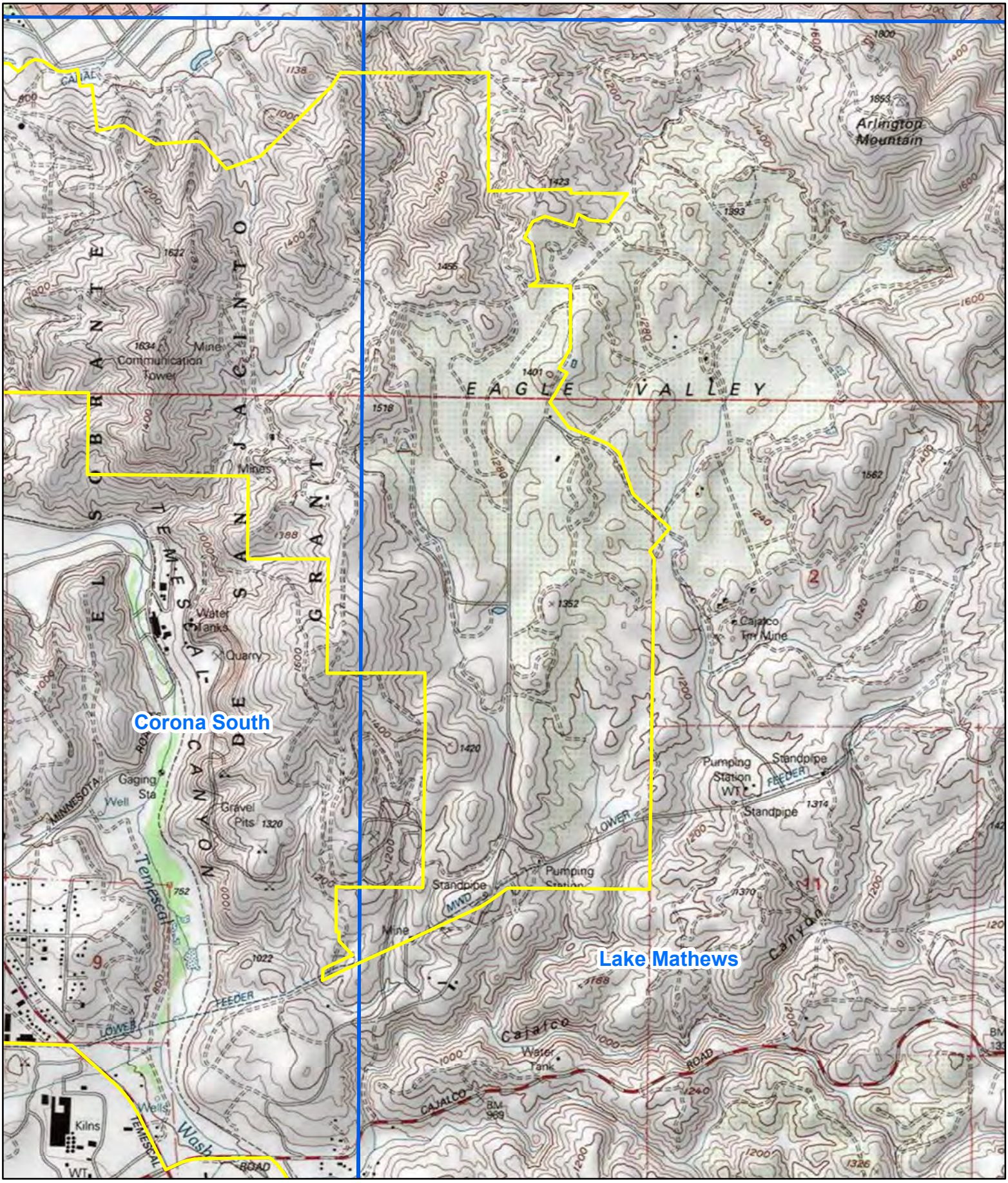
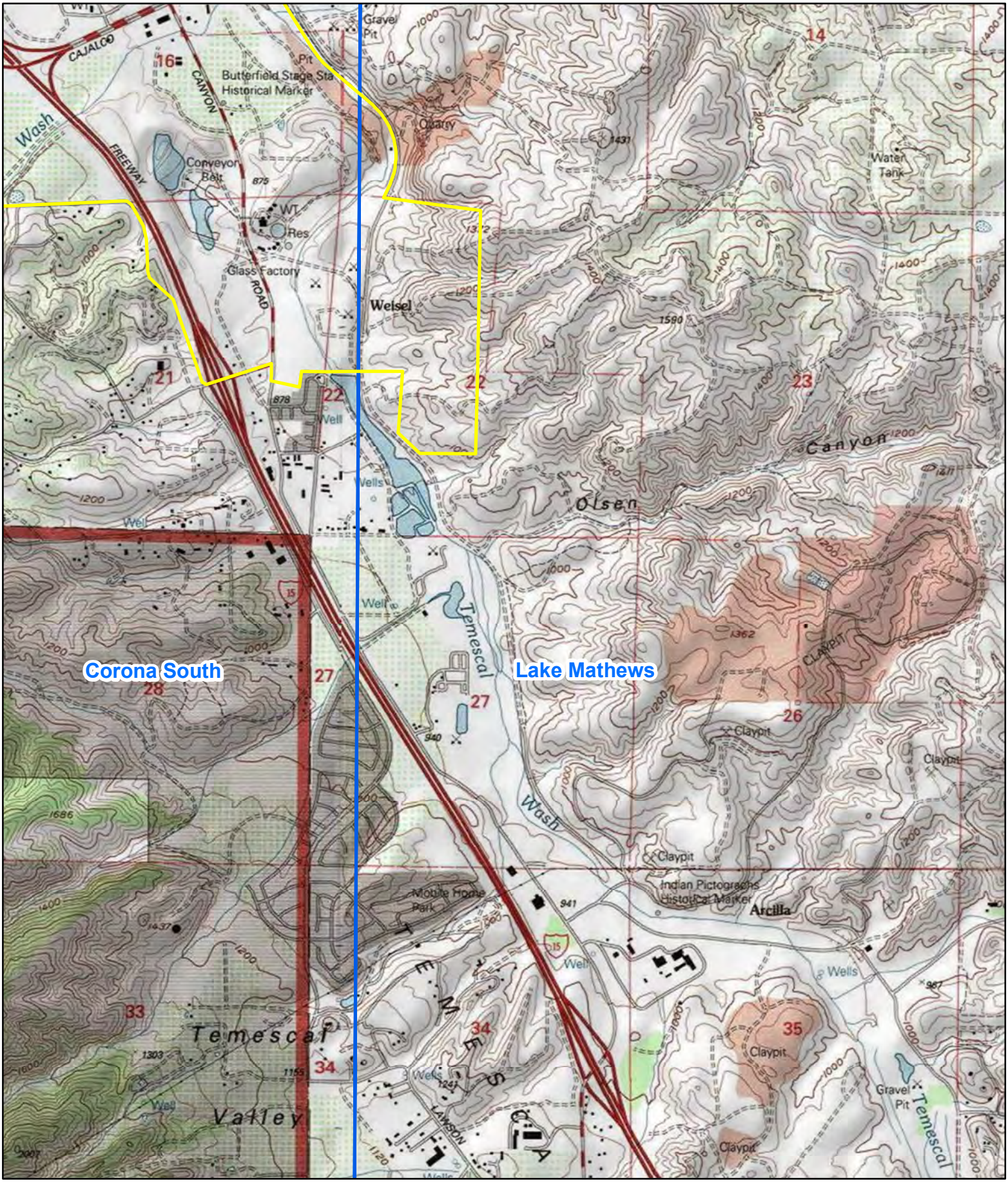


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RED TAIL ENVIRONMENTAL

RED TAIL ENVIRONMENTAL

April 6, 2020

Jill McCormick
Historic Preservation Officer
Quechan Tribe of the Fort Yuma Reservation
PO Box 1899, Yuma, AZ, 85366
760-572-2423
historicpreservation@quechantribe.com

Re: City of Corona Reclaimed Water Project, Riverside County, California

Dear Ms. McCormick,

Red Tail Environmental (Red Tail) is conducting an archaeological study for the City of Corona Reclaimed Water Project (project), located within the City of Corona, Riverside County, California. The project area includes the entire City of Corona and the city's sphere of influence. The project is subject to the California Environmental Quality Act (CEQA) and will assess the environmental impact of the City of Corona's Reclaimed Water Master Plan. The City of Corona is the lead agency. The project area is shown on the following USGS 7.5' Quad Maps:

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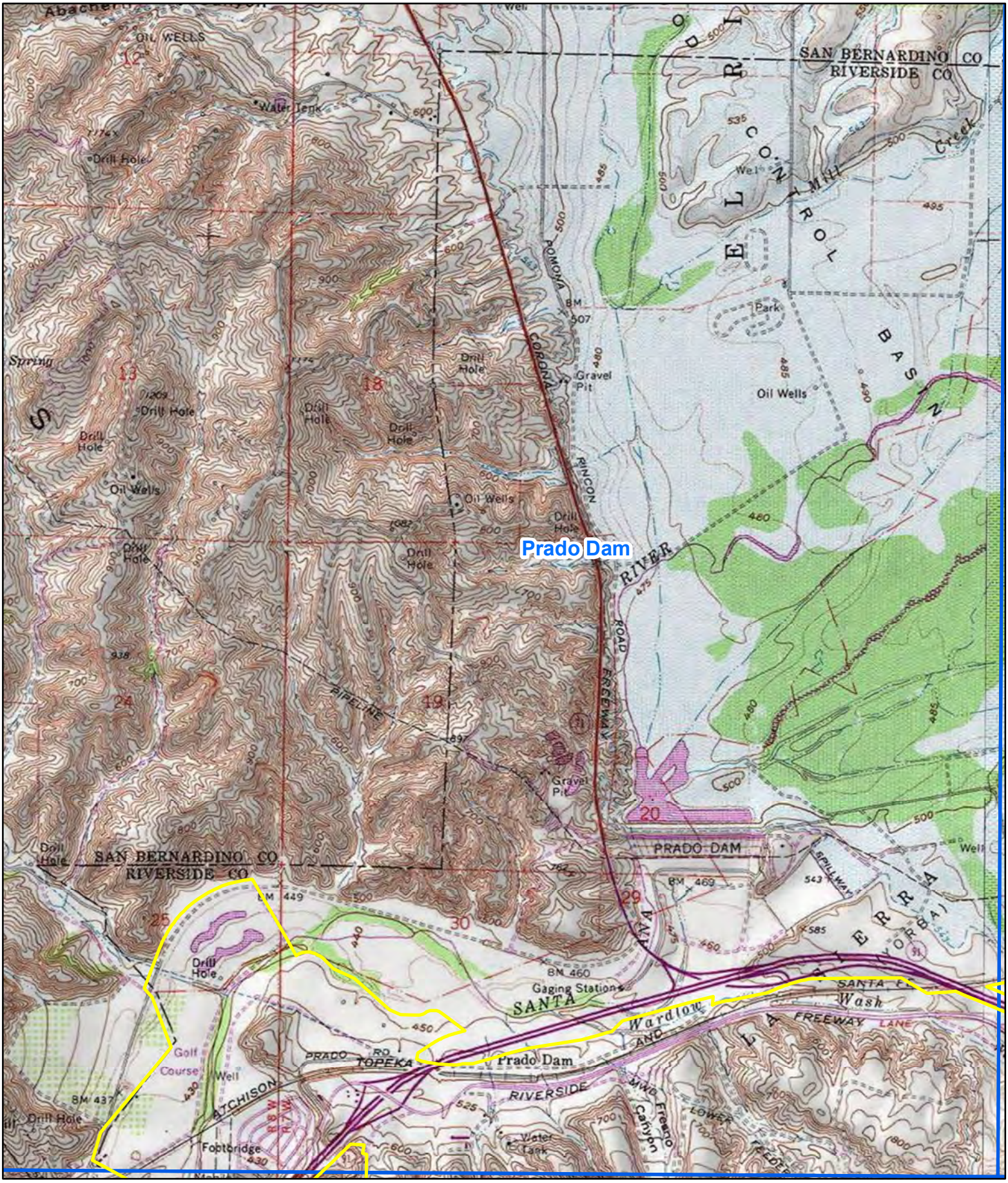


Figure 1. Project Area

RED TAIL ENVIRONMENTAL



Figure 1. Project Area



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Legend

- Project Area
- 7.5' USGS Quads

RED TAIL ENVIRONMENTAL



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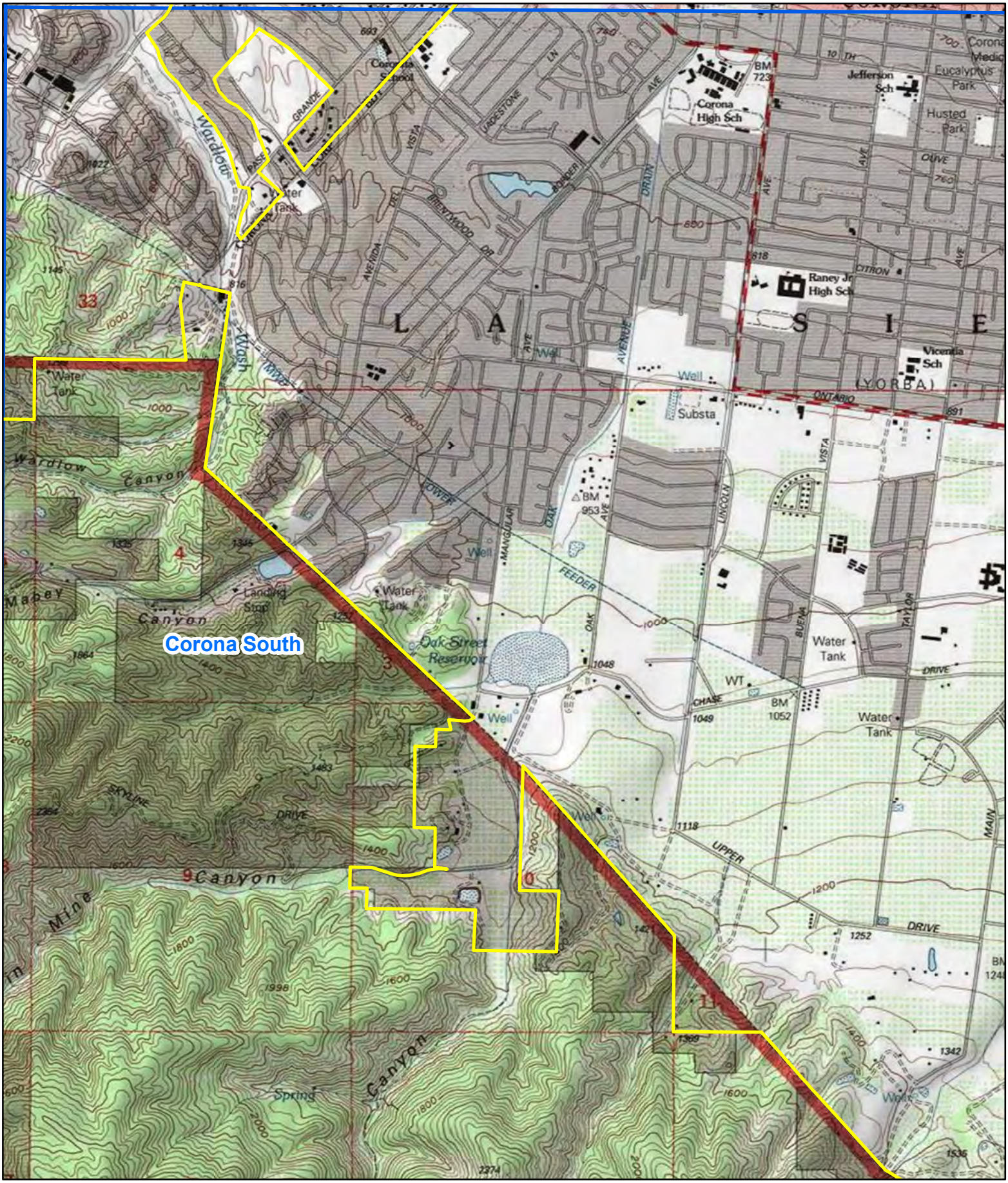


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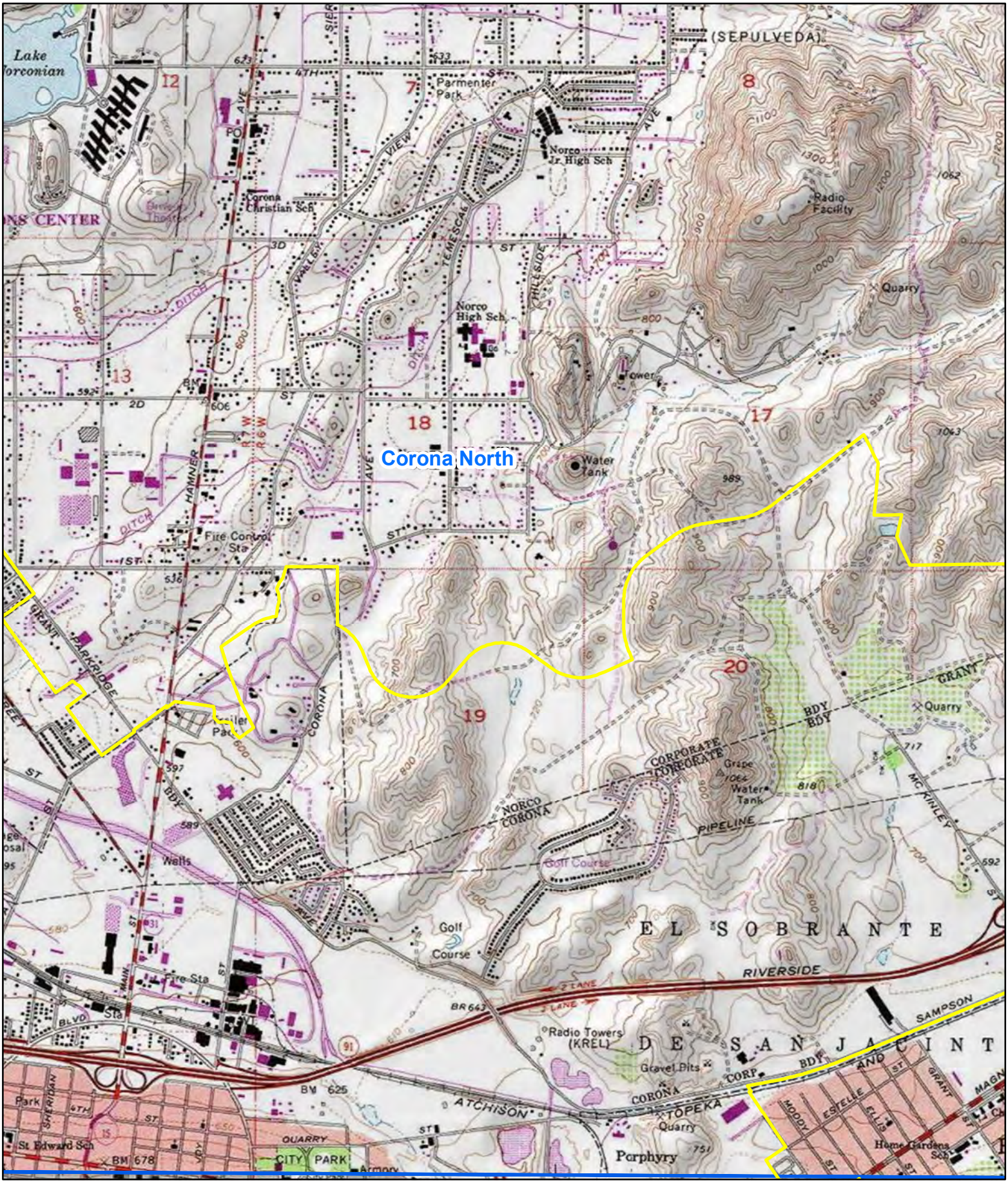
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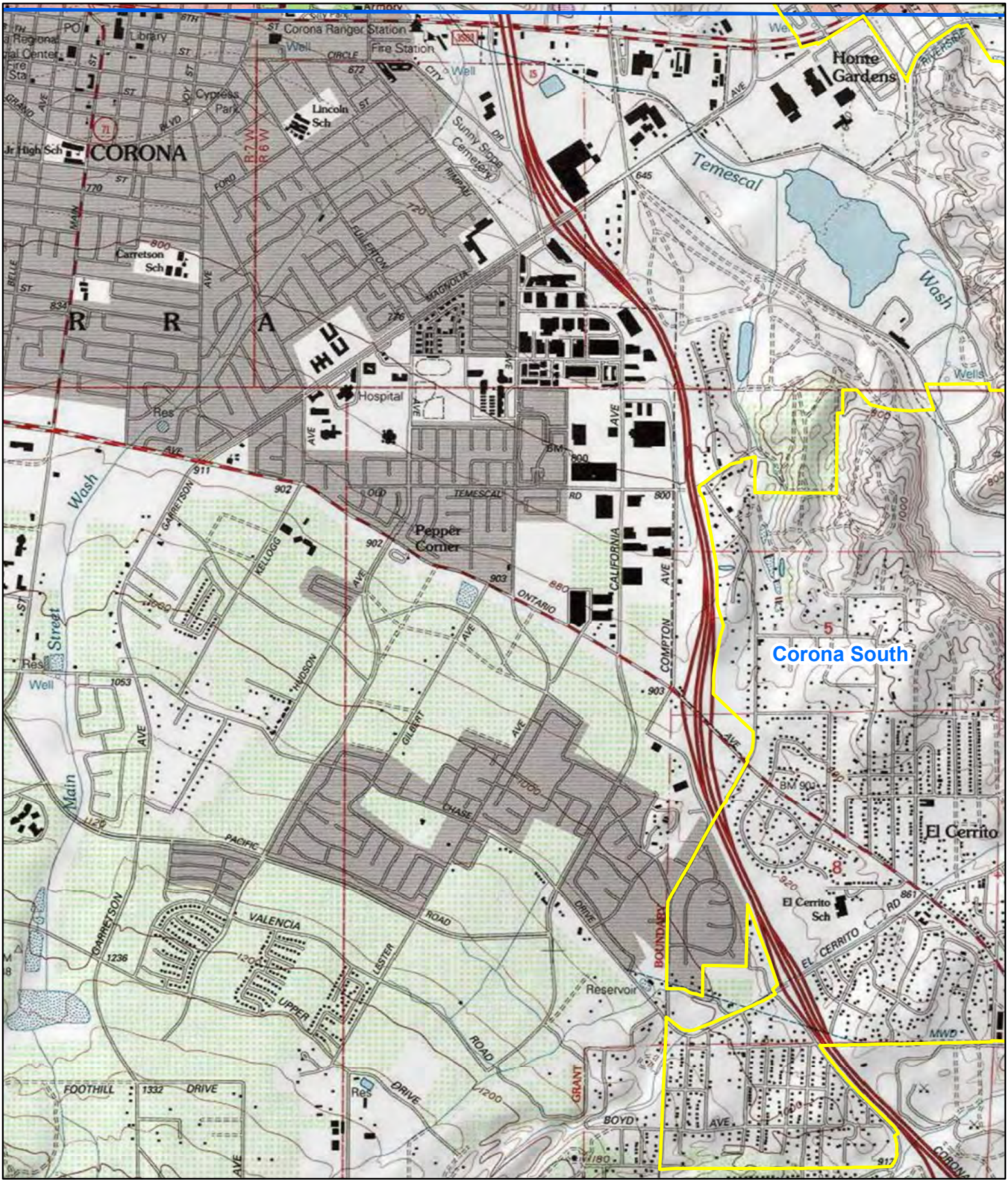


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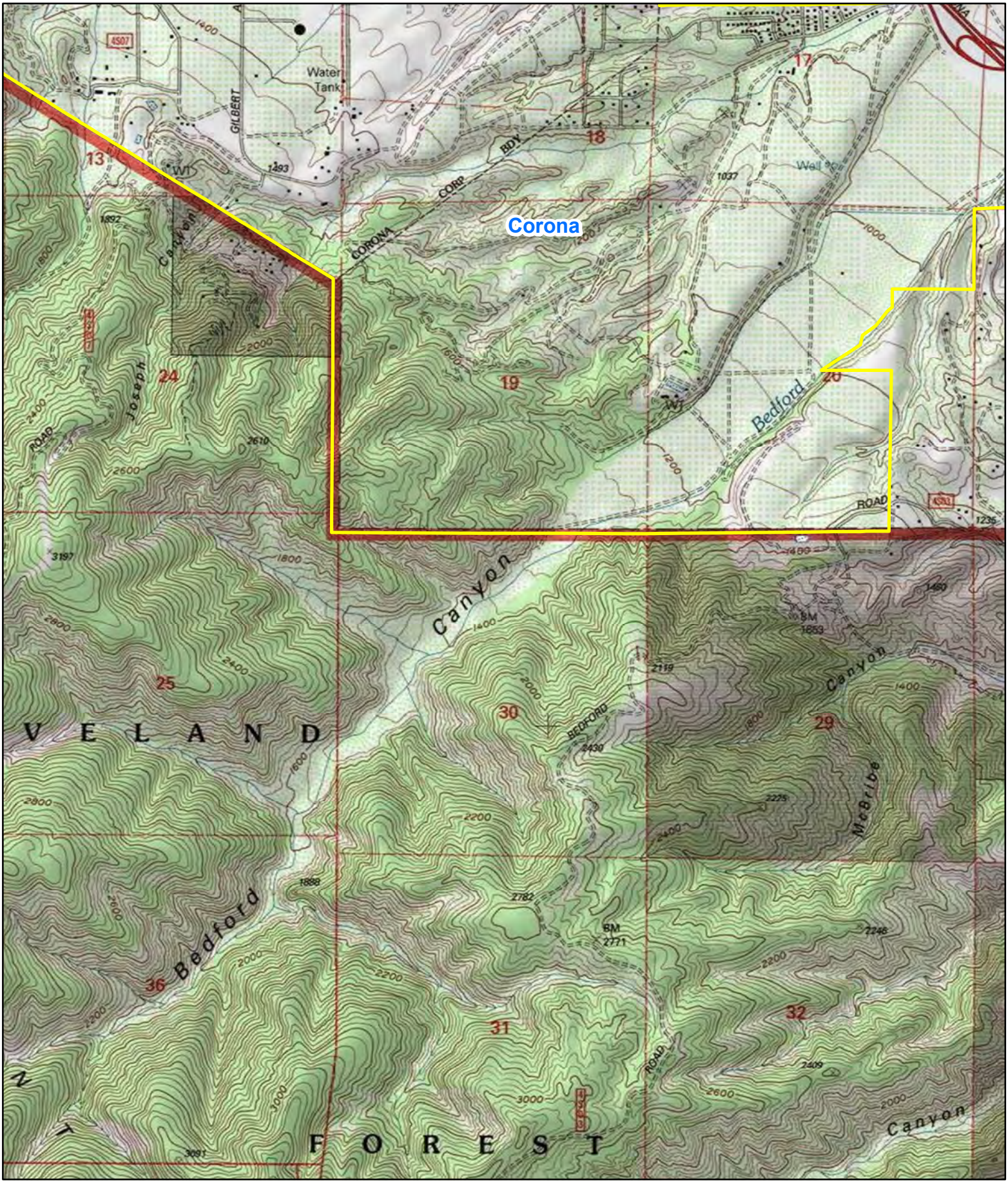
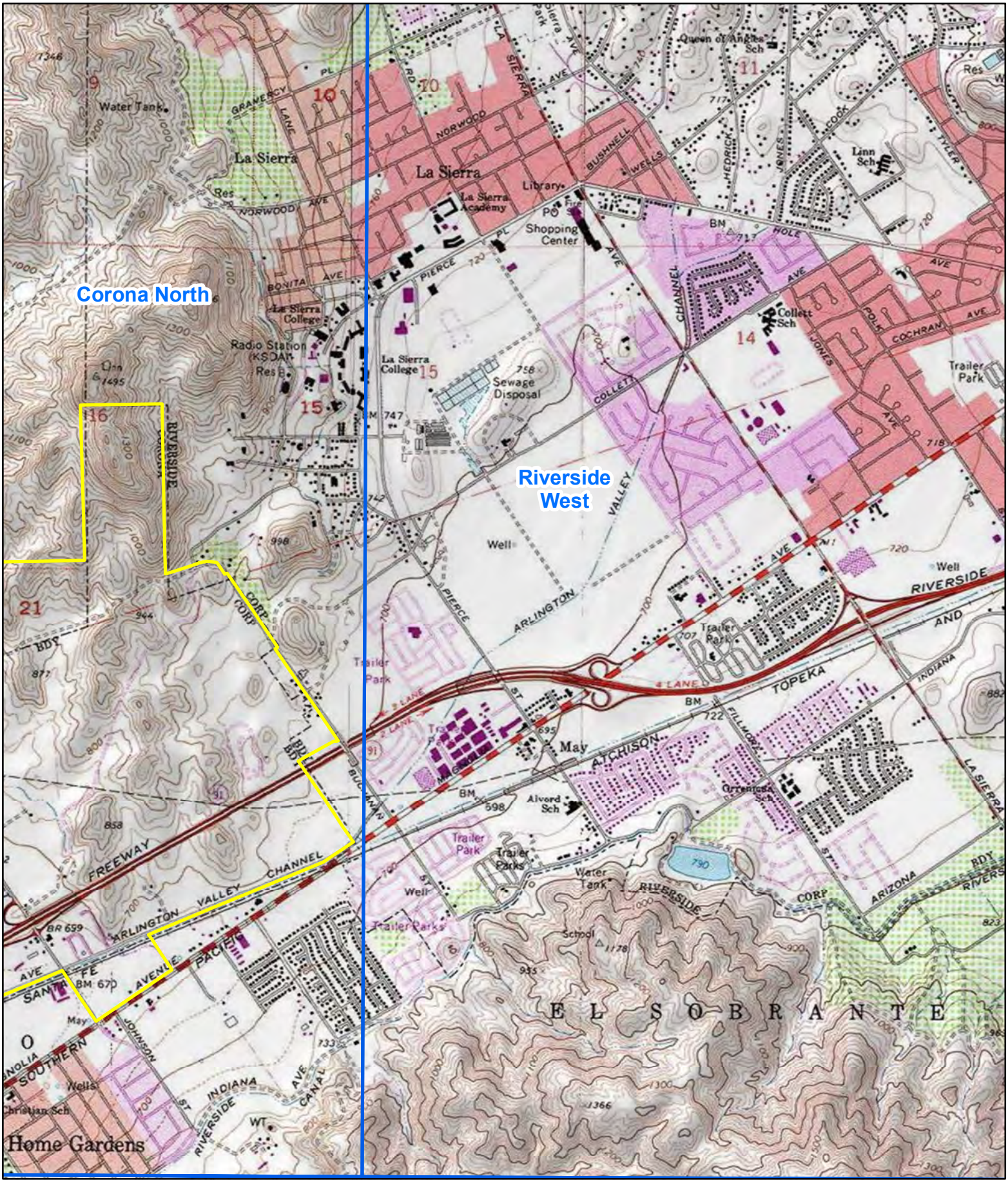


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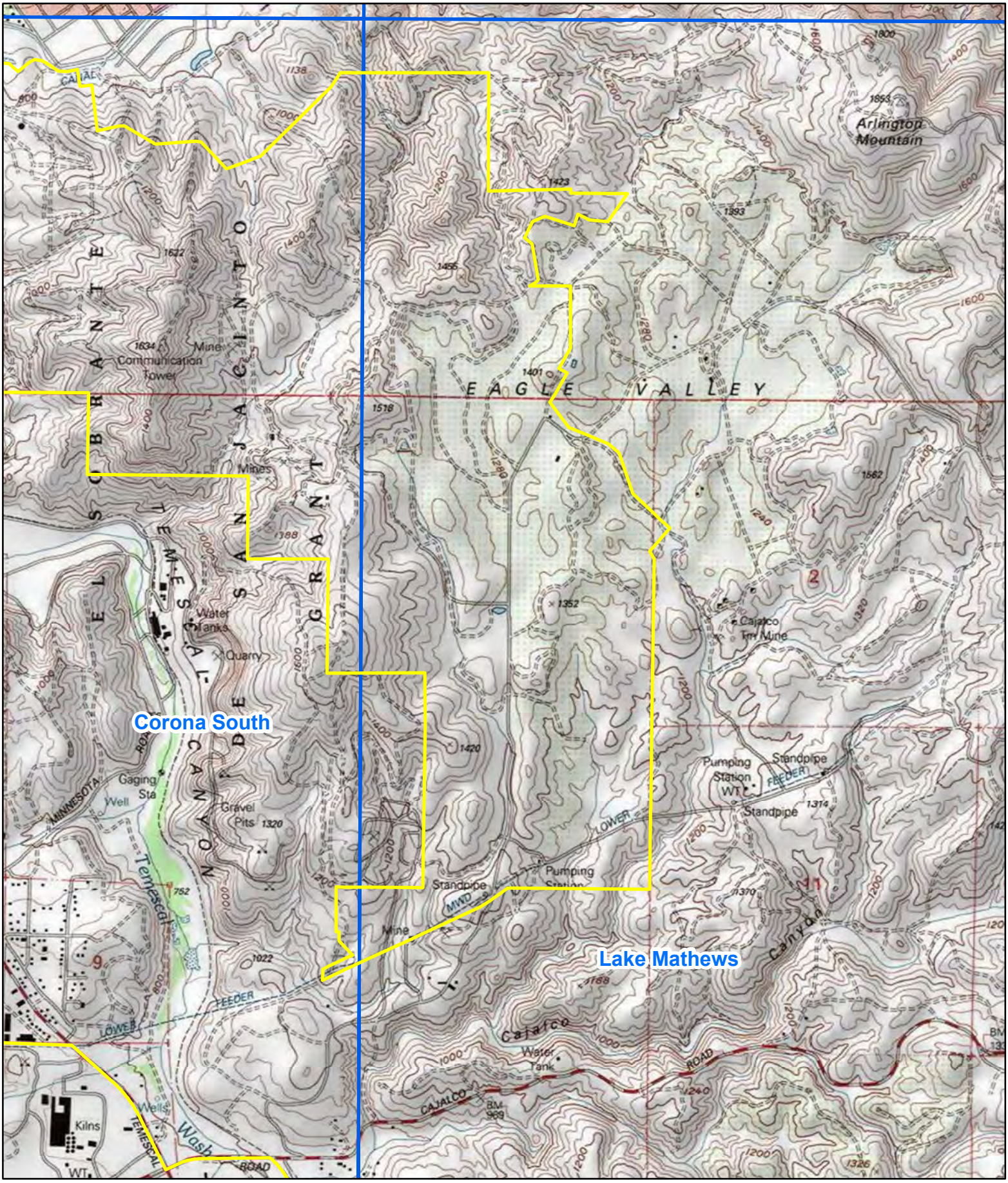
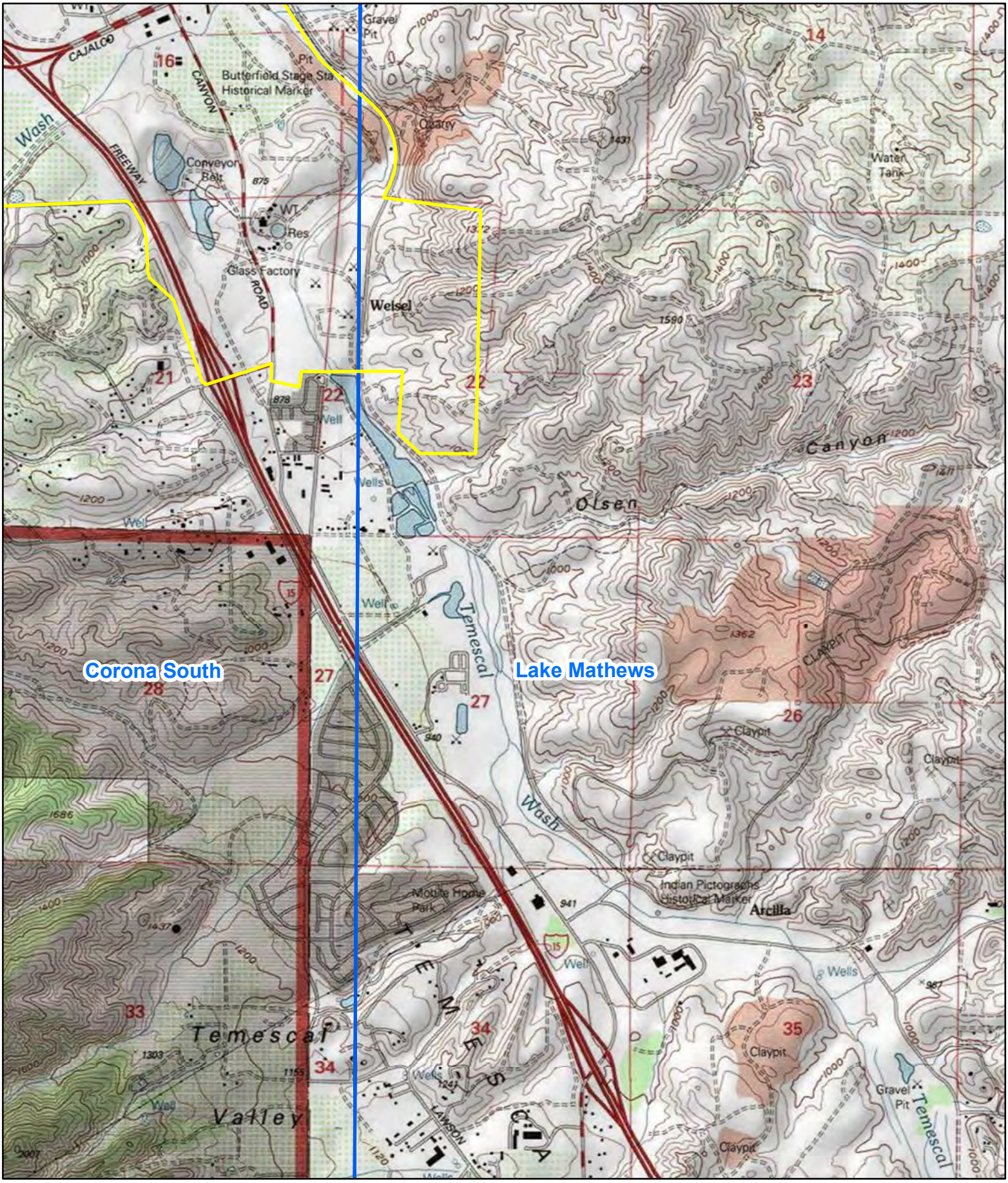


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RED TAIL ENVIRONMENTAL

RED TAIL ENVIRONMENTAL

April 6, 2020

Javaughn Miller
Tribal Administrator
La Posta Band of Diegueno Mission Indians
8 Crestwood Road, Boulevard, CA, 91905
619-478-2113
jmiller@Lptribe.net

Re: City of Corona Reclaimed Water Project, Riverside County, California

Dear Mr. Miller,

Red Tail Environmental (Red Tail) is conducting an archaeological study for the City of Corona Reclaimed Water Project (project), located within the City of Corona, Riverside County, California. The project area includes the entire City of Corona and the city's sphere of influence. The project is subject to the California Environmental Quality Act (CEQA) and will assess the environmental impact of the City of Corona's Reclaimed Water Master Plan. The City of Corona is the lead agency. The project area is shown on the following USGS 7.5' Quad Maps:

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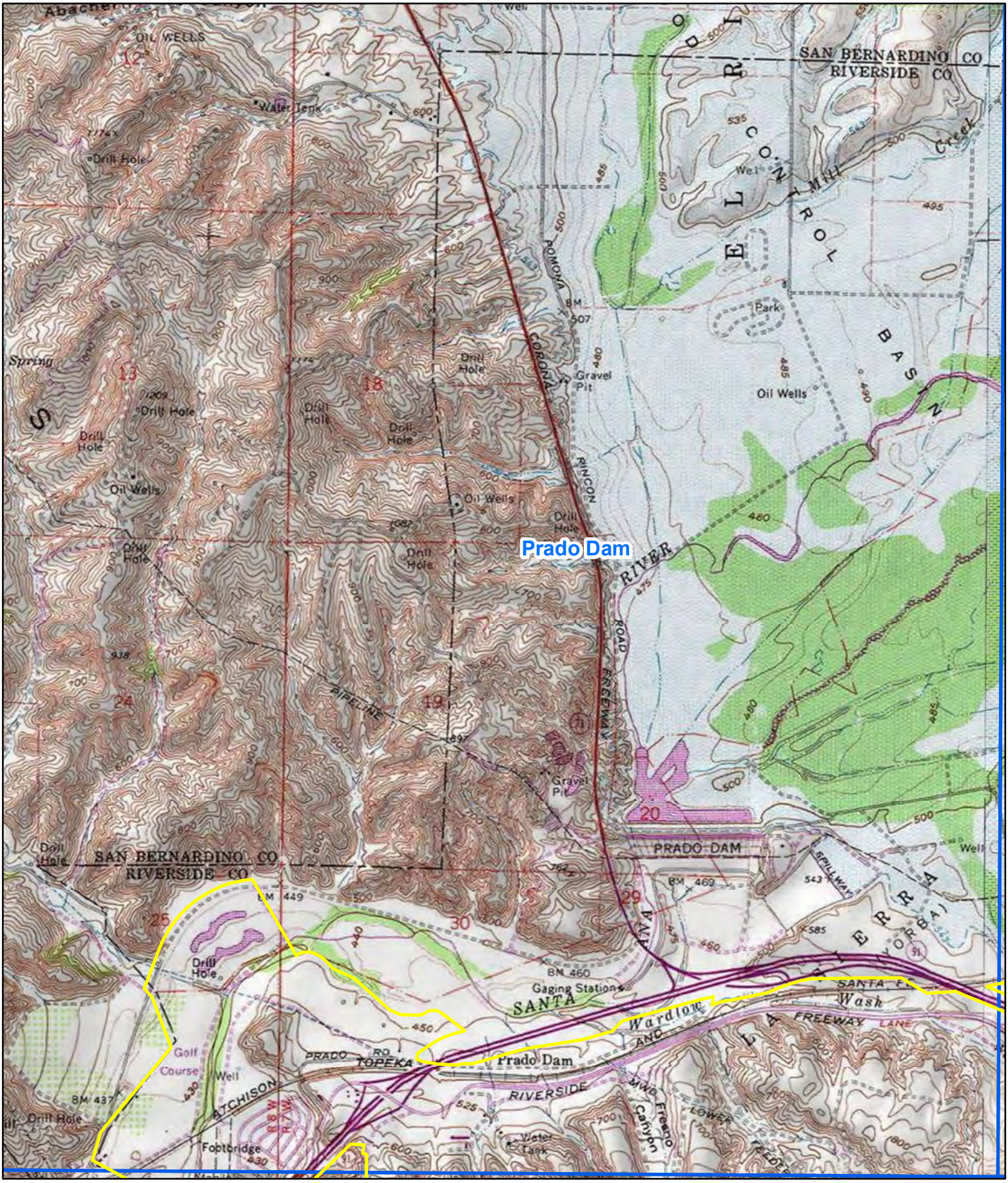


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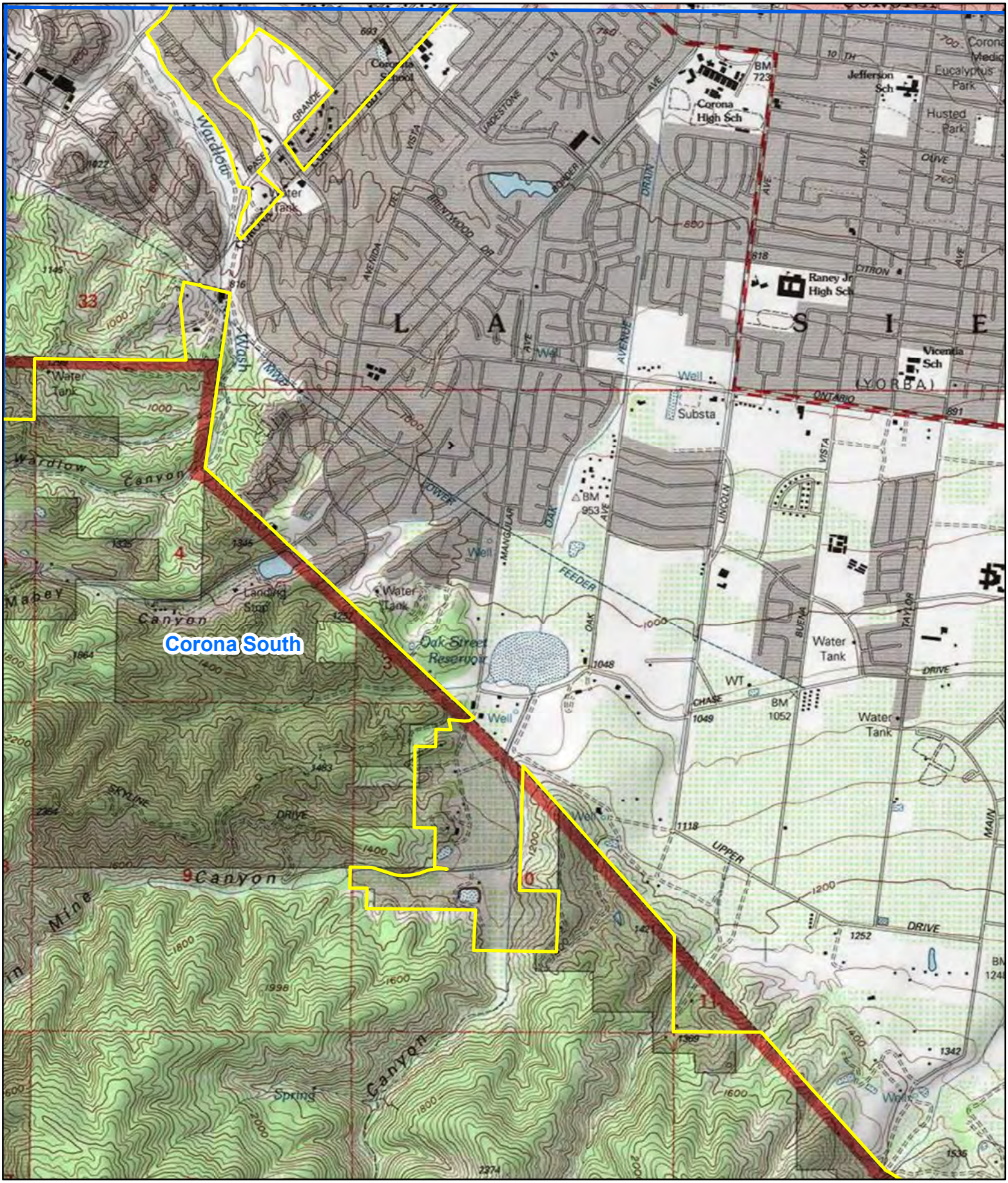


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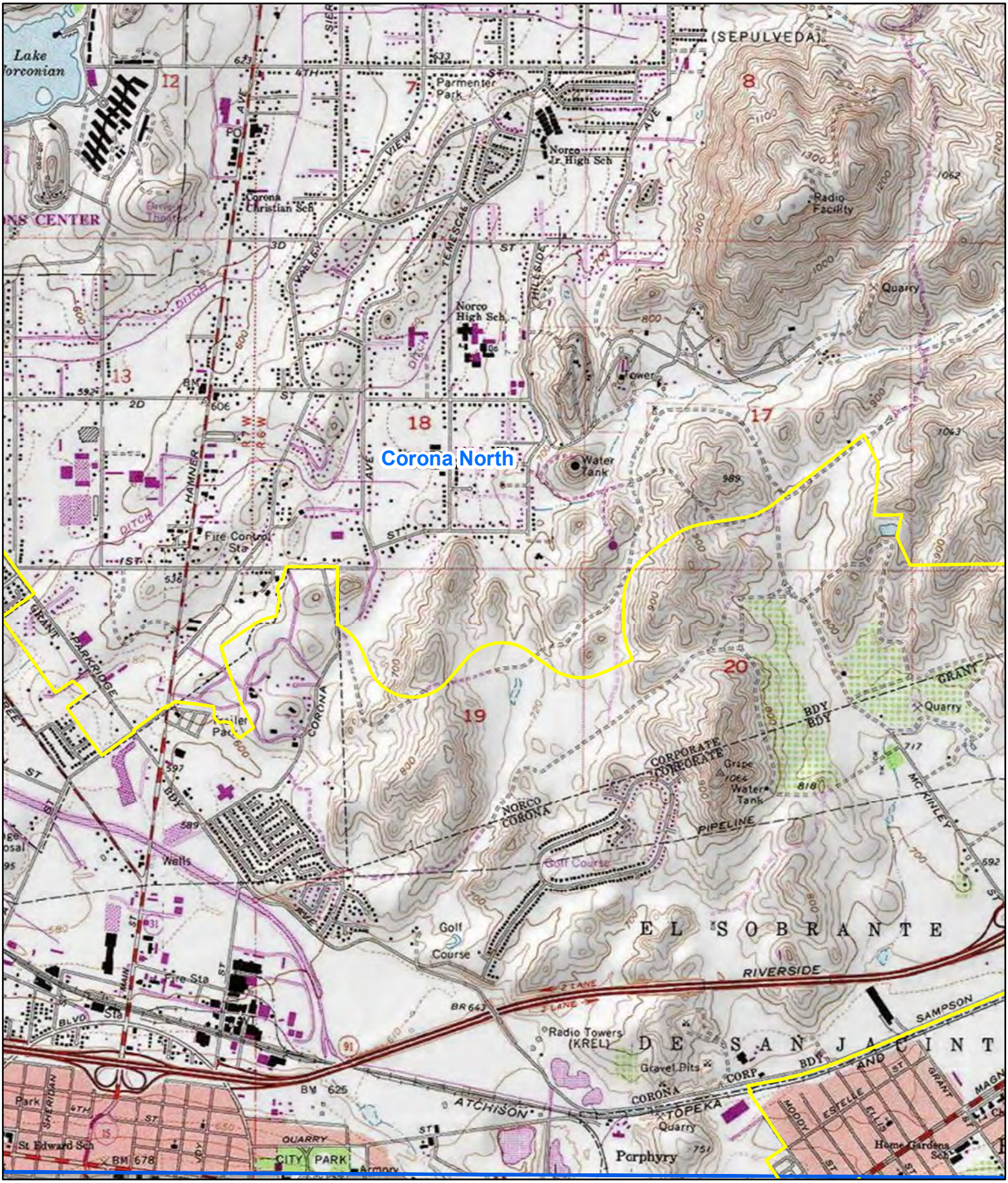
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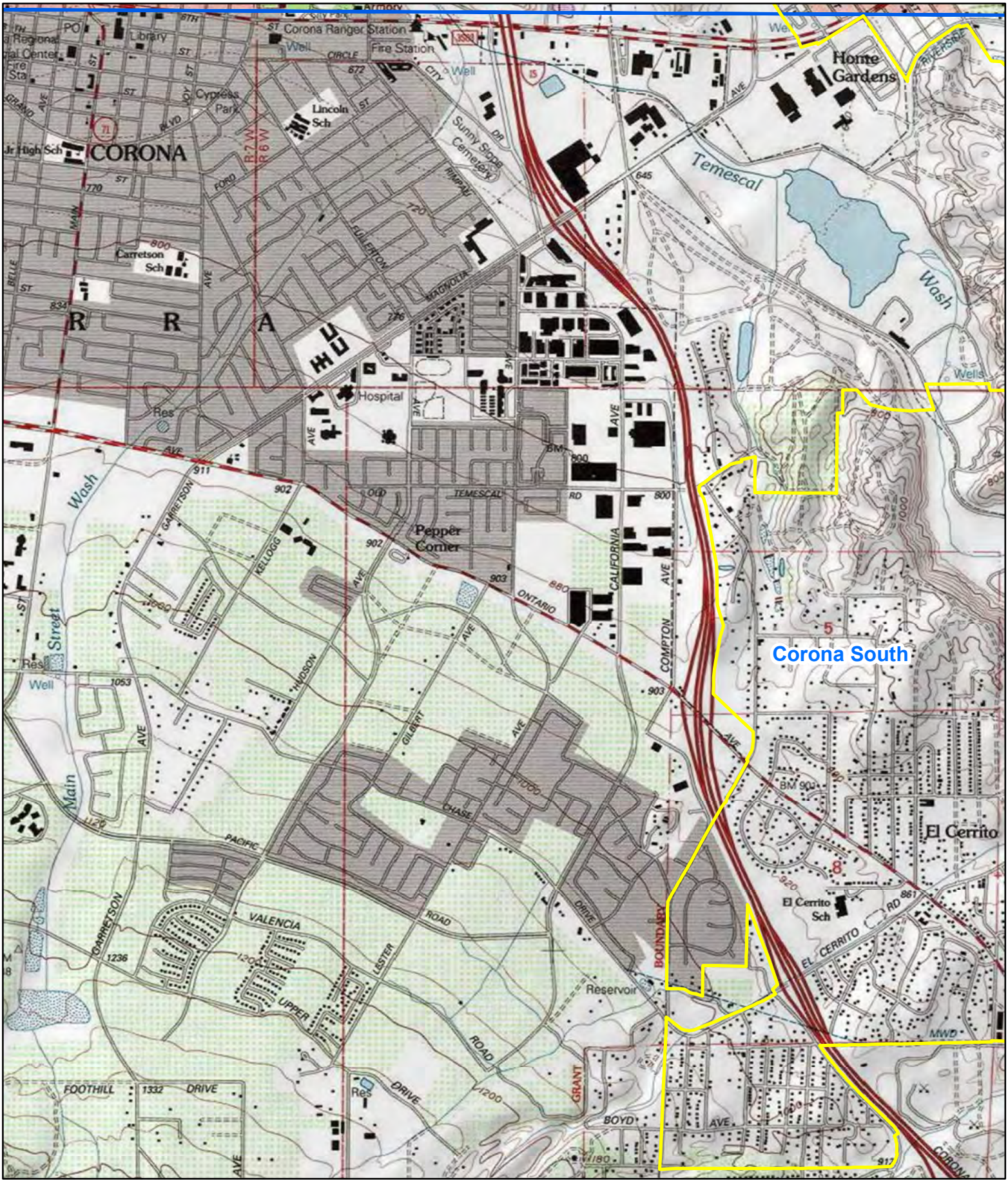


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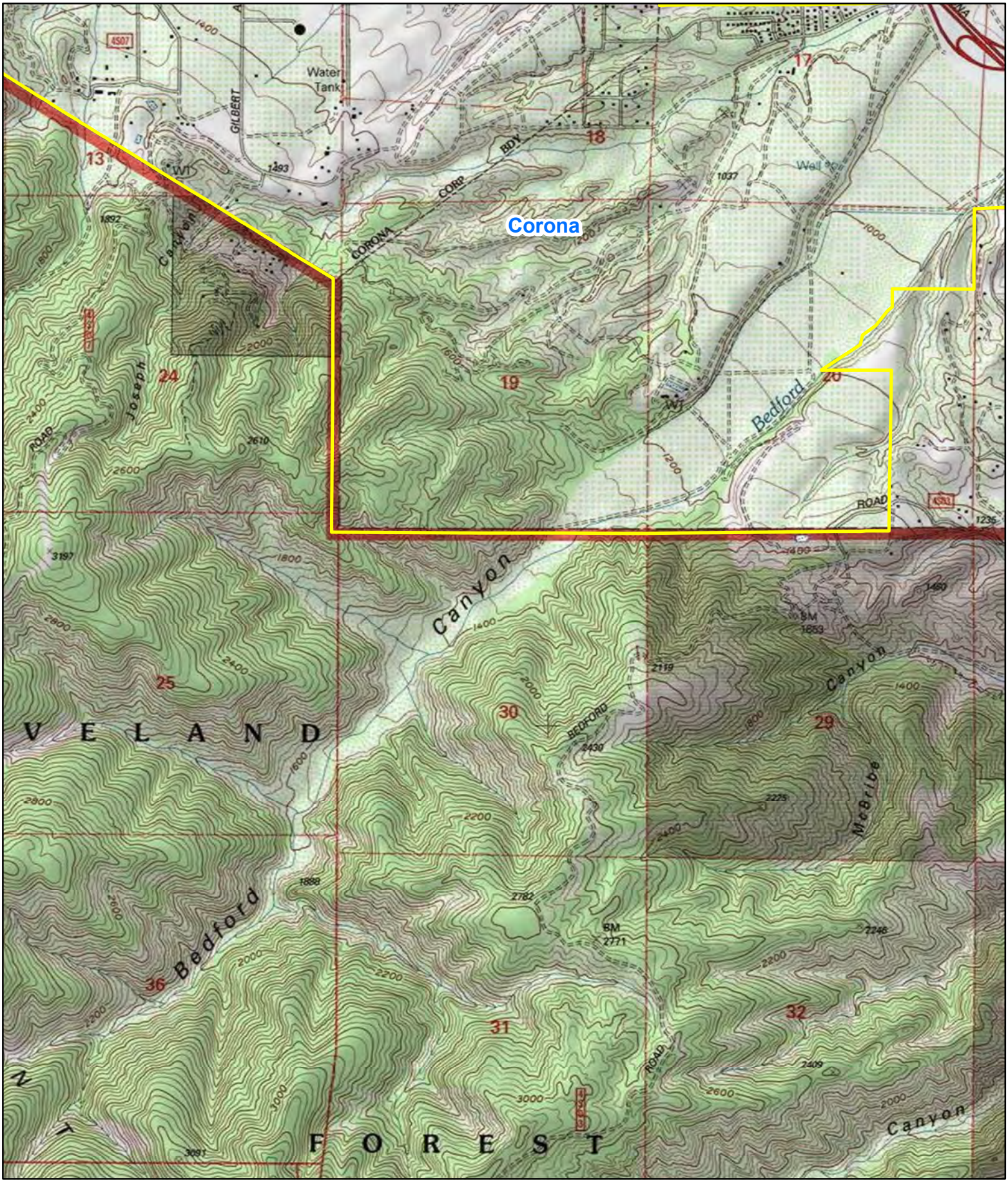


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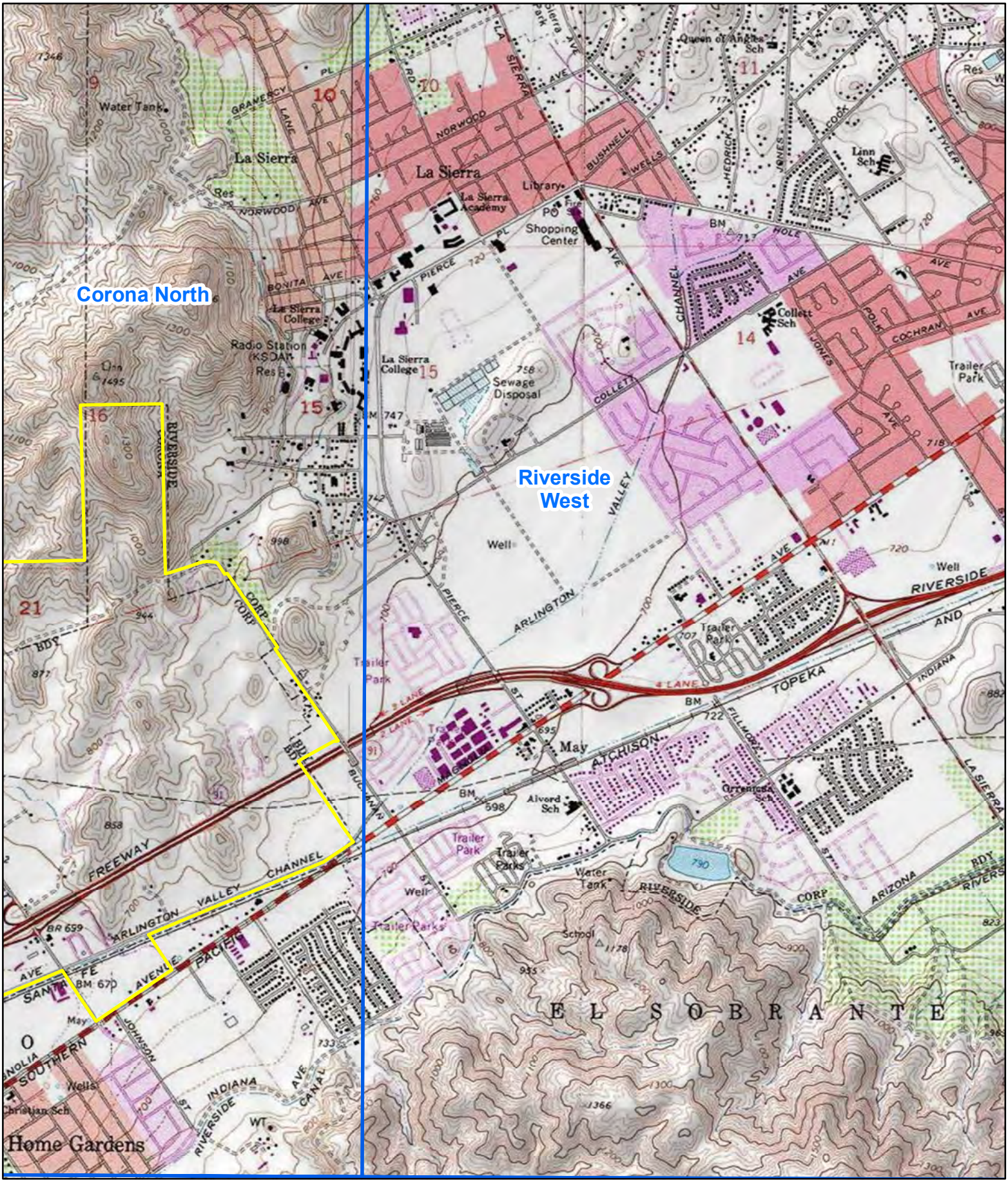


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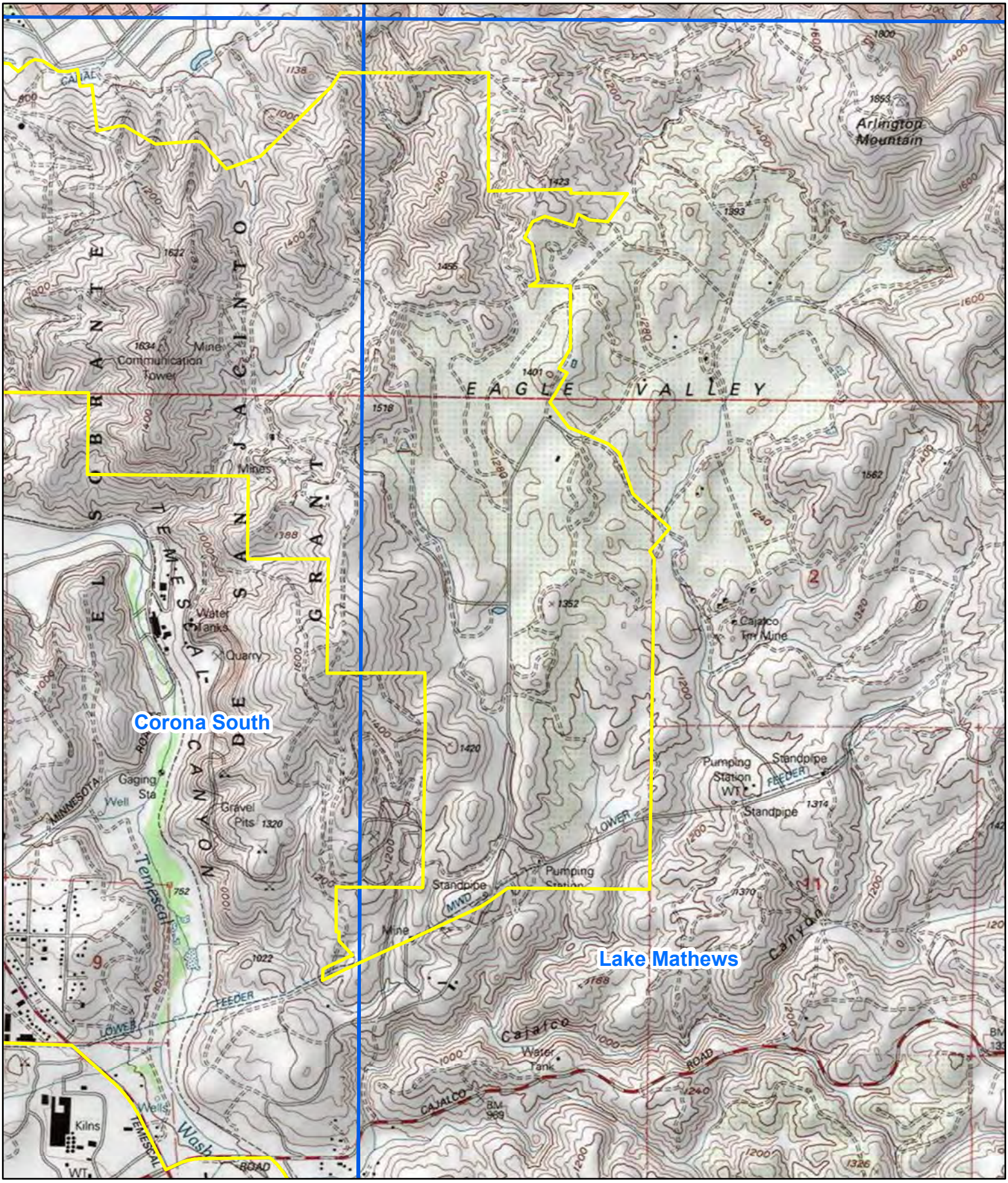
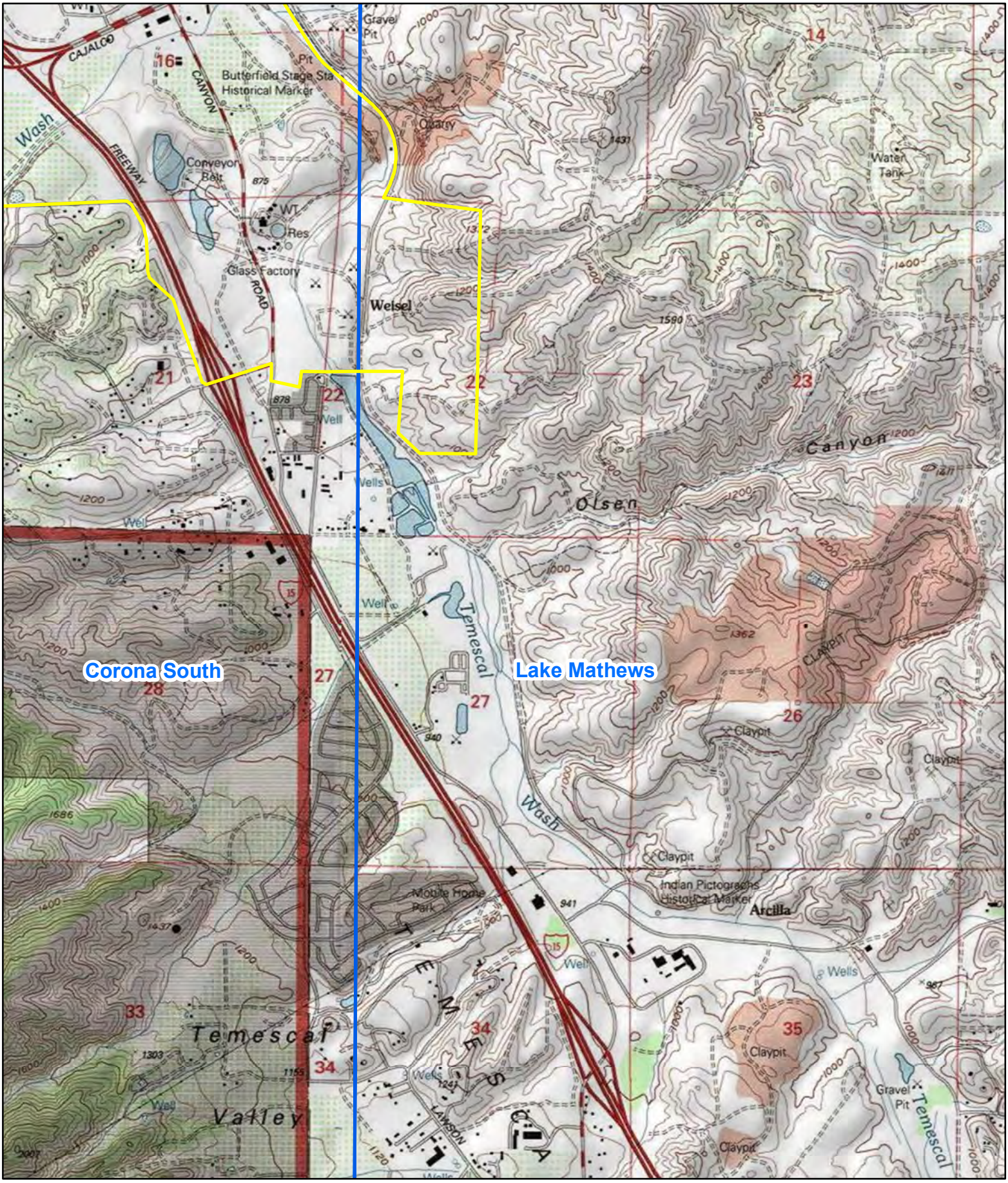


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RED TAIL ENVIRONMENTAL

RED TAIL ENVIRONMENTAL

April 6, 2020

Lisa Cumper
Preservation Officer
Jamul Indian Village
PO Box 612, Jamul, CA, 91935
619-669-4855
lcumper@jiv-nsn.gov

Re: City of Corona Reclaimed Water Project, Riverside County, California

Dear Ms. Cumper,

Red Tail Environmental (Red Tail) is conducting an archaeological study for the City of Corona Reclaimed Water Project (project), located within the City of Corona, Riverside County, California. The project area includes the entire City of Corona and the city's sphere of influence. The project is subject to the California Environmental Quality Act (CEQA) and will assess the environmental impact of the City of Corona's Reclaimed Water Master Plan. The City of Corona is the lead agency. The project area is shown on the following USGS 7.5' Quad Maps:

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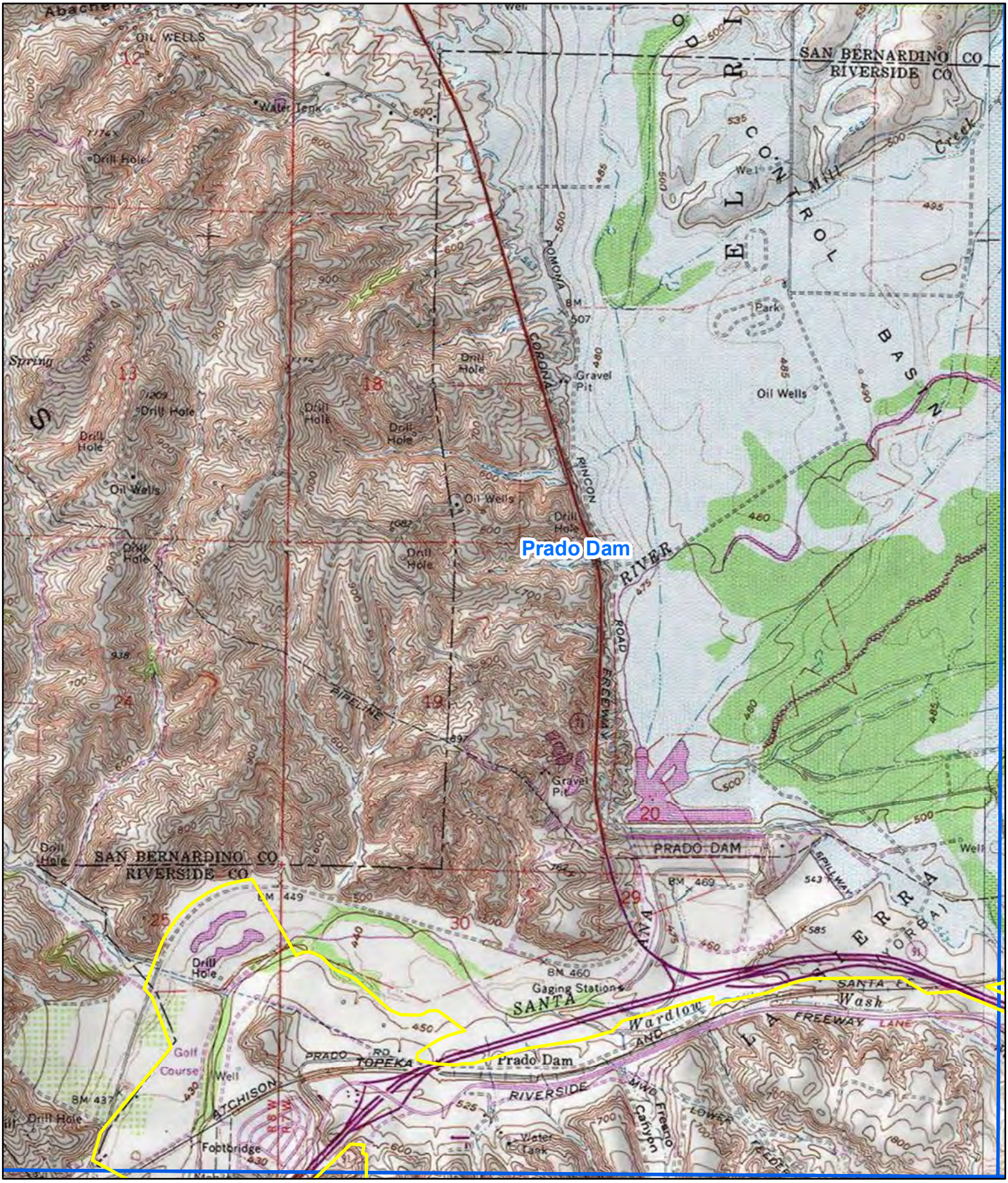


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RED TAIL ENVIRONMENTAL



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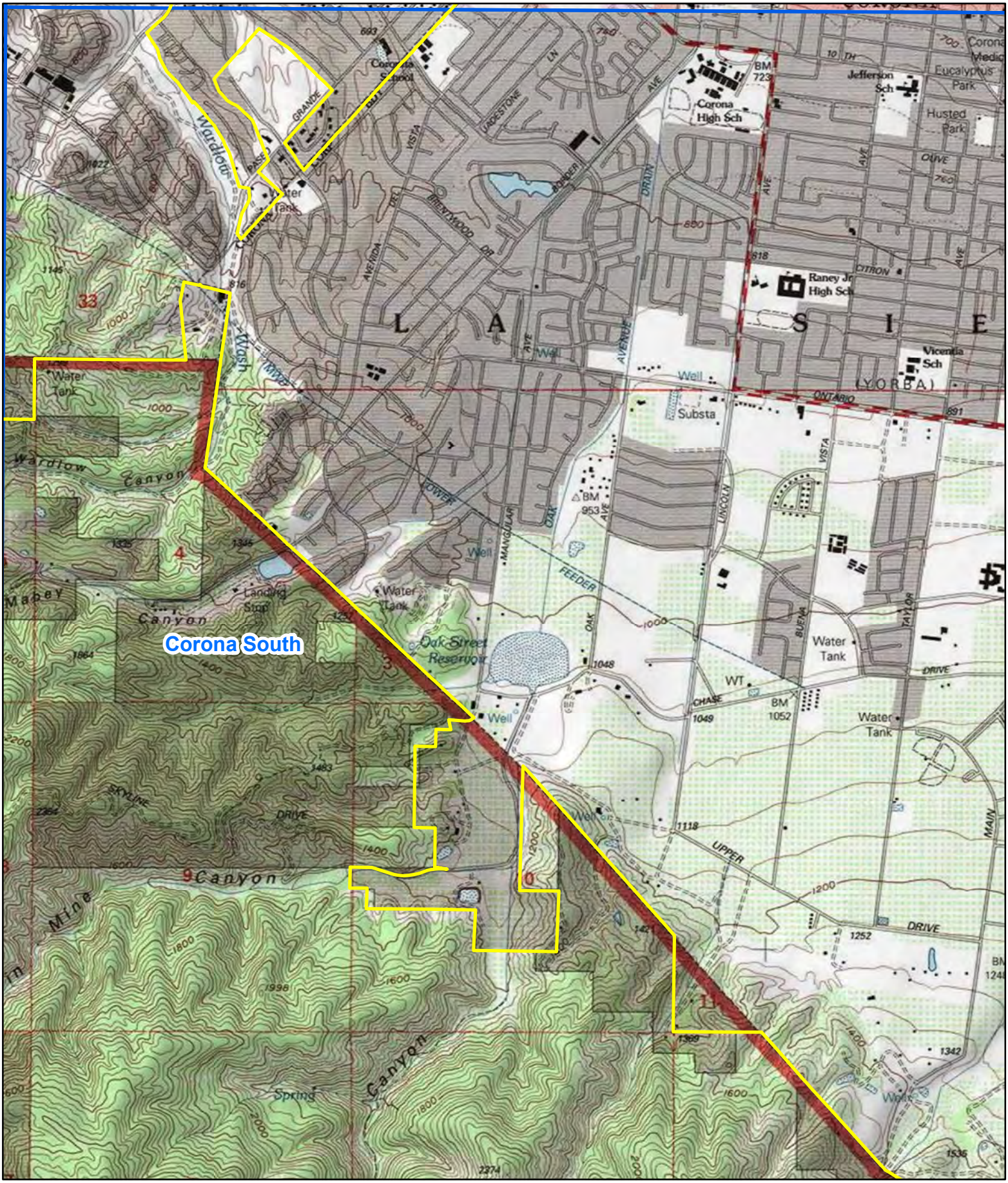


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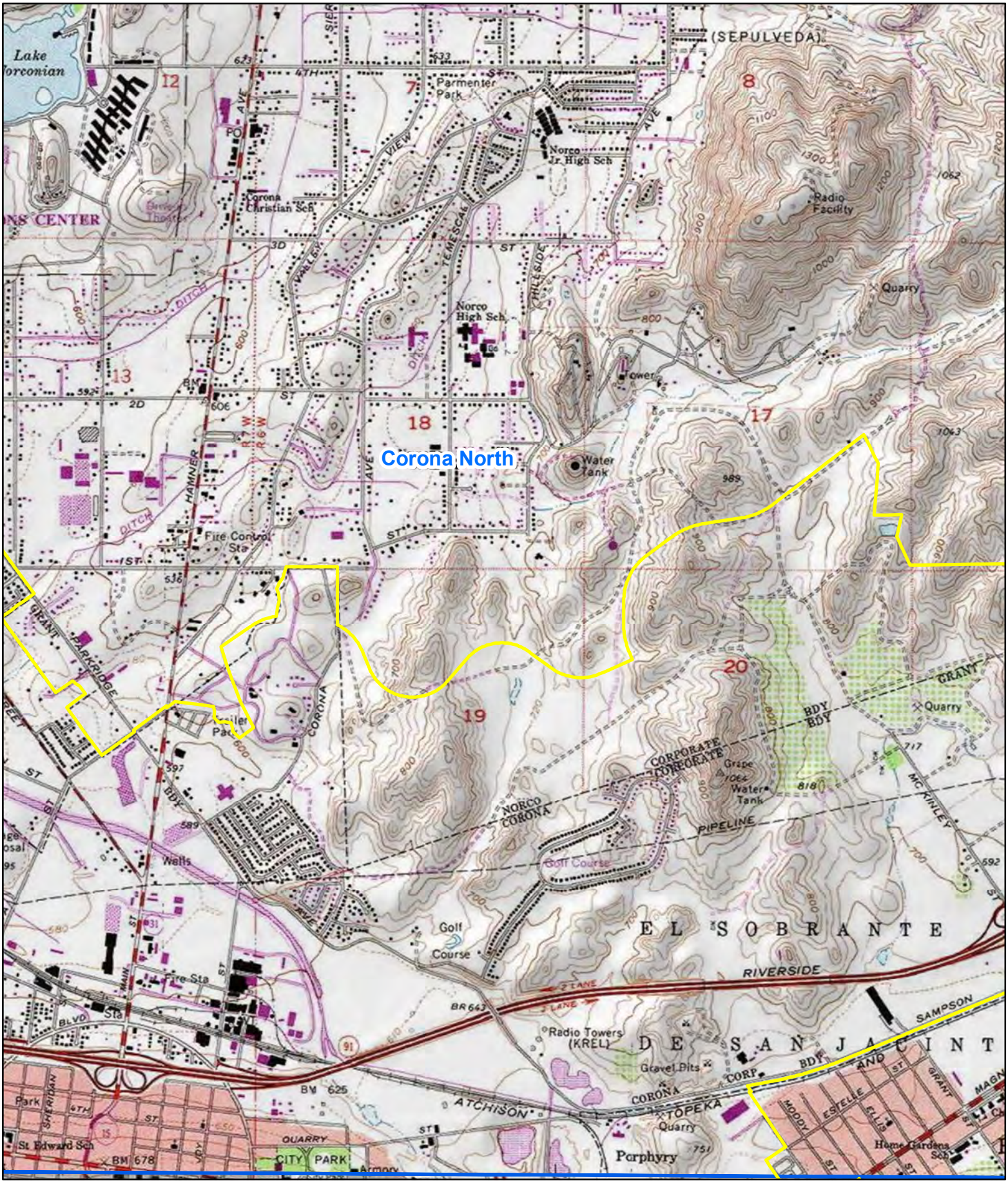
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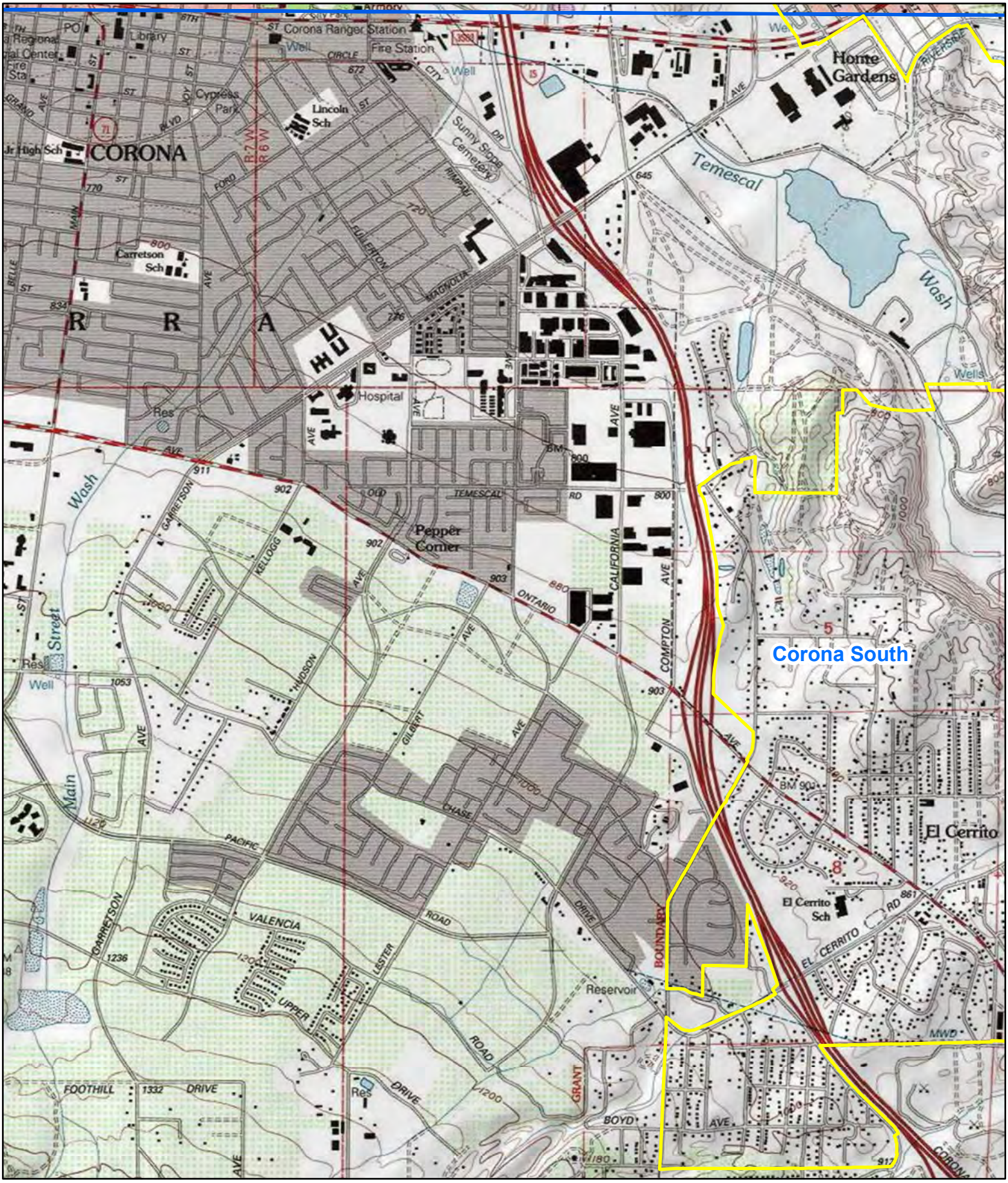


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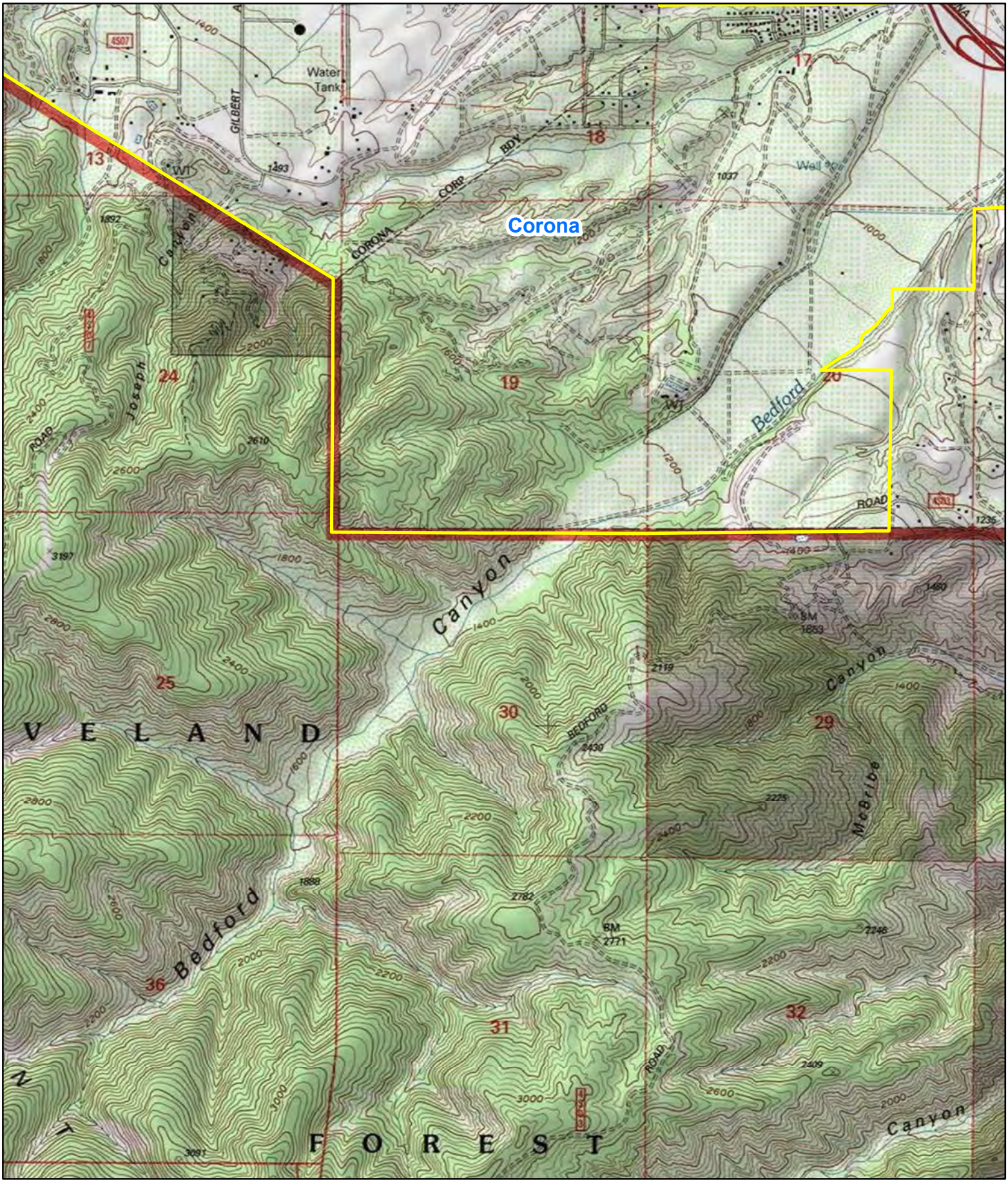


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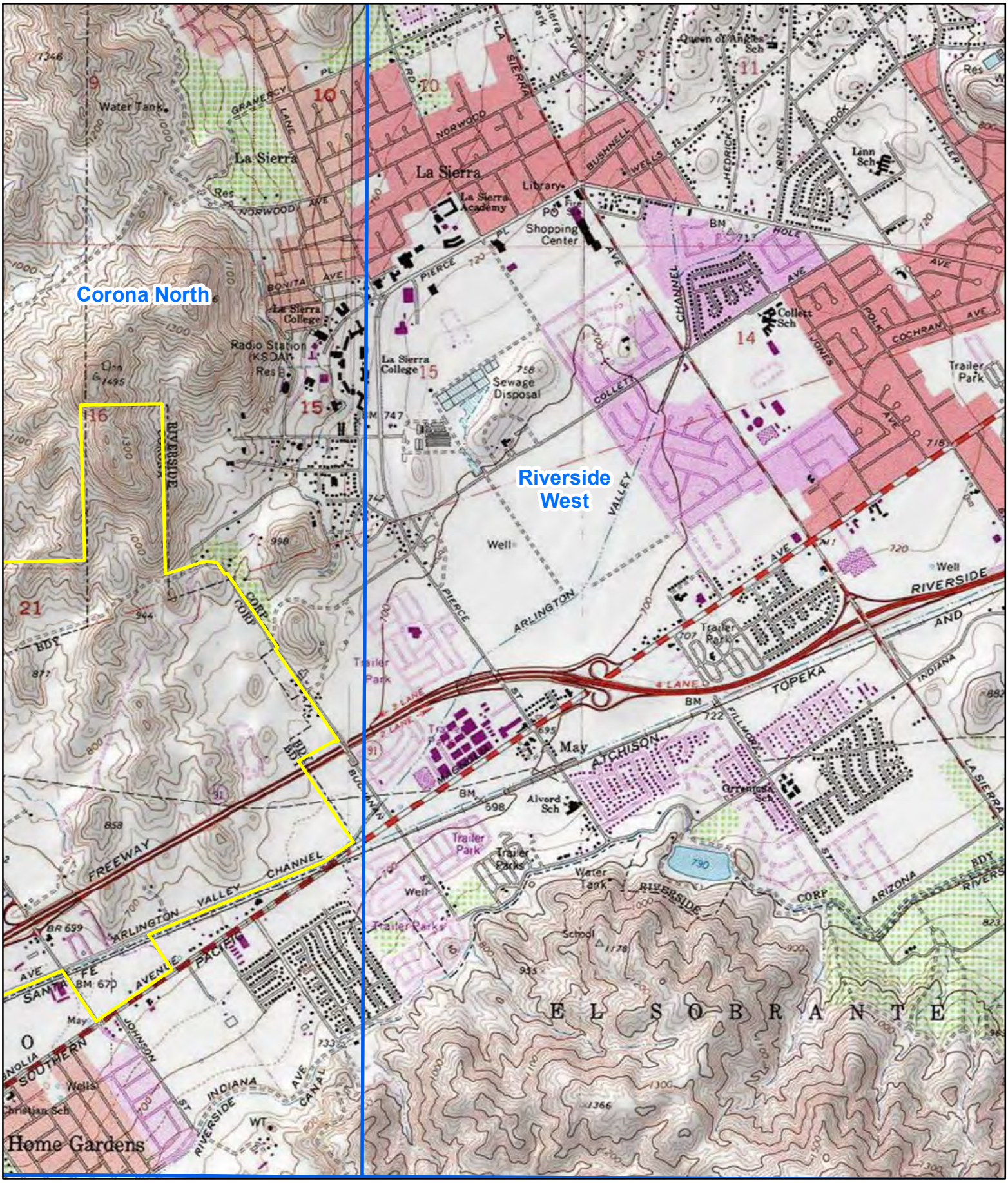


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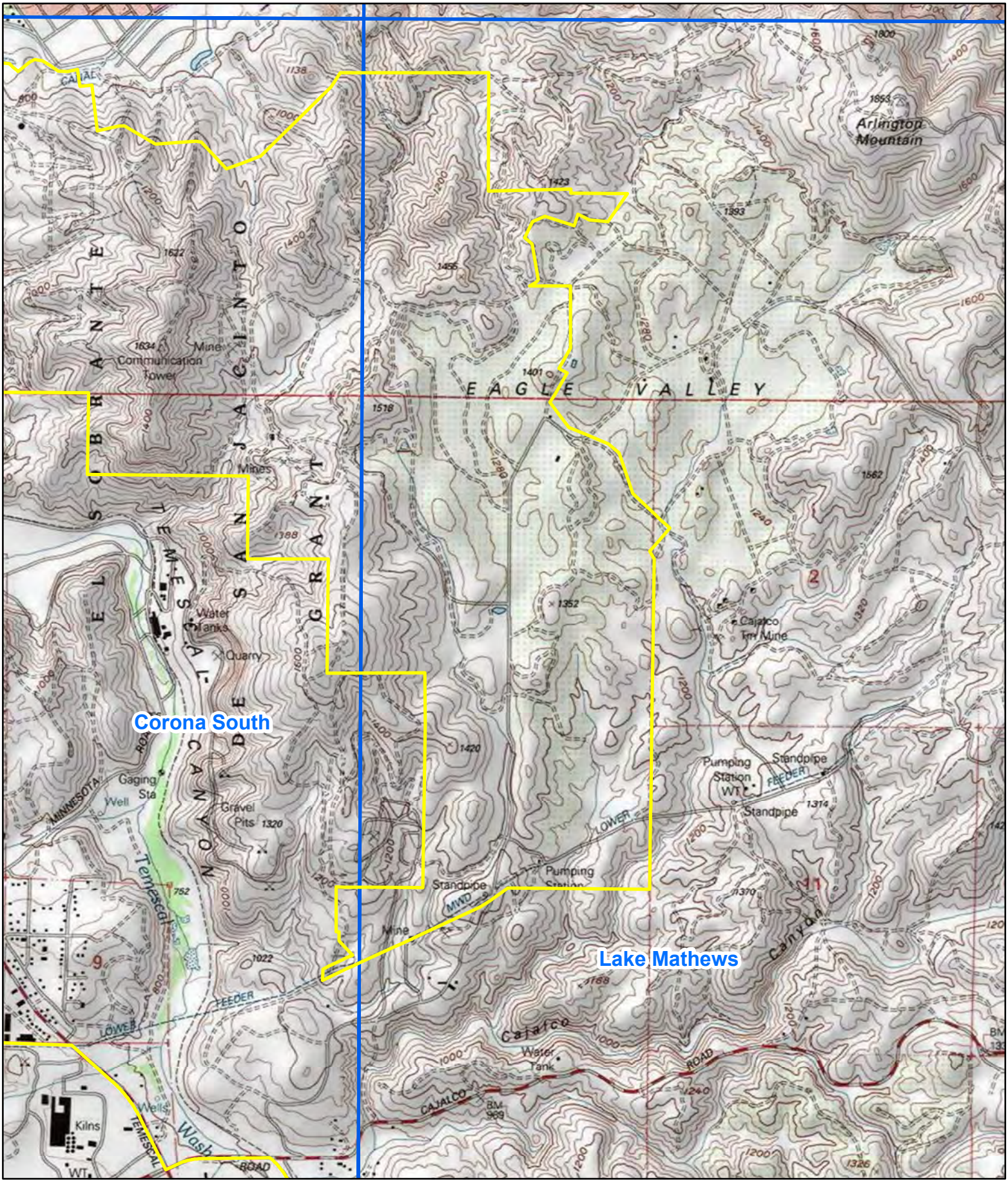
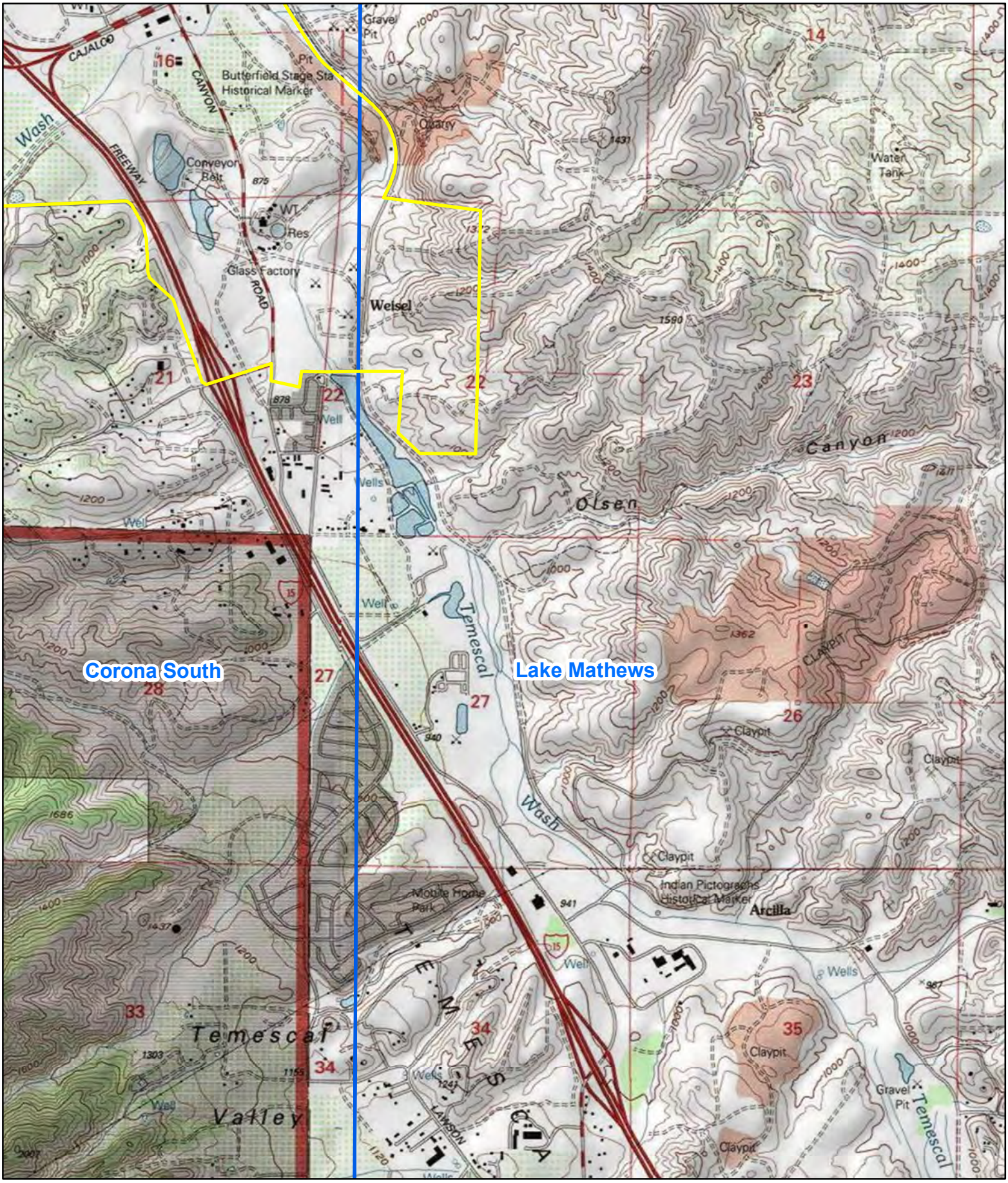


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RED TAIL ENVIRONMENTAL

RED TAIL ENVIRONMENTAL

April 6, 2020

Matias Belardes
Chairperson
Juaneno Band of Mission Indians Acjachemen Nation - Belardes
32161 Avenida Los Amigos, San Juan Capistrano, CA, 92675
949-293-8522
kaamalam@gmail.com

Re: City of Corona Reclaimed Water Project, Riverside County, California

Dear Mr. Belardes,

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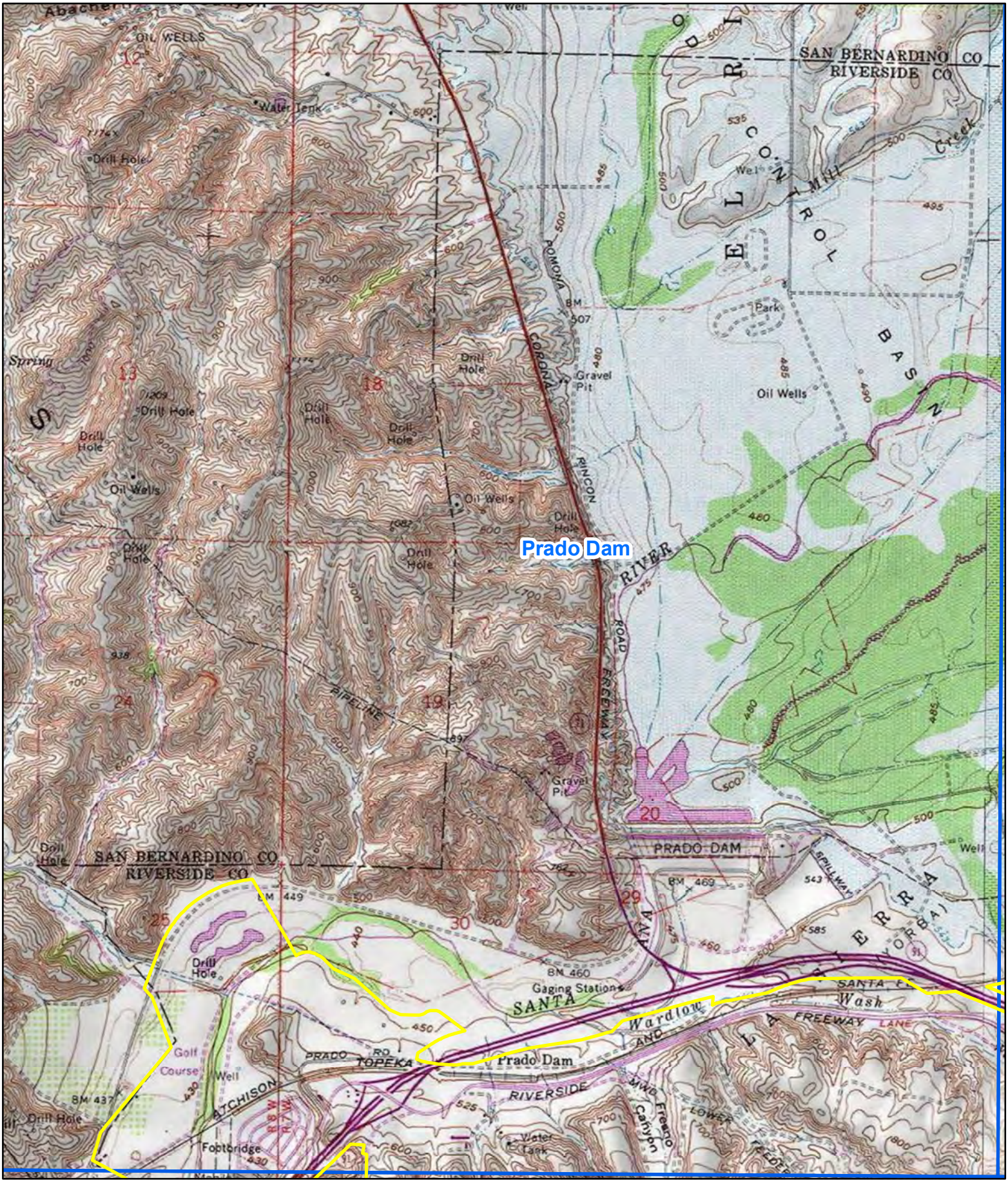


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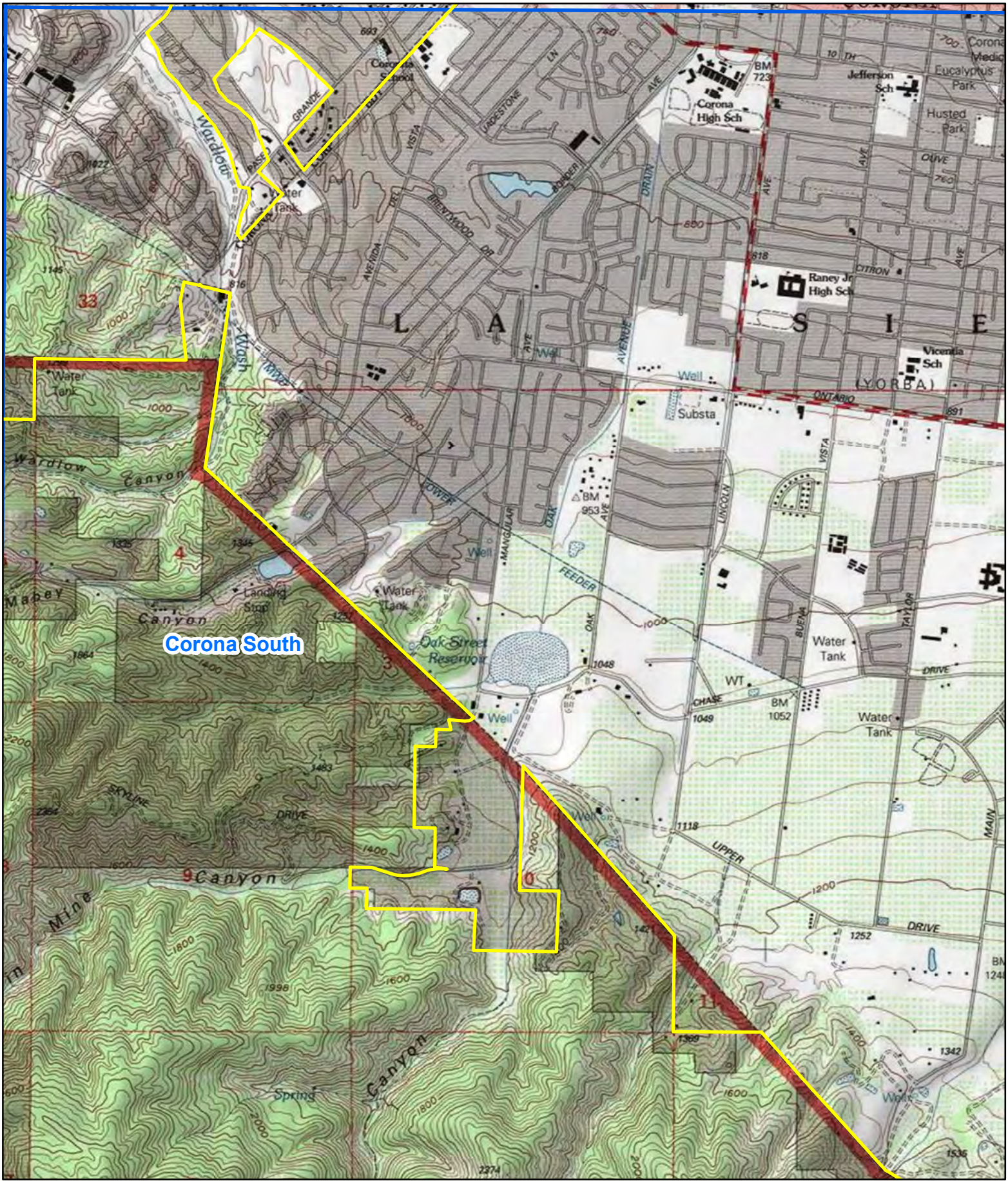


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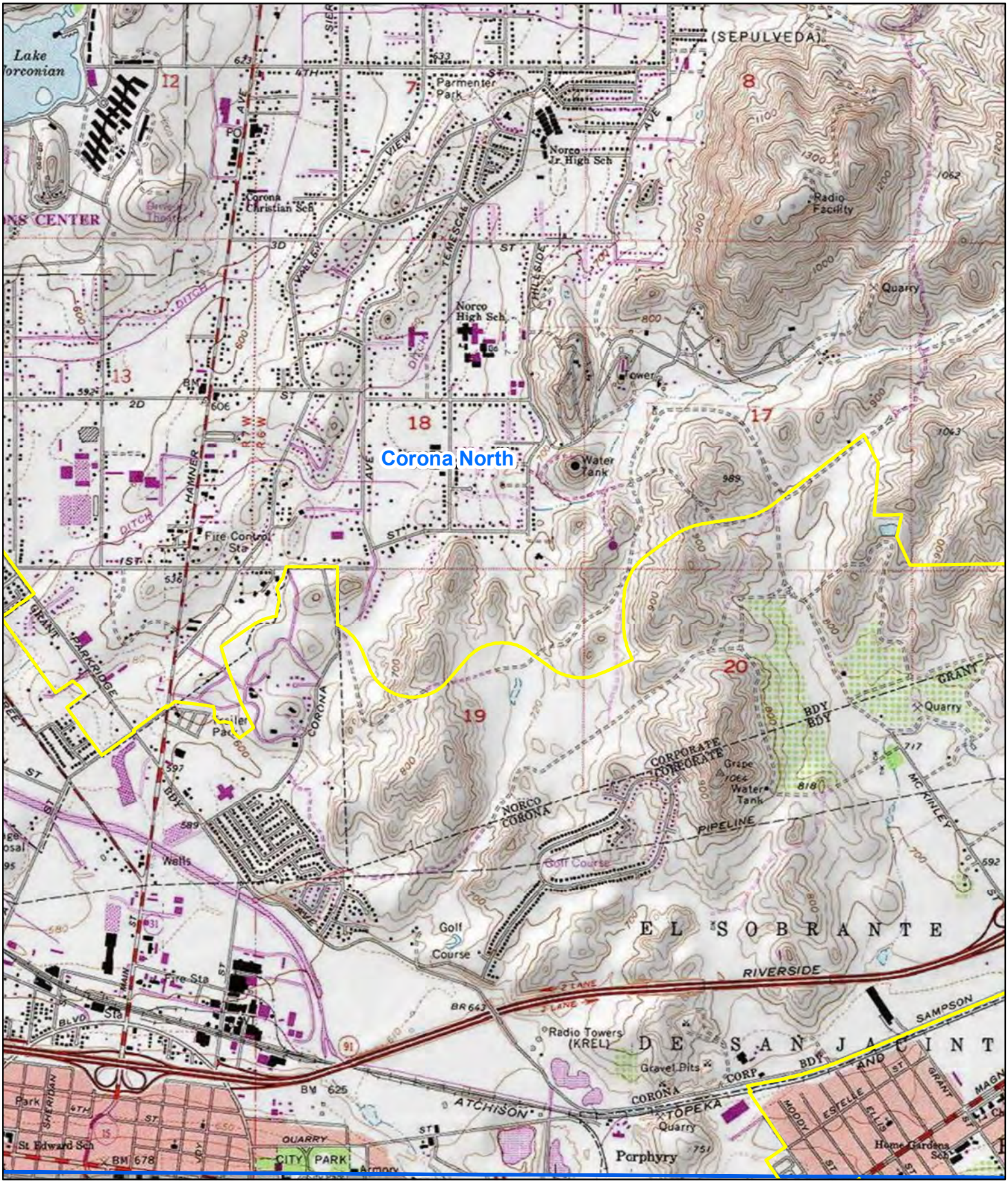
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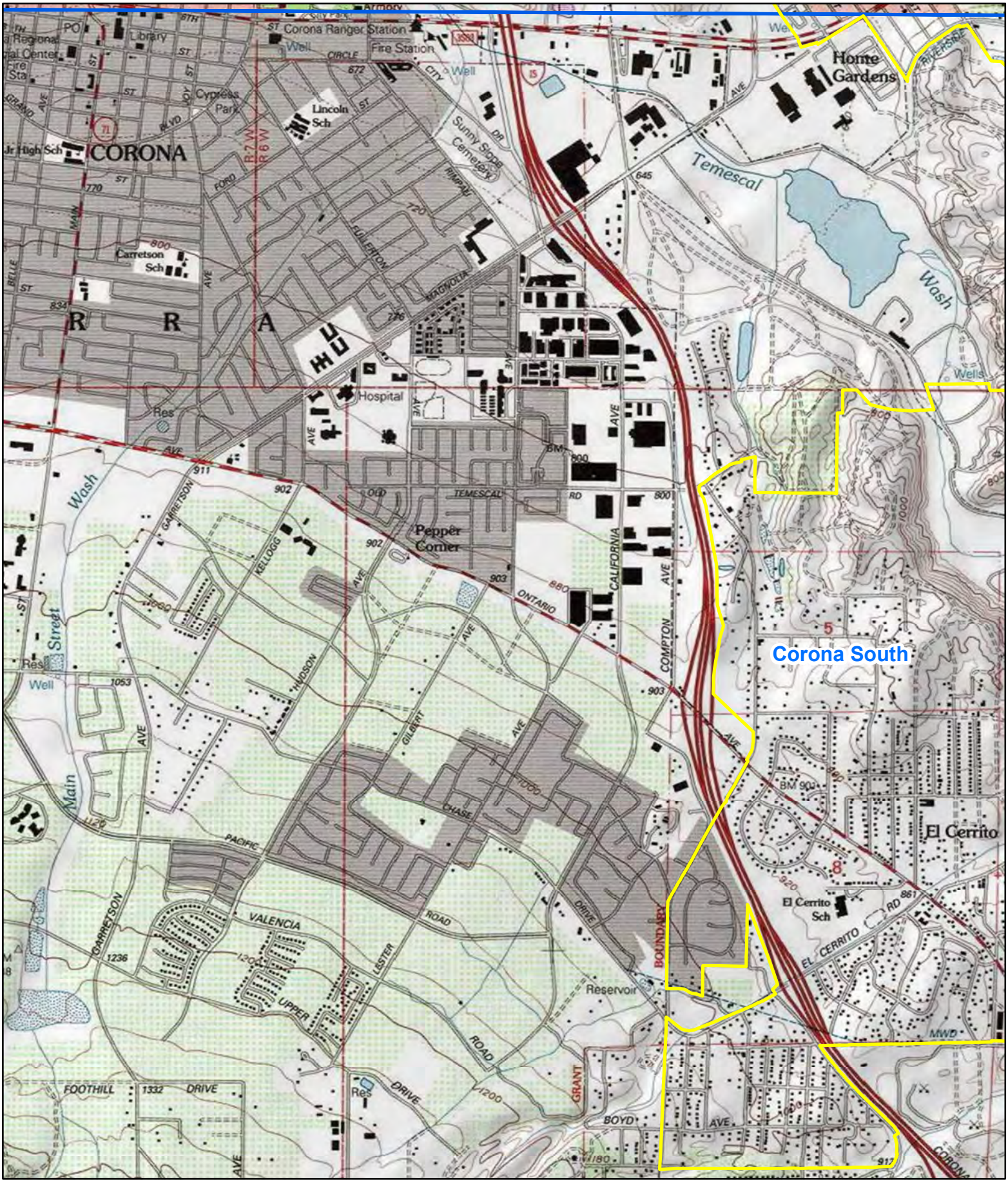


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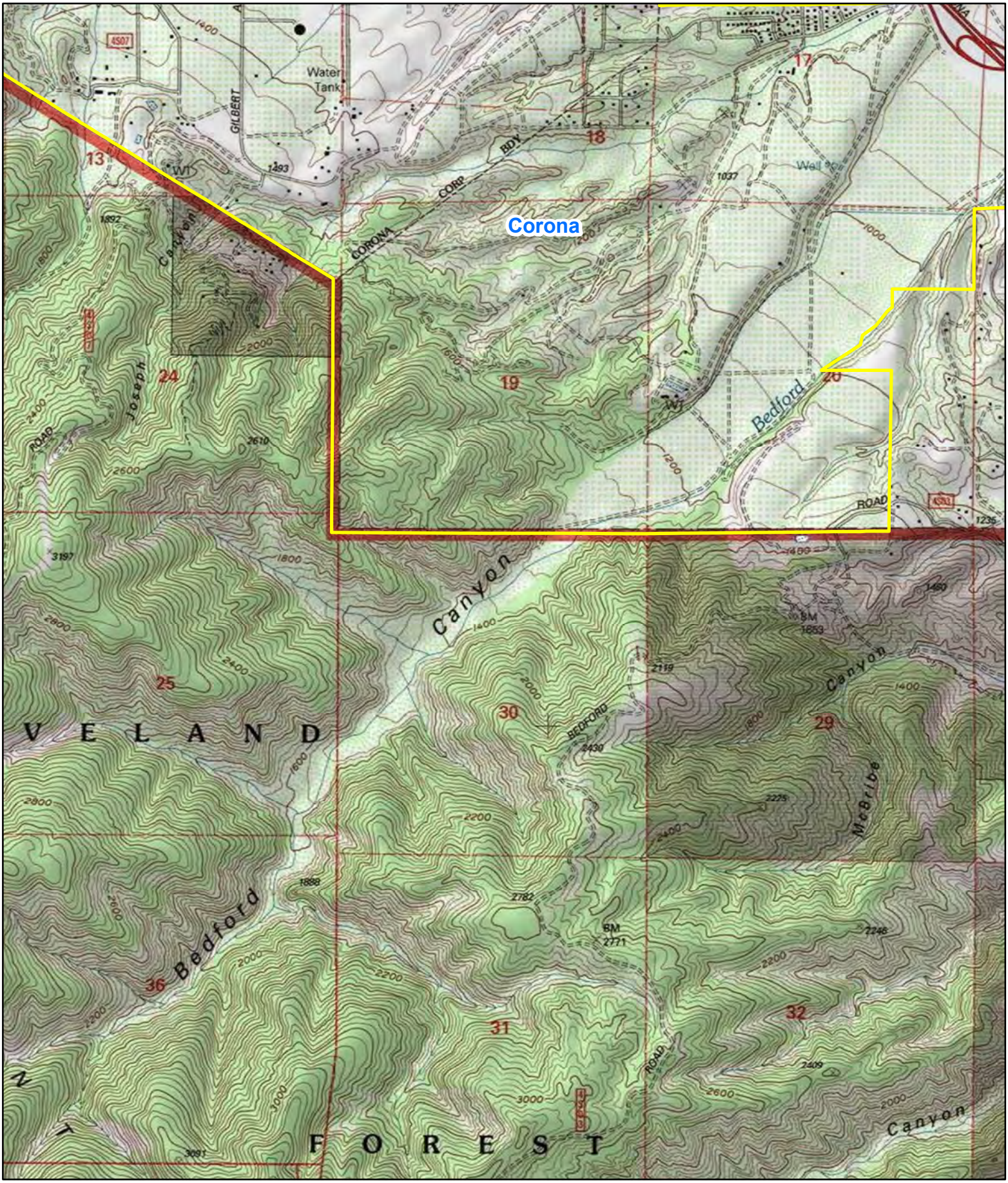
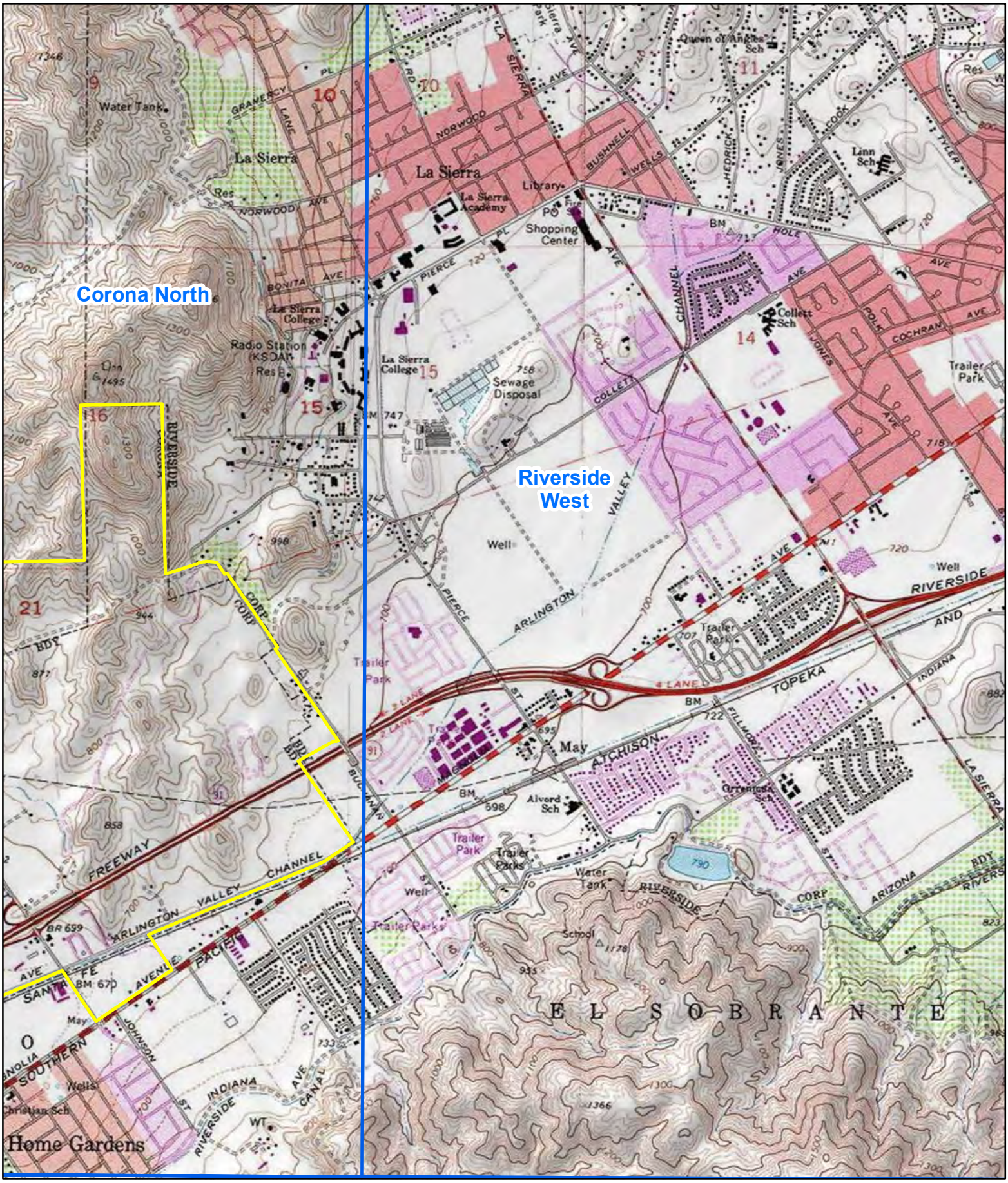


Figure 1. Project Area



1:24,000

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Legend

- Project Area
- 7.5' USGS Quads

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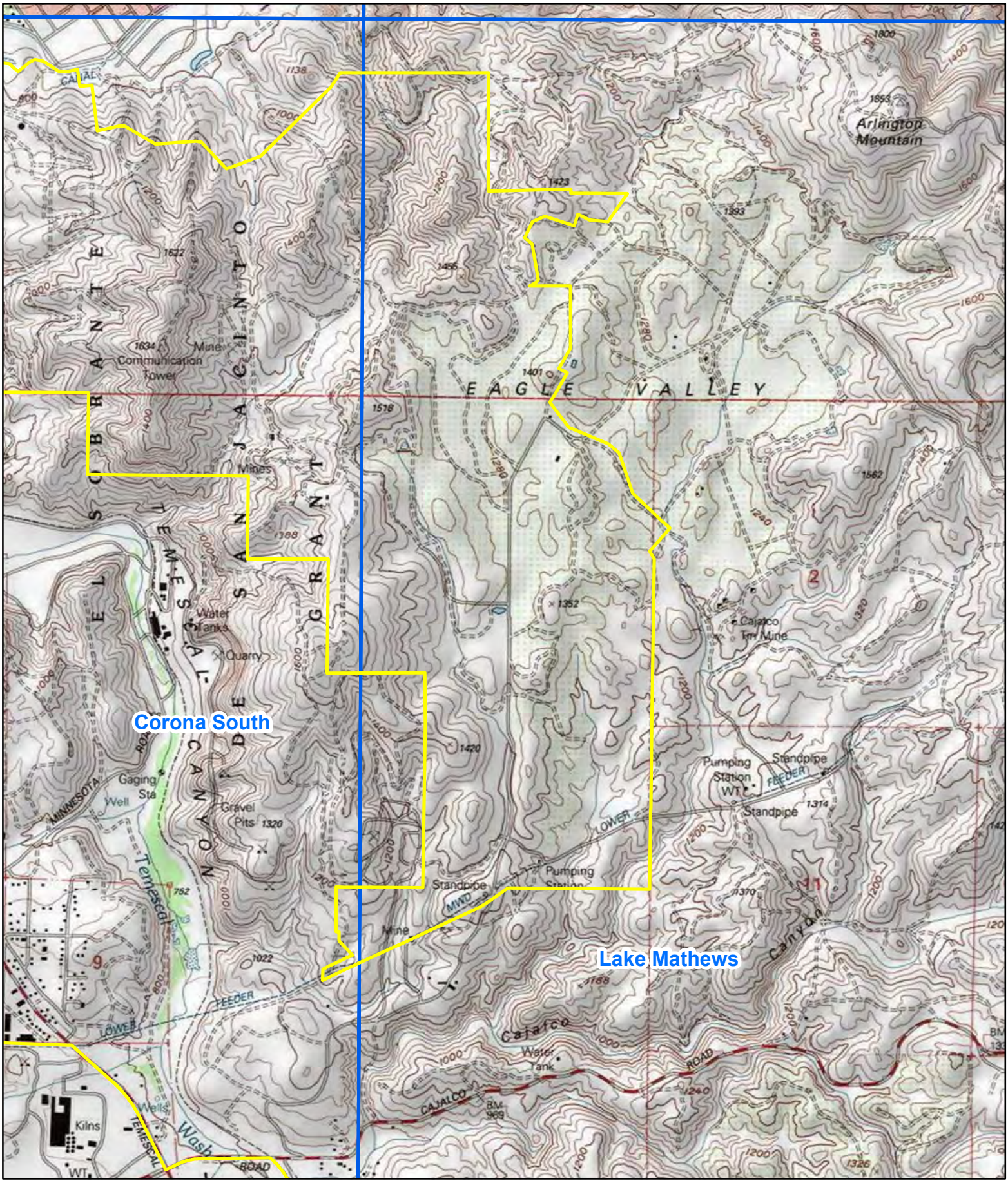
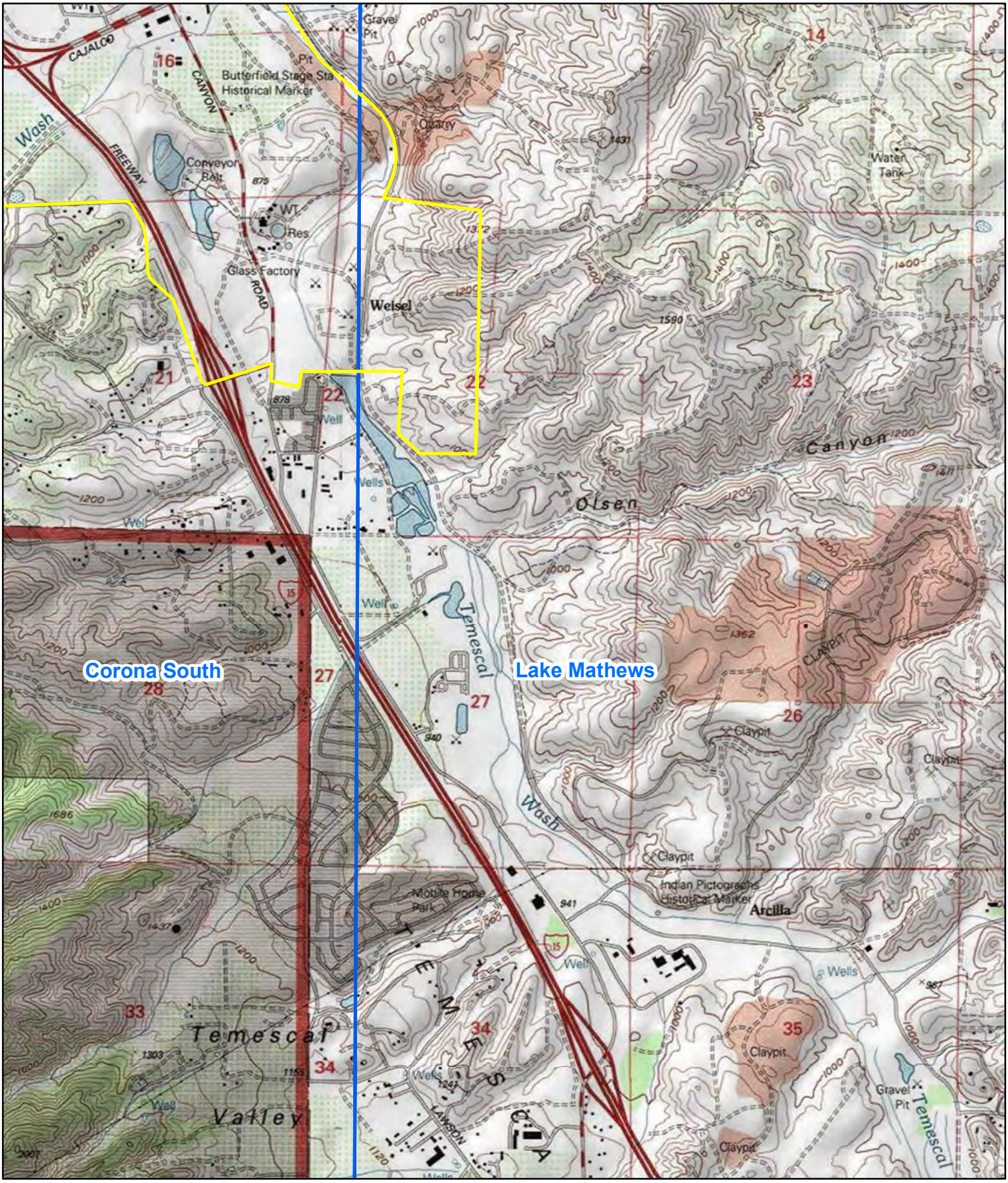


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Figure 1. Project Area

RED TAIL ENVIRONMENTAL

RED TAIL ENVIRONMENTAL

April 6, 2020

Michael Garcia
Vice Chairperson
Ewiiaapaayp Tribe
4054 Willows Road, Alpine, CA, 91901
619-445-6315
michaelg@leaningrock.net

Re: City of Corona Reclaimed Water Project, Riverside County, California

Dear Mr. Garcia,

Red Tail Environmental (Red Tail) is conducting an archaeological study for the City of Corona Reclaimed Water Project (project), located within the City of Corona, Riverside County, California. The project area includes the entire City of Corona and the city's sphere of influence. The project is subject to the California Environmental Quality Act (CEQA) and will assess the environmental impact of the City of Corona's Reclaimed Water Master Plan. The City of Corona is the lead agency. The project area is shown on the following USGS 7.5' Quad Maps:

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A record search of the Sacred Lands File with the California Native American Heritage Commission was positive. Red Tail also conducted a record search at the Eastern Information Center.

We are contacting you to request additional information regarding the Project area, if you are aware of any issues of cultural concern regarding the area shown on the enclosed map. In particular, we would like to know if you have knowledge of any Traditional Cultural Properties, Sacred Sites, Tribal Cultural Resources, resource collecting areas, or any other areas of concern of which you would wish us to be aware. If you have any questions or concerns regarding the proposed Project, please contact me at the address or phone number listed below, or via email at Shelby@redtailenvironmental.com. We appreciate any input you may have on this project.

Sincerely,



Shelby Castells, M.A., RPA
Director of Archaeology
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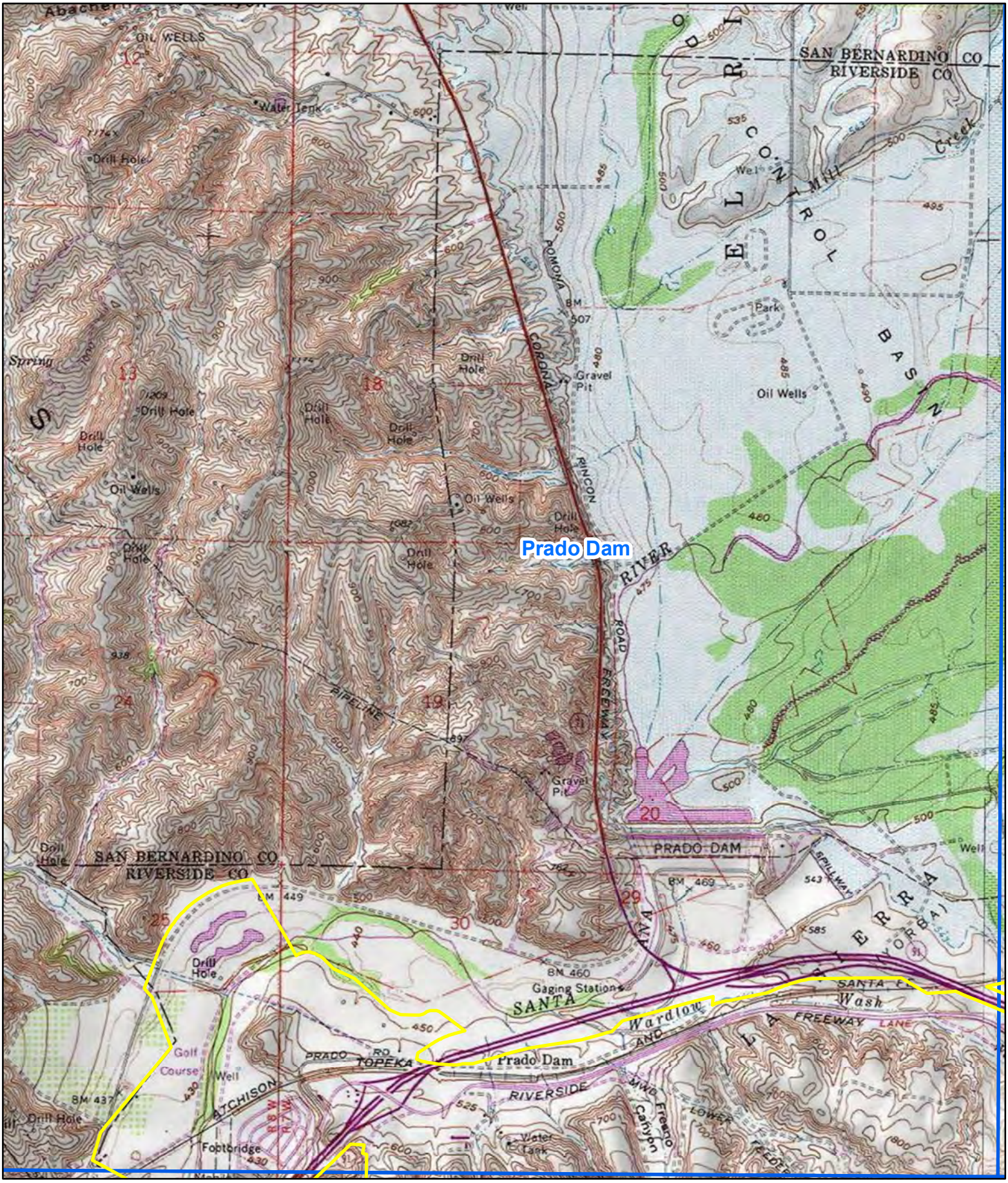


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RED TAIL ENVIRONMENTAL



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RED TAIL ENVIRONMENTAL



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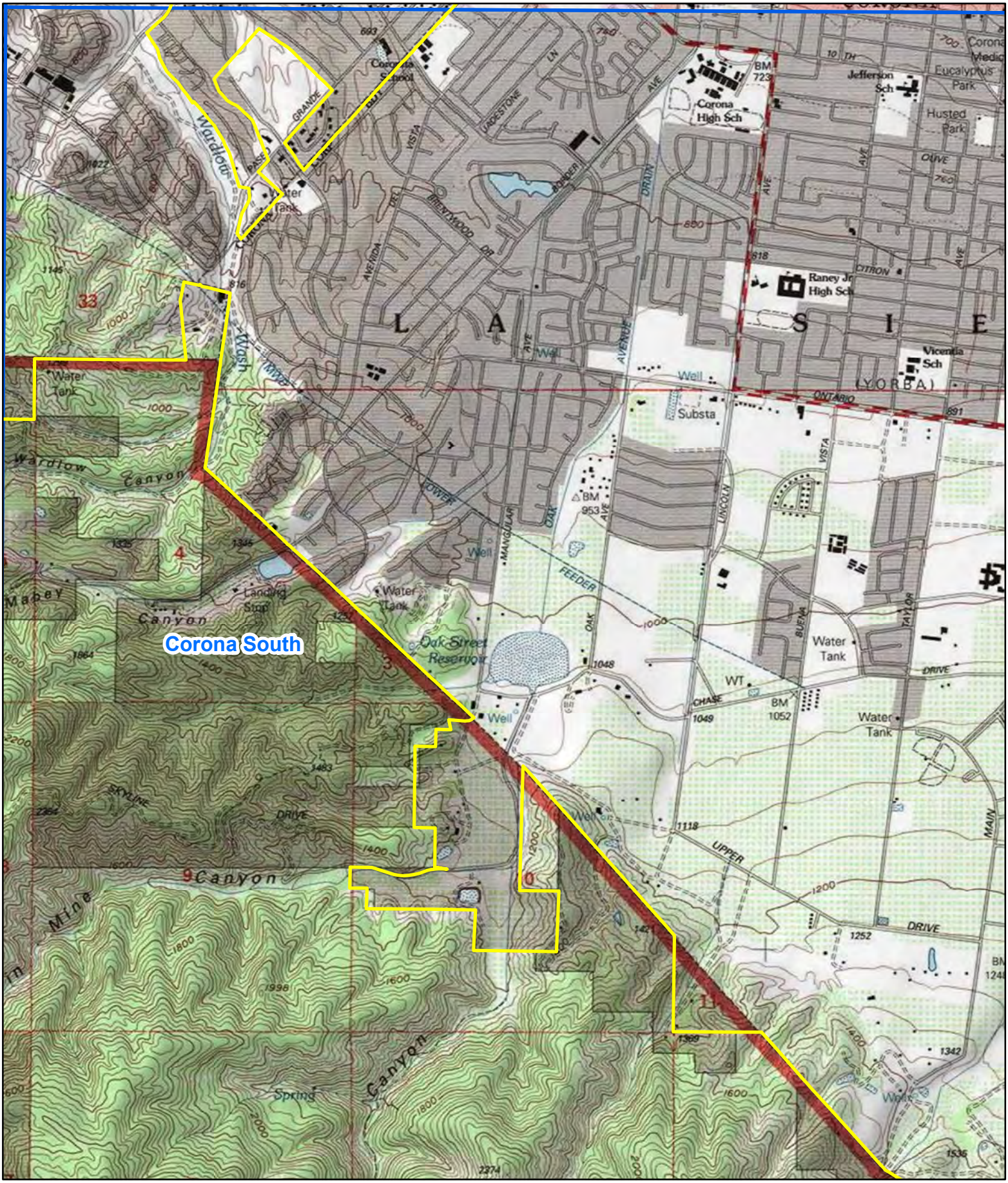


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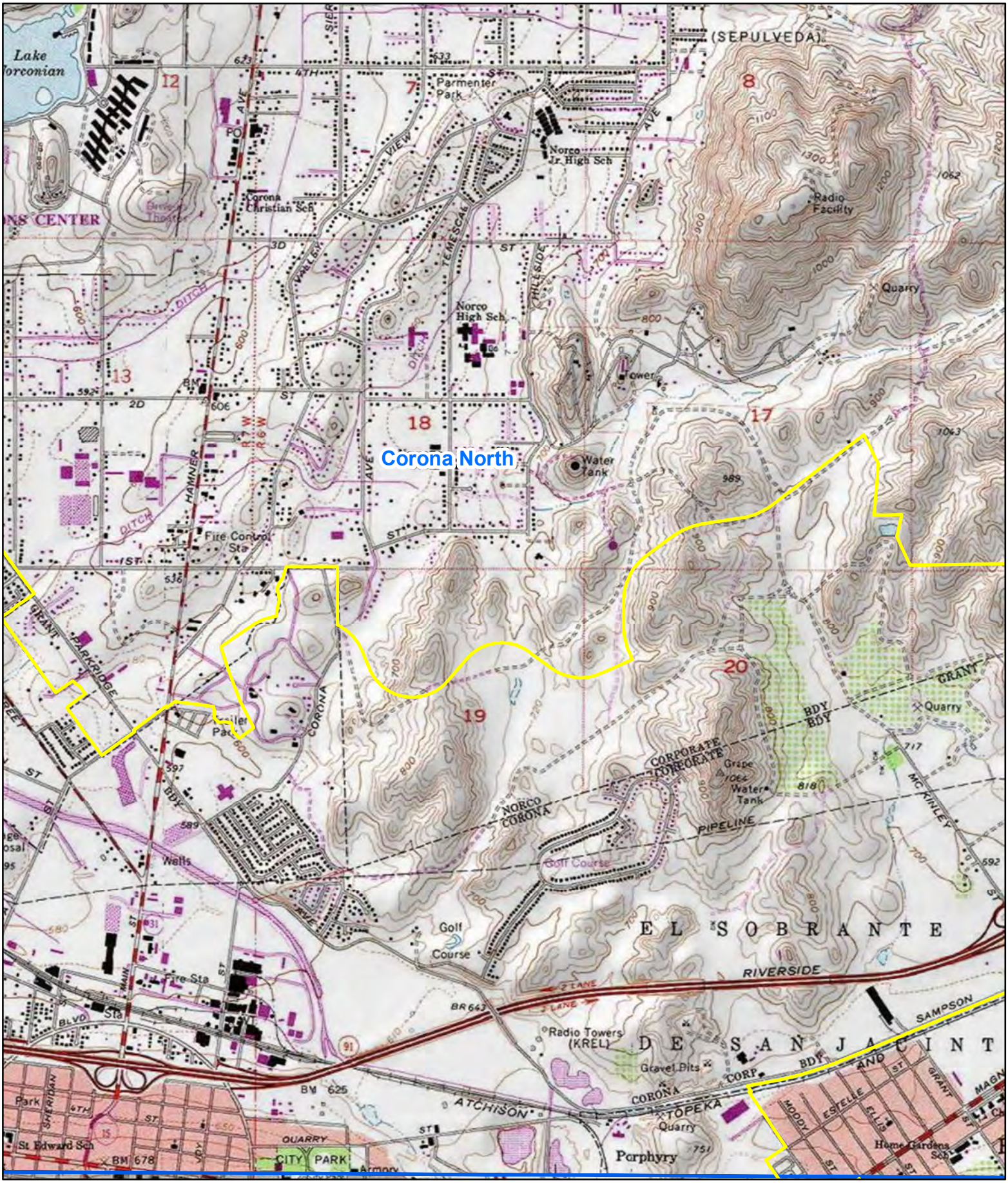
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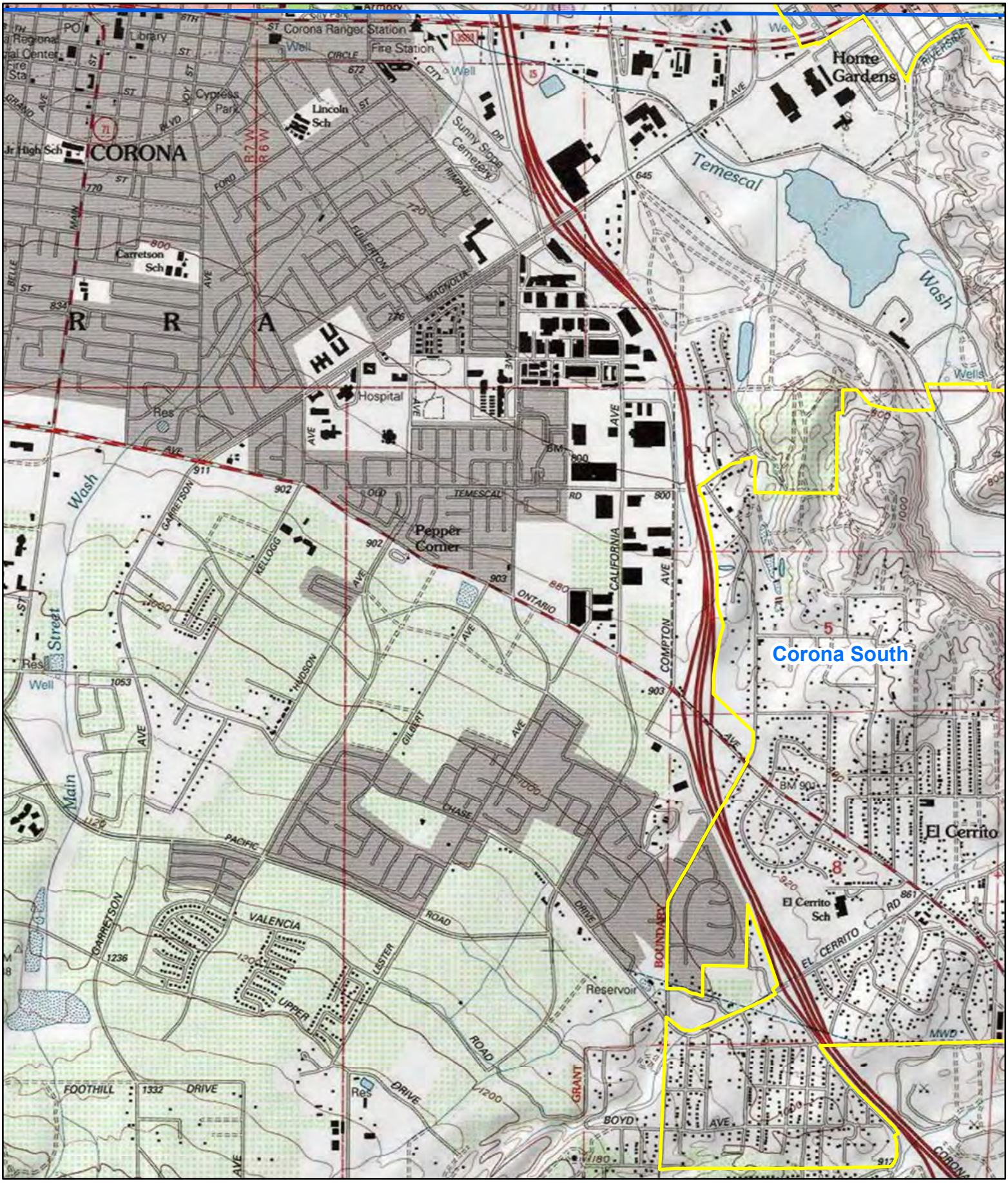


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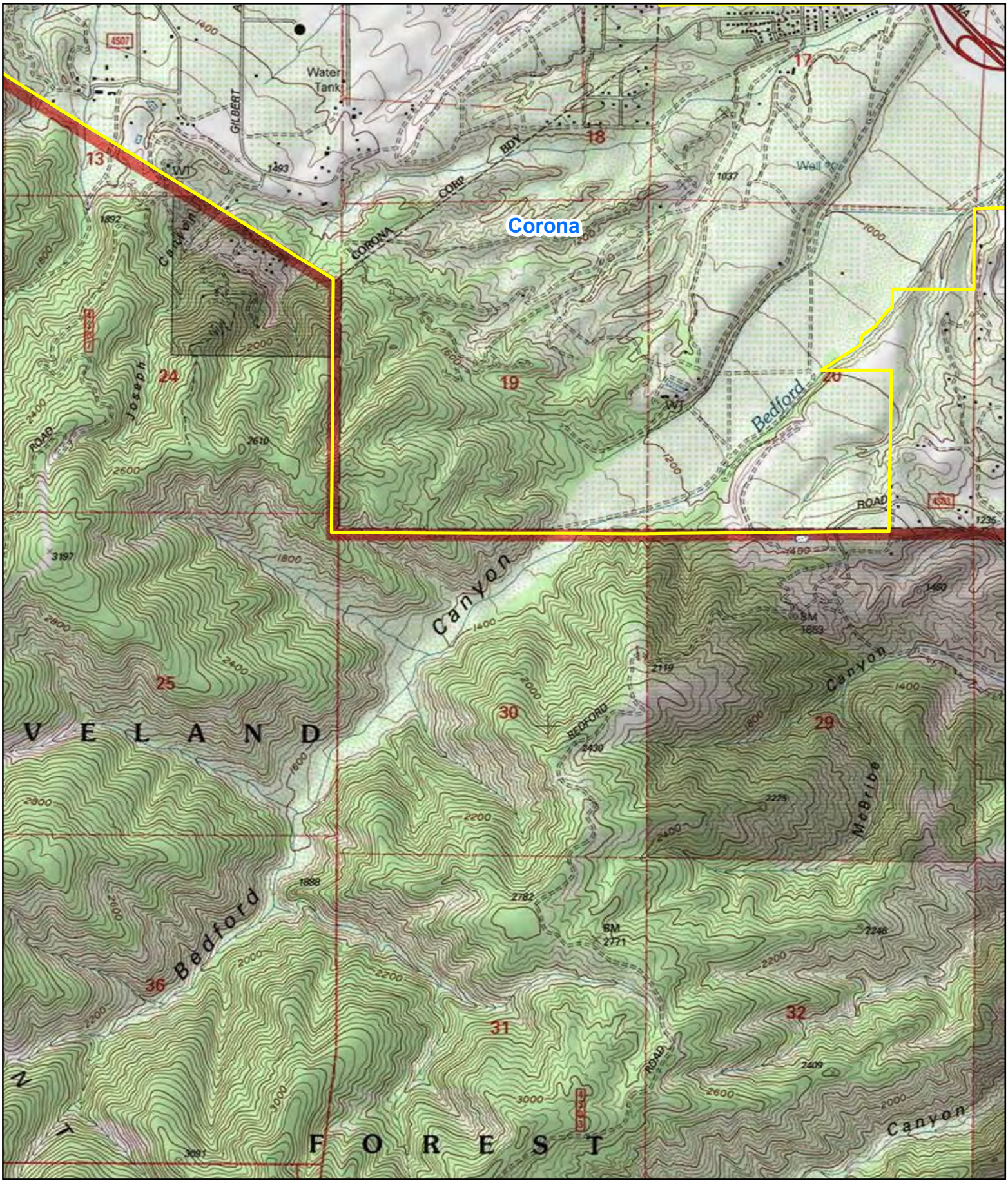
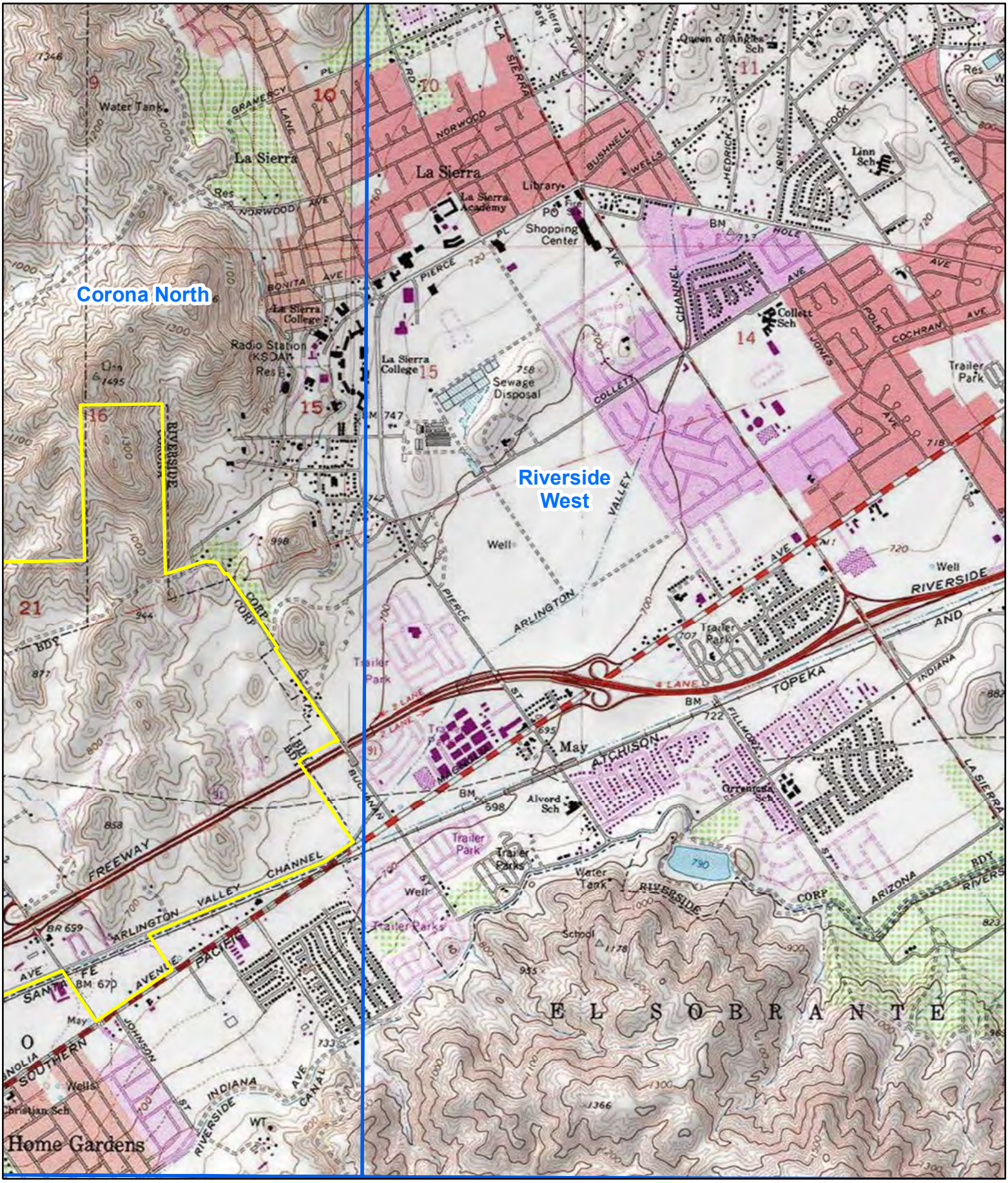


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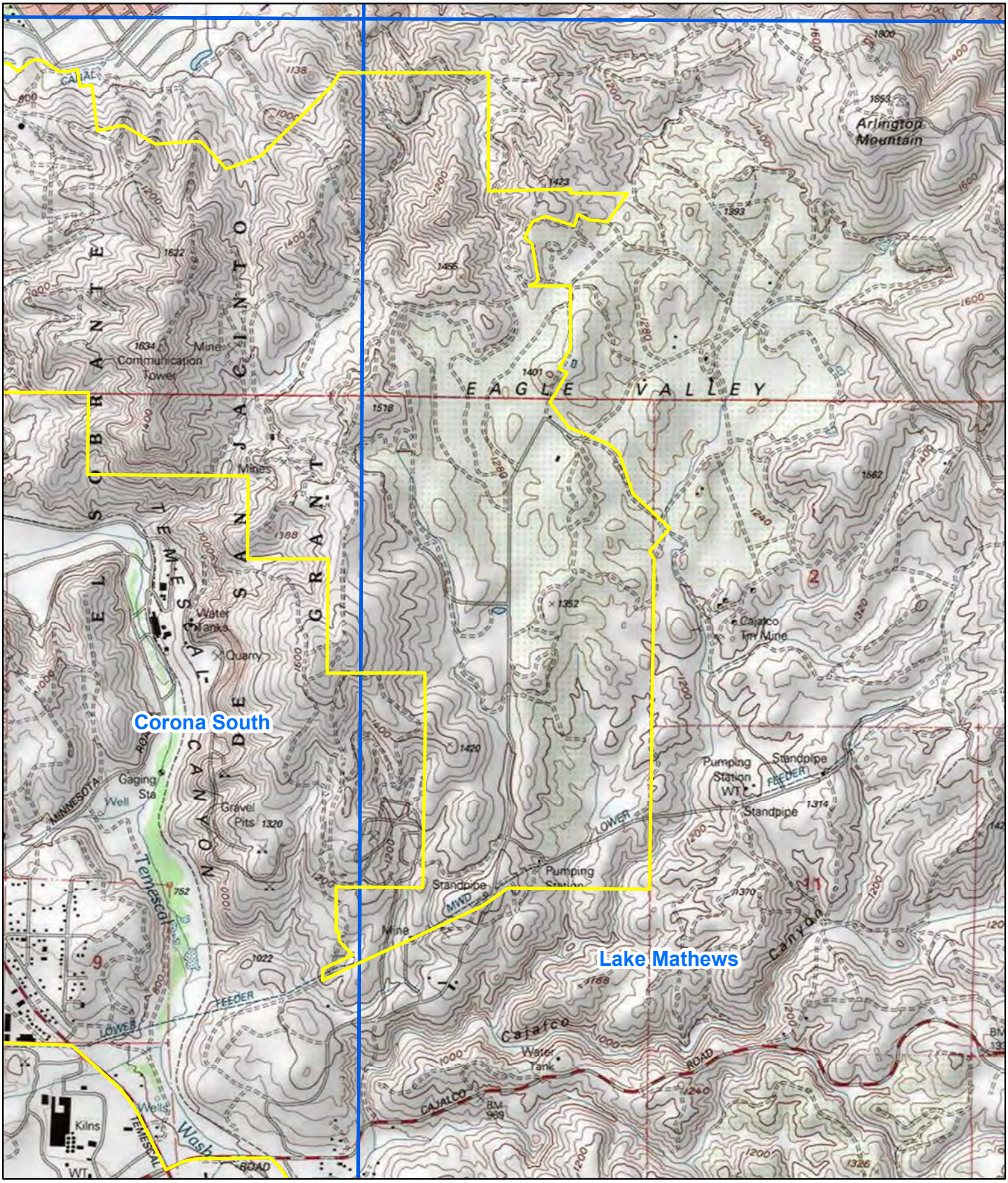
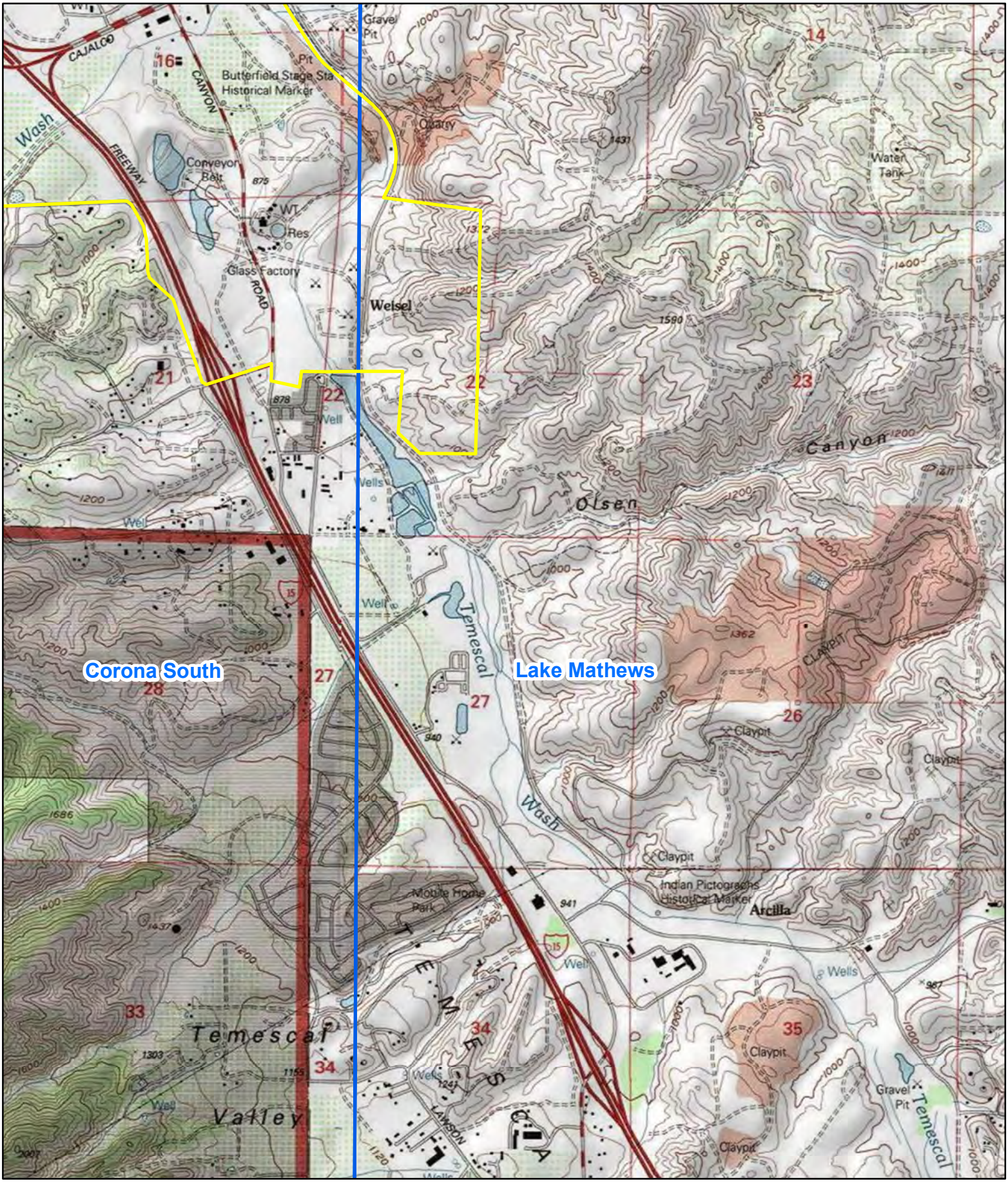


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Figure 1. Project Area

RED TAIL ENVIRONMENTAL

RED TAIL ENVIRONMENTAL

April 6, 2020

Michael Linton
Chairperson
Mesa Grande Band of Diegueno Mission Indians
PO Box 270, Santa Ysabel, CA, 92070
760-782-3818
mesagrandeband@msn.com

Re: City of Corona Reclaimed Water Project, Riverside County, California

Dear Mr. Linton,

Red Tail Environmental (Red Tail) is conducting an archaeological study for the City of Corona Reclaimed Water Project (project), located within the City of Corona, Riverside County, California. The project area includes the entire City of Corona and the city's sphere of influence. The project is subject to the California Environmental Quality Act (CEQA) and will assess the environmental impact of the City of Corona's Reclaimed Water Master Plan. The City of Corona is the lead agency. The project area is shown on the following USGS 7.5' Quad Maps:

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We are contacting you to request additional information regarding the Project area, if you are aware of any issues of cultural concern regarding the area shown on the enclosed map. In particular, we would like to know if you have knowledge of any Traditional Cultural Properties, Sacred Sites, Tribal Cultural Resources, resource collecting areas, or any other areas of concern of which you would wish us to be aware. If you have any questions or concerns regarding the proposed Project, please contact me at the address or phone number listed below, or via email at Shelby@redtailenvironmental.com. We appreciate any input you may have on this project.

Sincerely,



Shelby Castells, M.A., RPA
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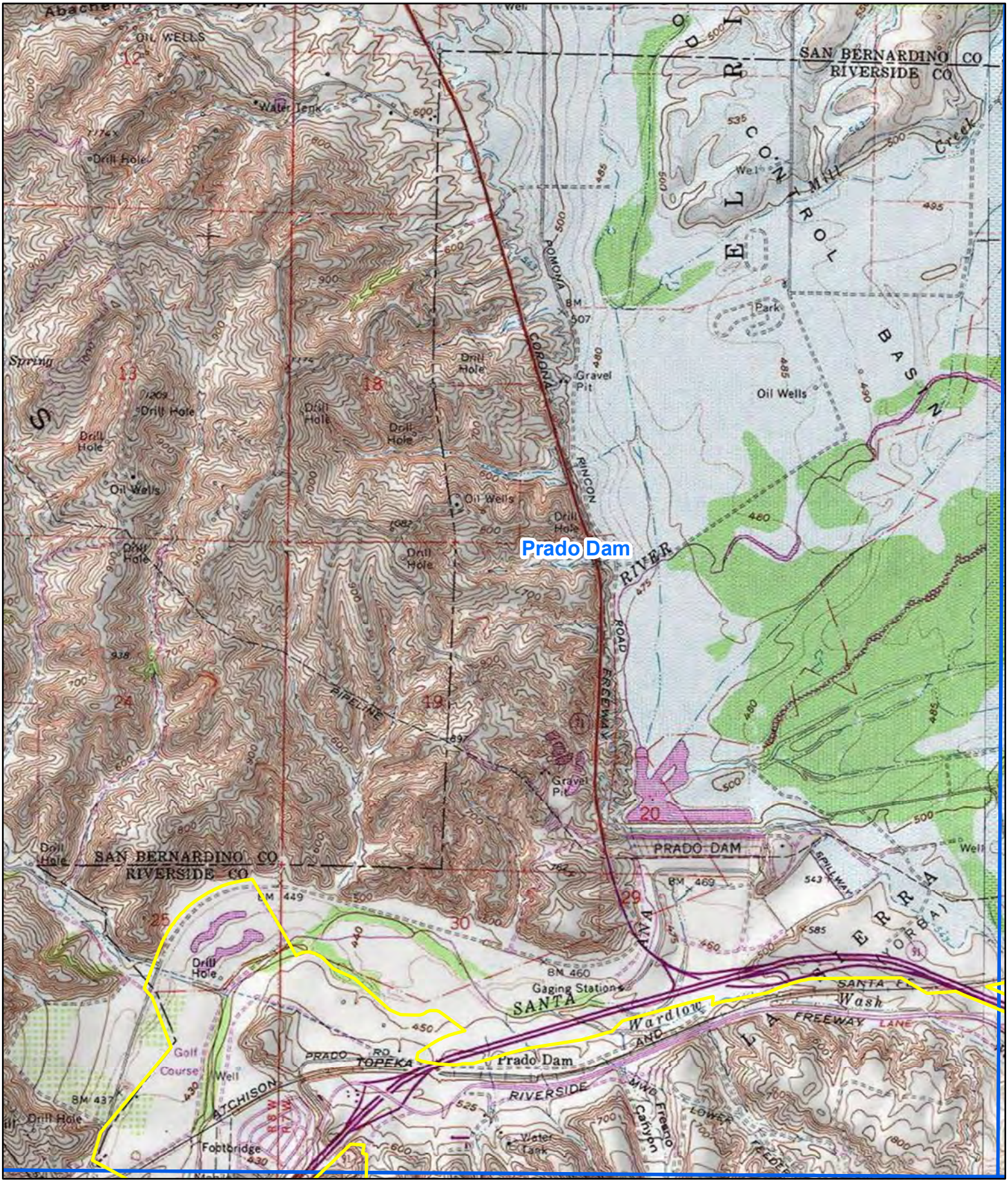


Figure 1. Project Area

RED TAIL ENVIRONMENTAL



Figure 1. Project Area



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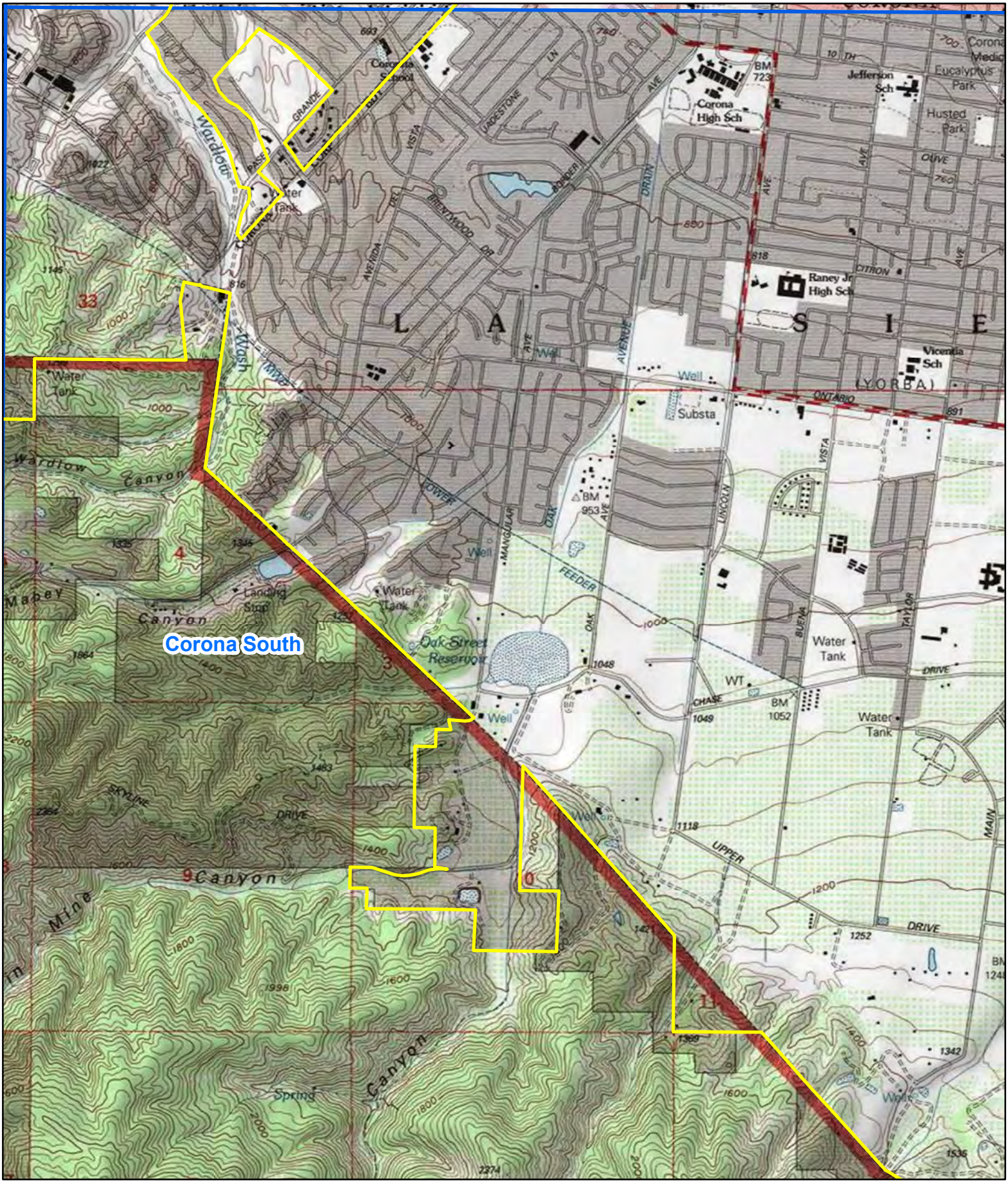


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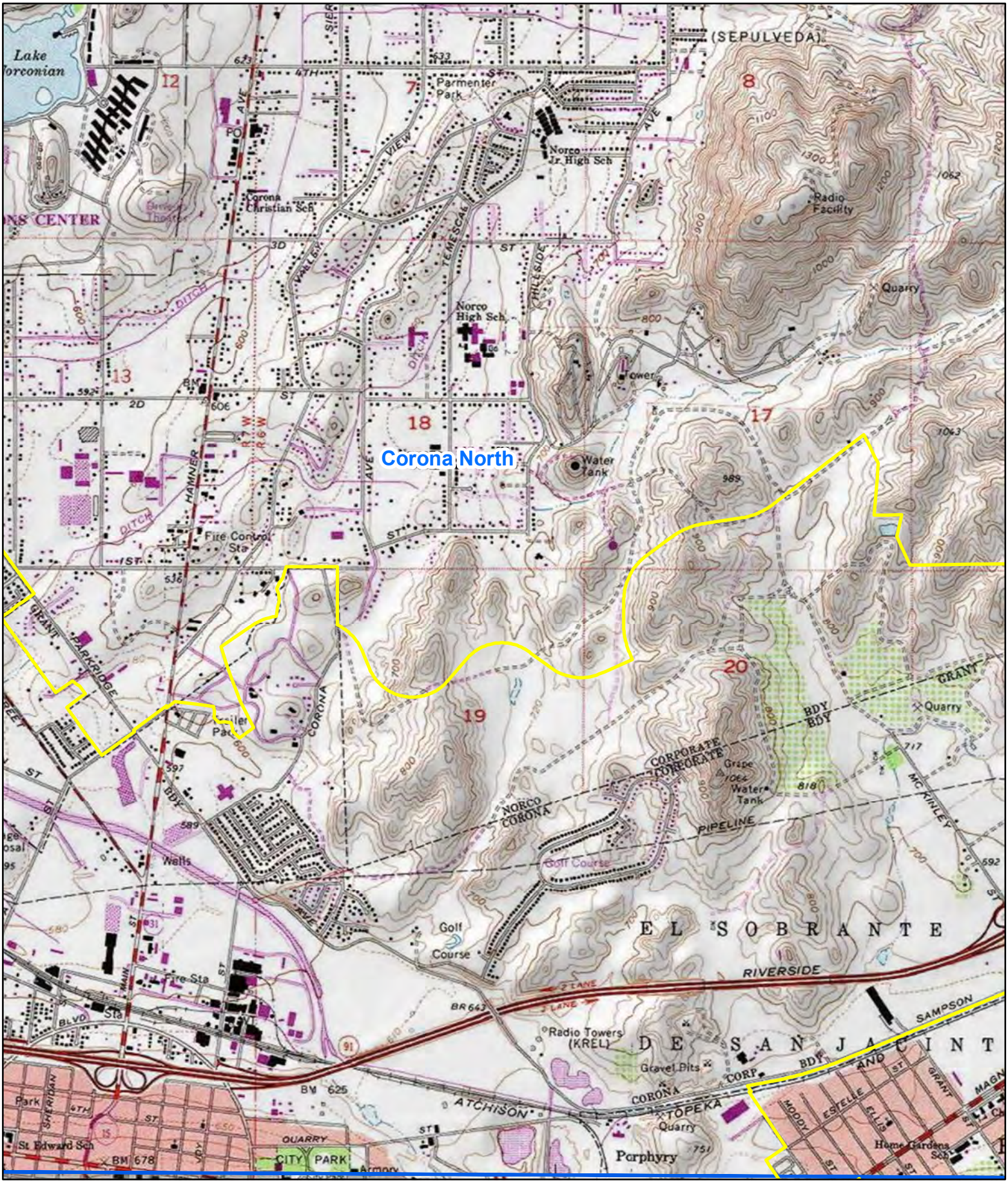
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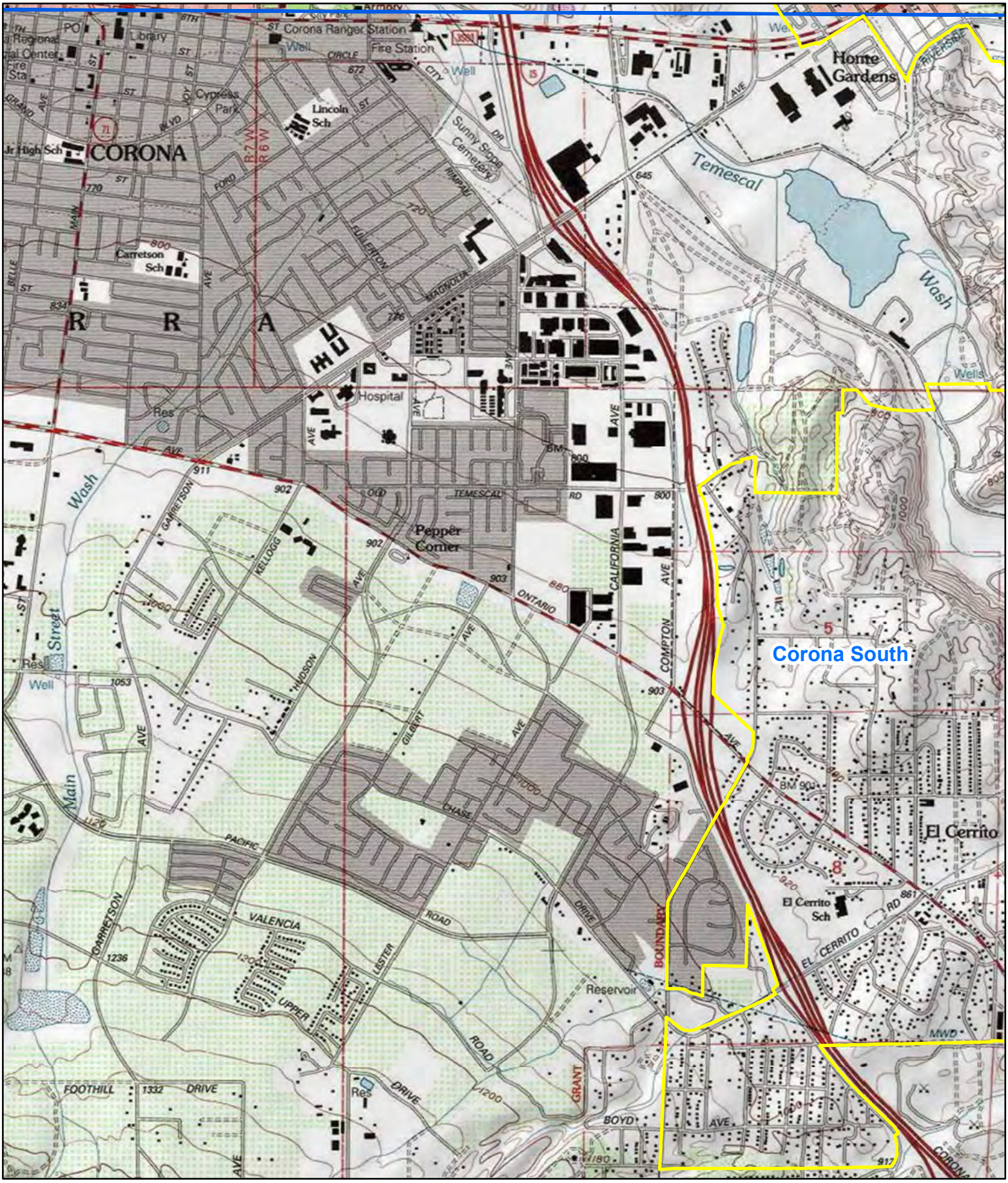


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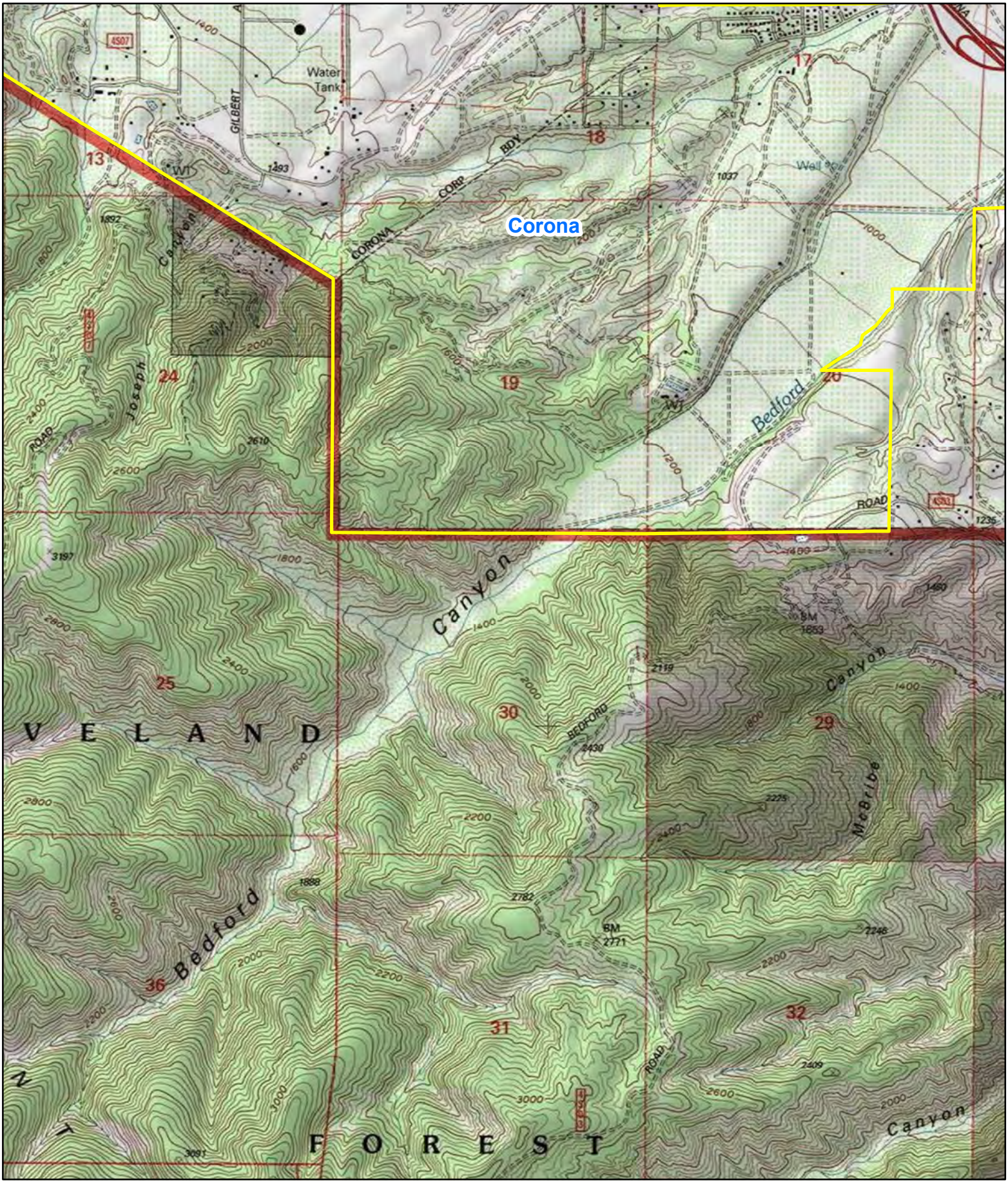


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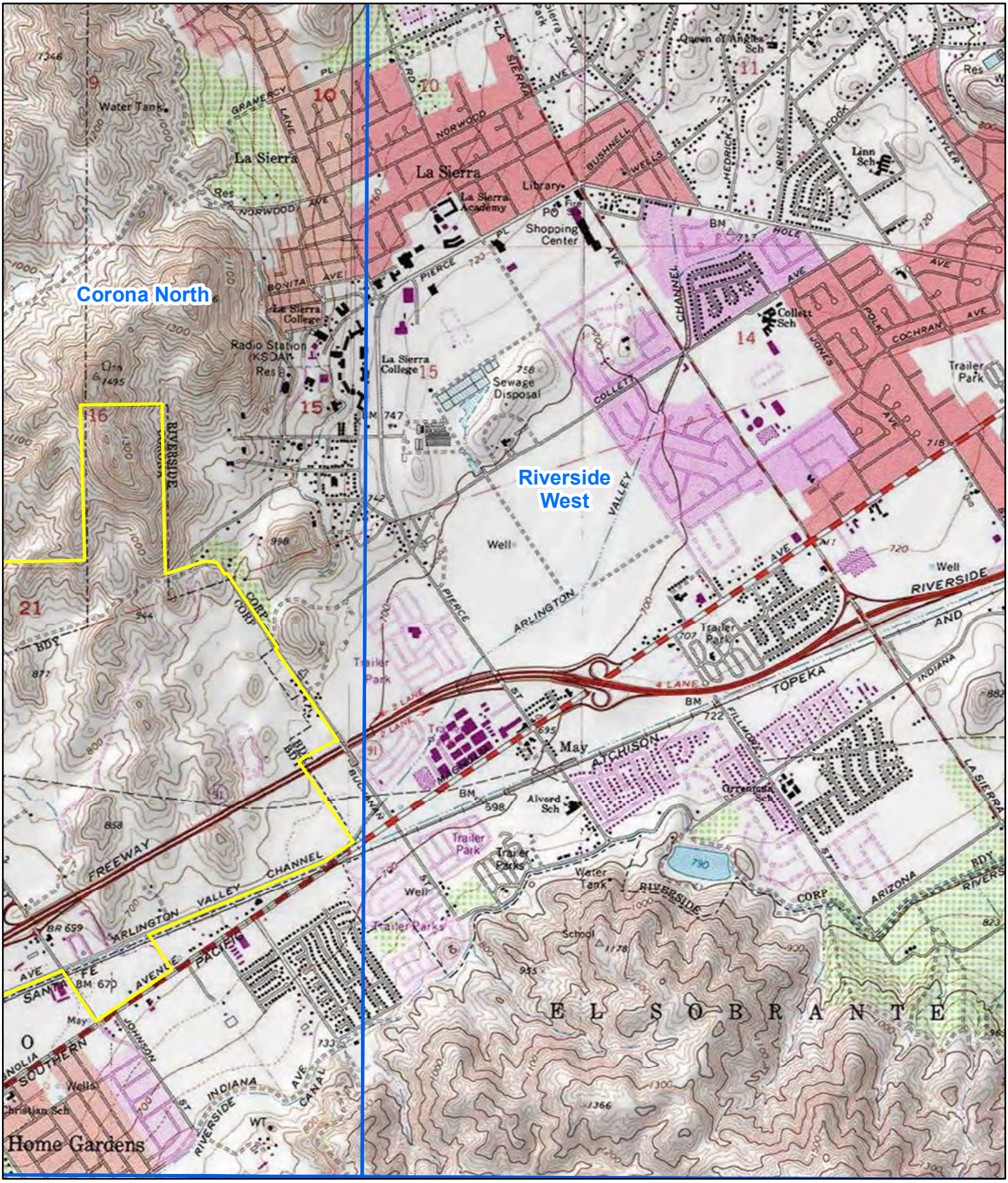


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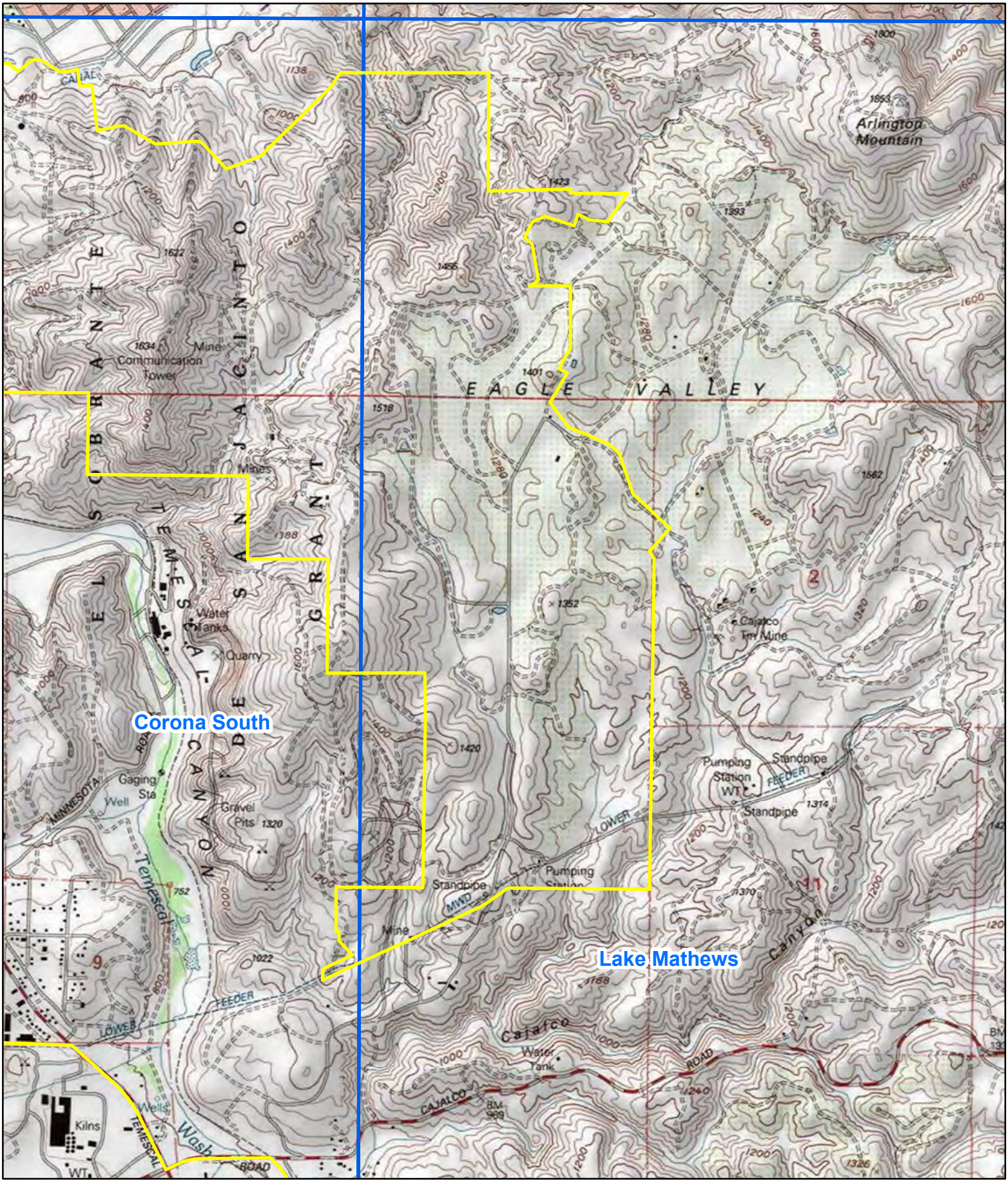
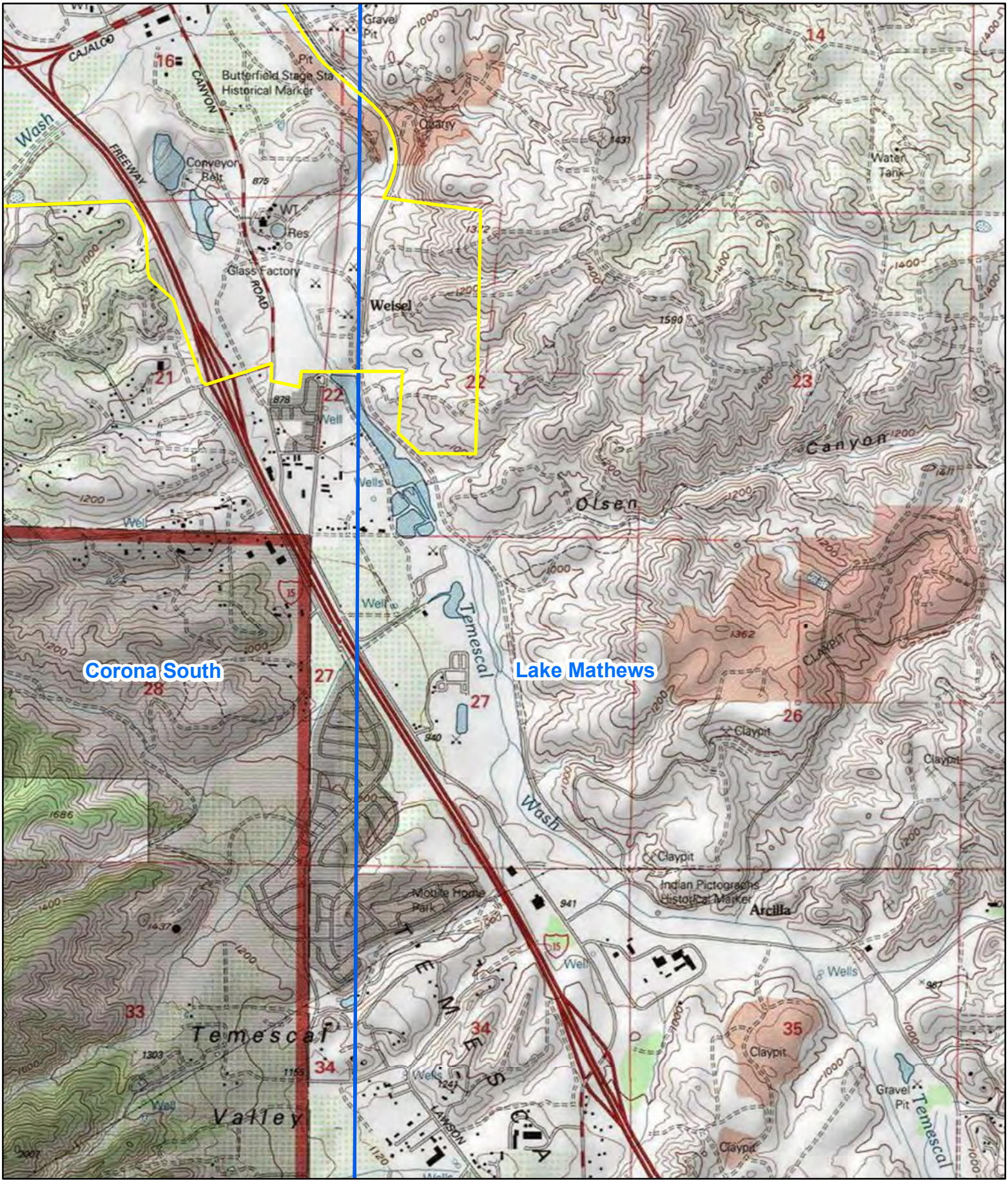


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RED TAIL ENVIRONMENTAL

RED TAIL ENVIRONMENTAL

April 6, 2020

Mark Macarro
Chairperson
Pechanga Band of Luiseno Indians
PO Box 1477, Temecula, CA, 92593
951-770-6000
epreston@pechanga-nsn.gov

Re: City of Corona Reclaimed Water Project, Riverside County, California

Dear Mr. Macarro,

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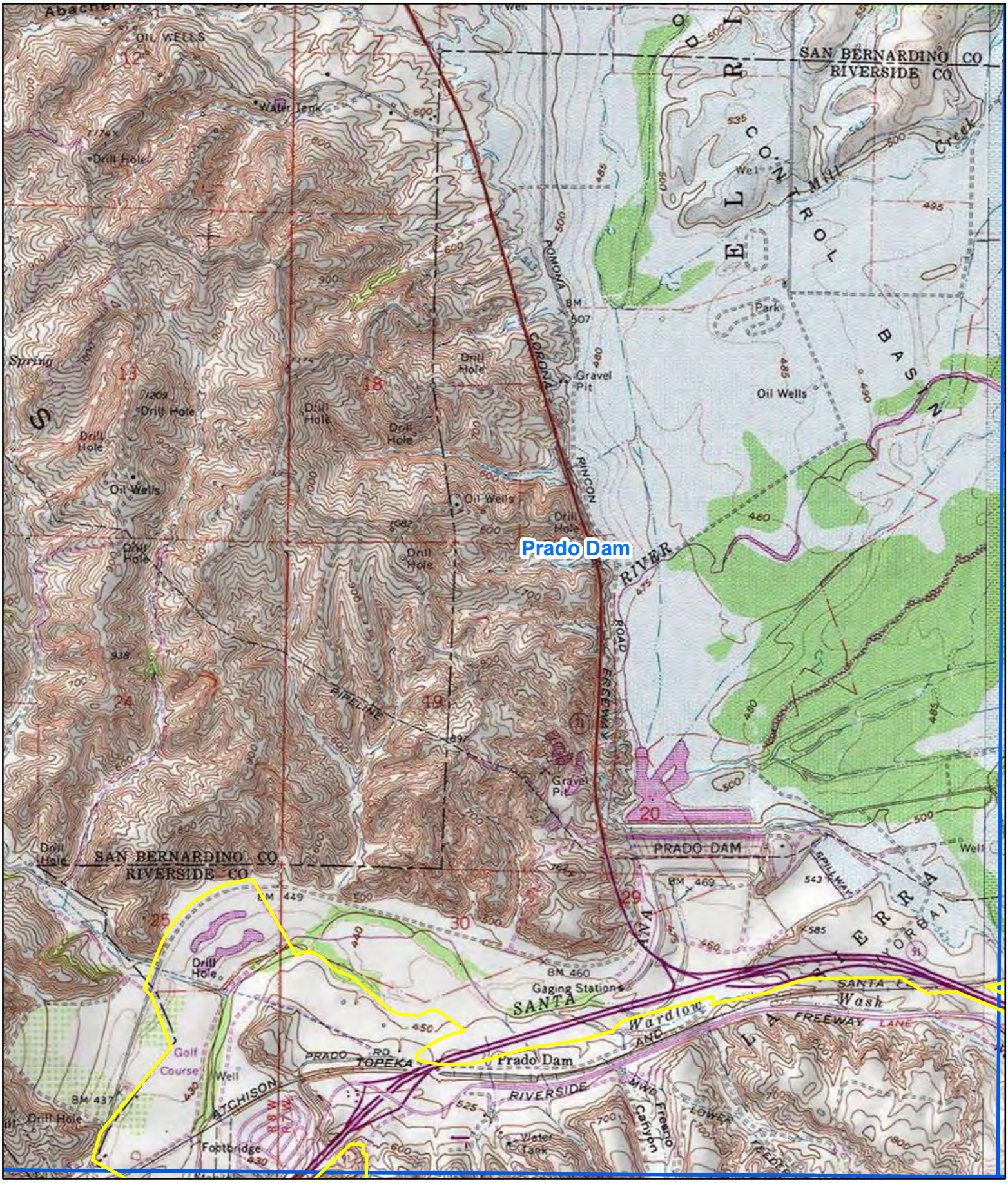


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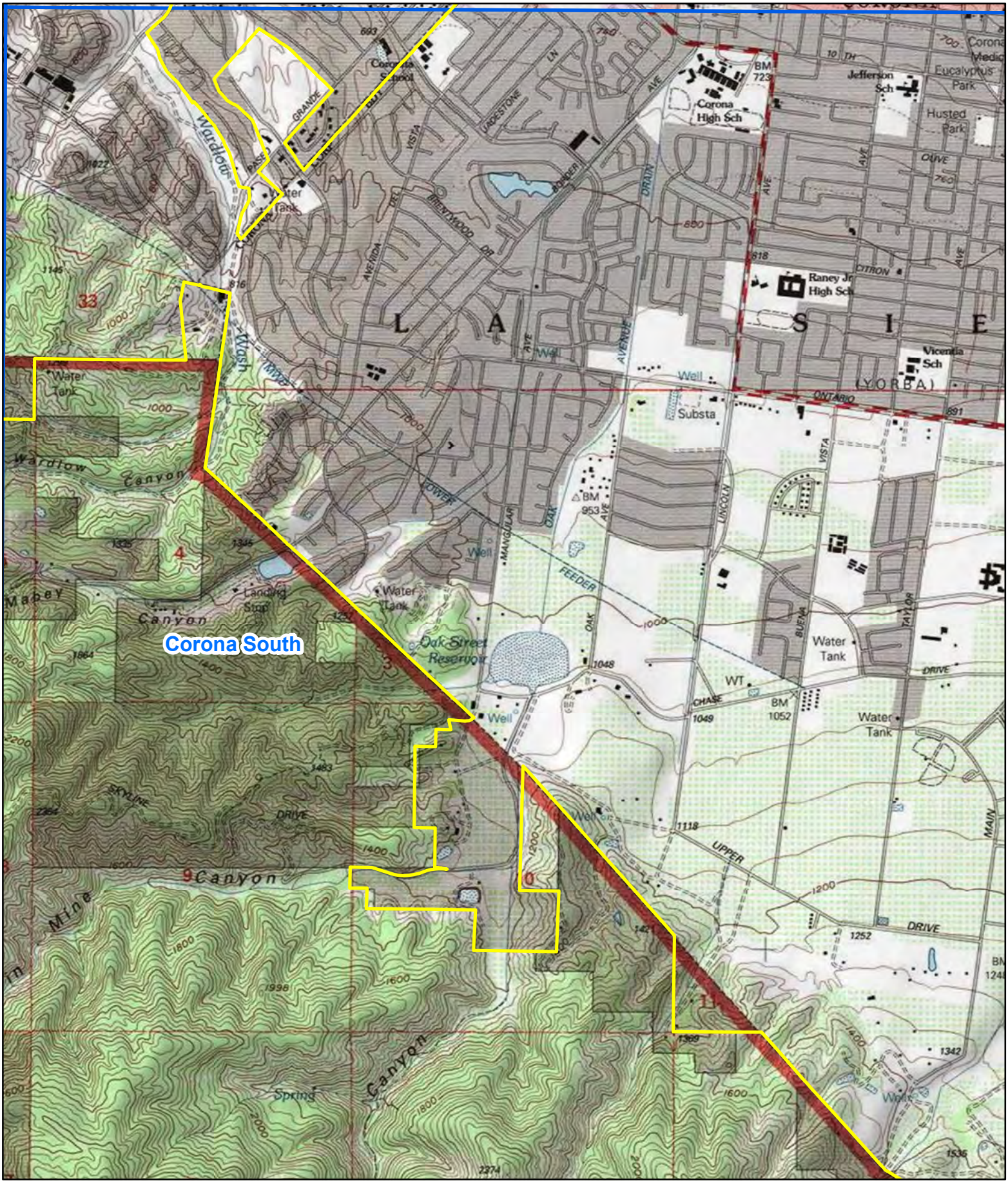


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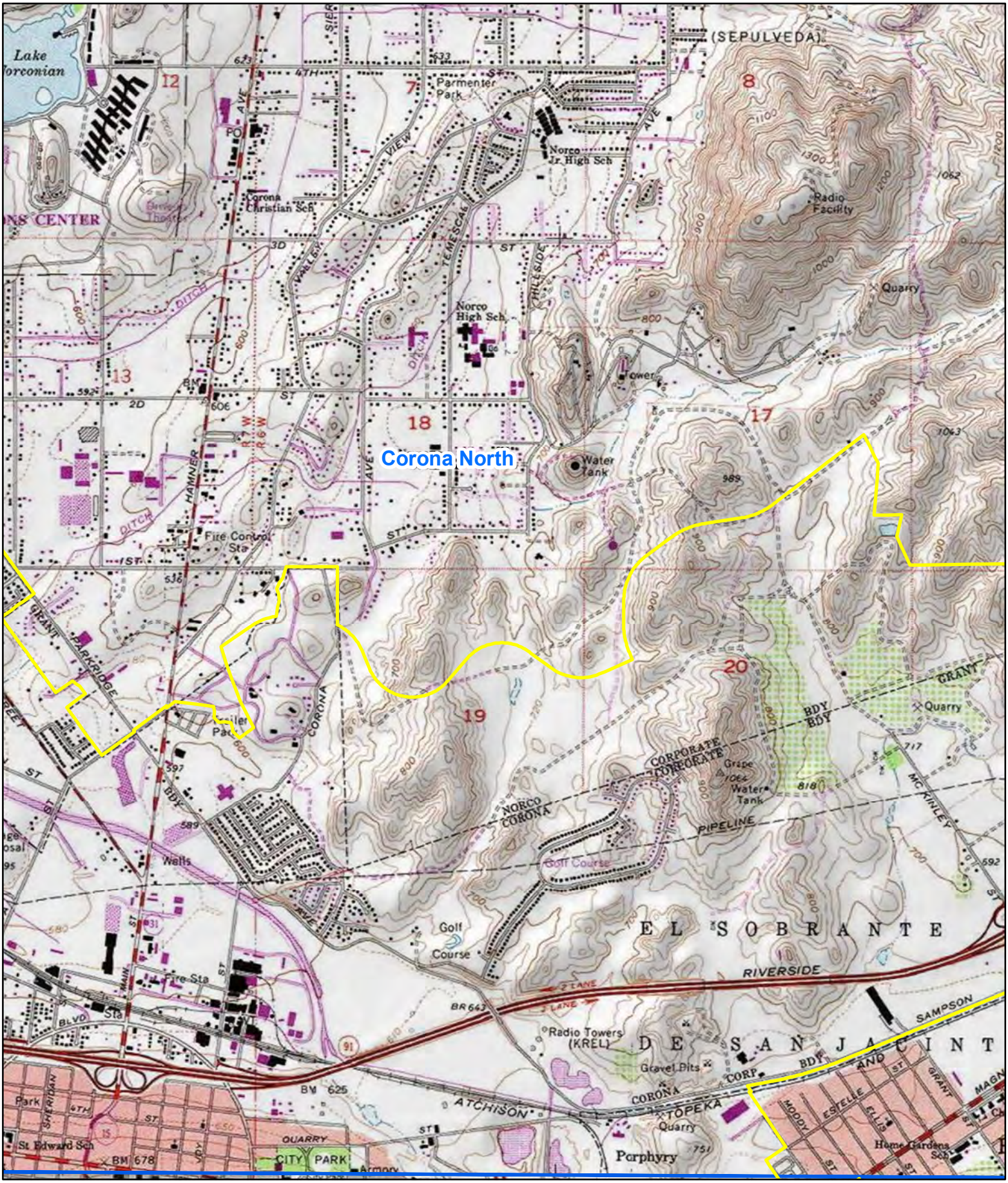
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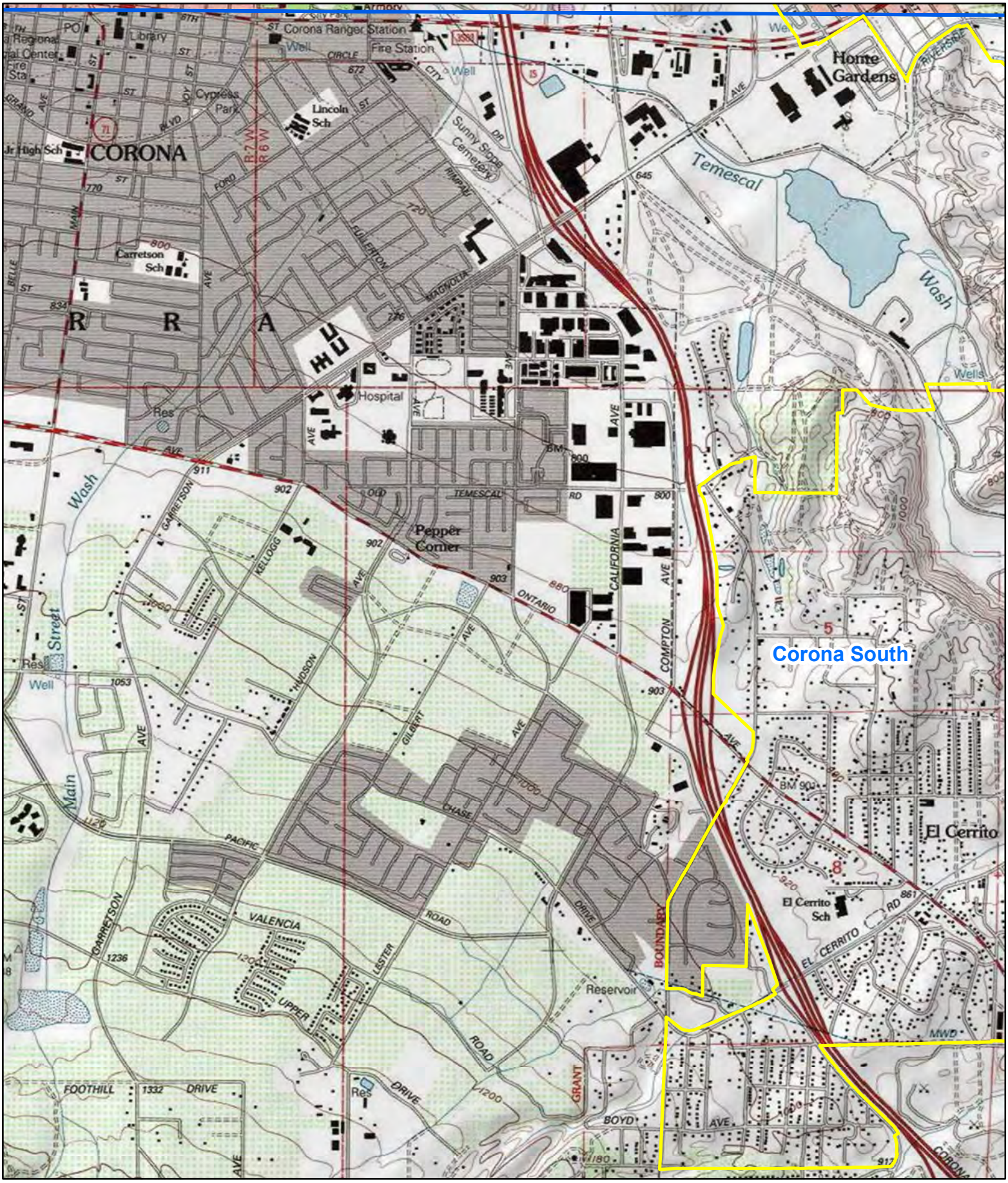


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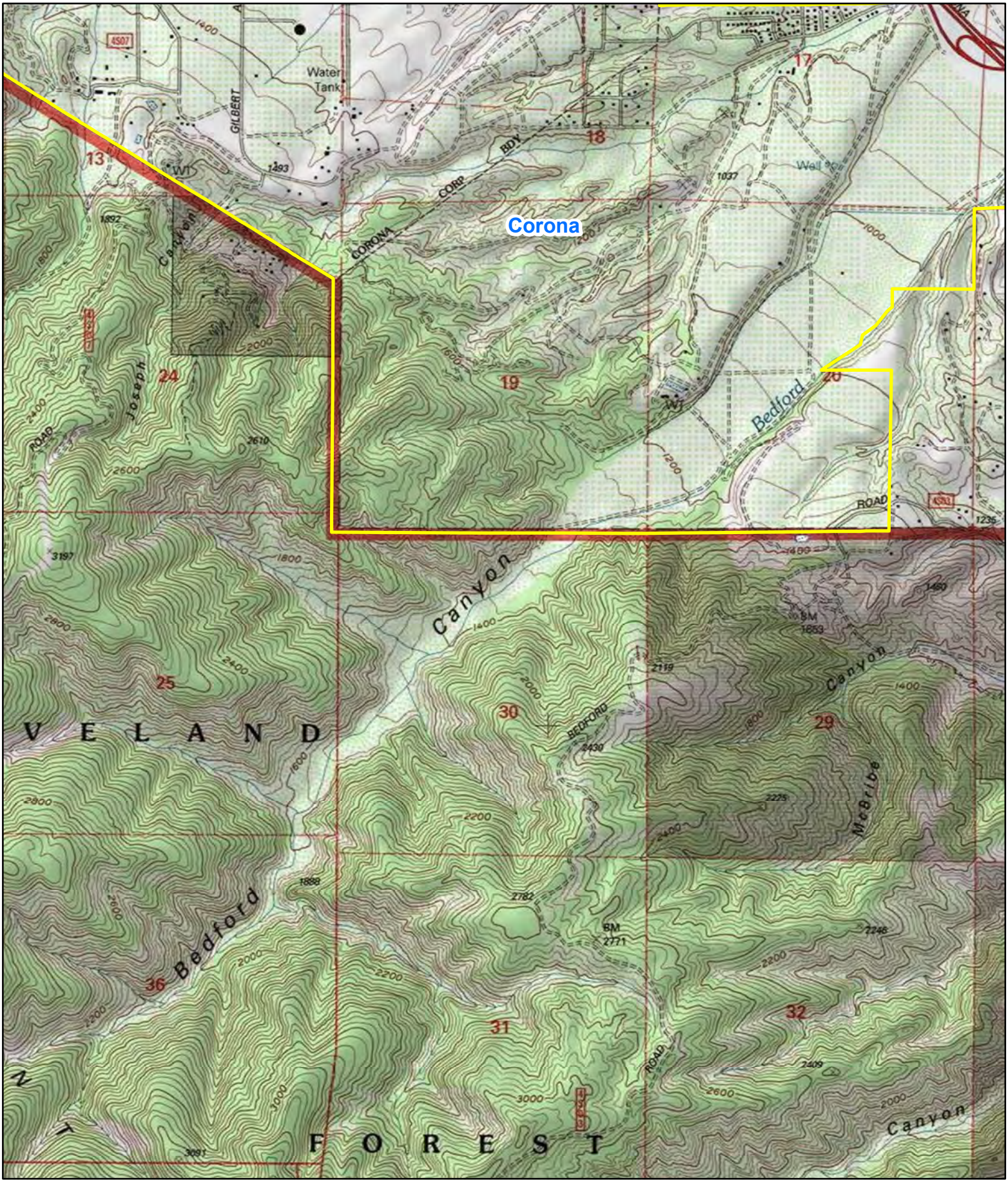


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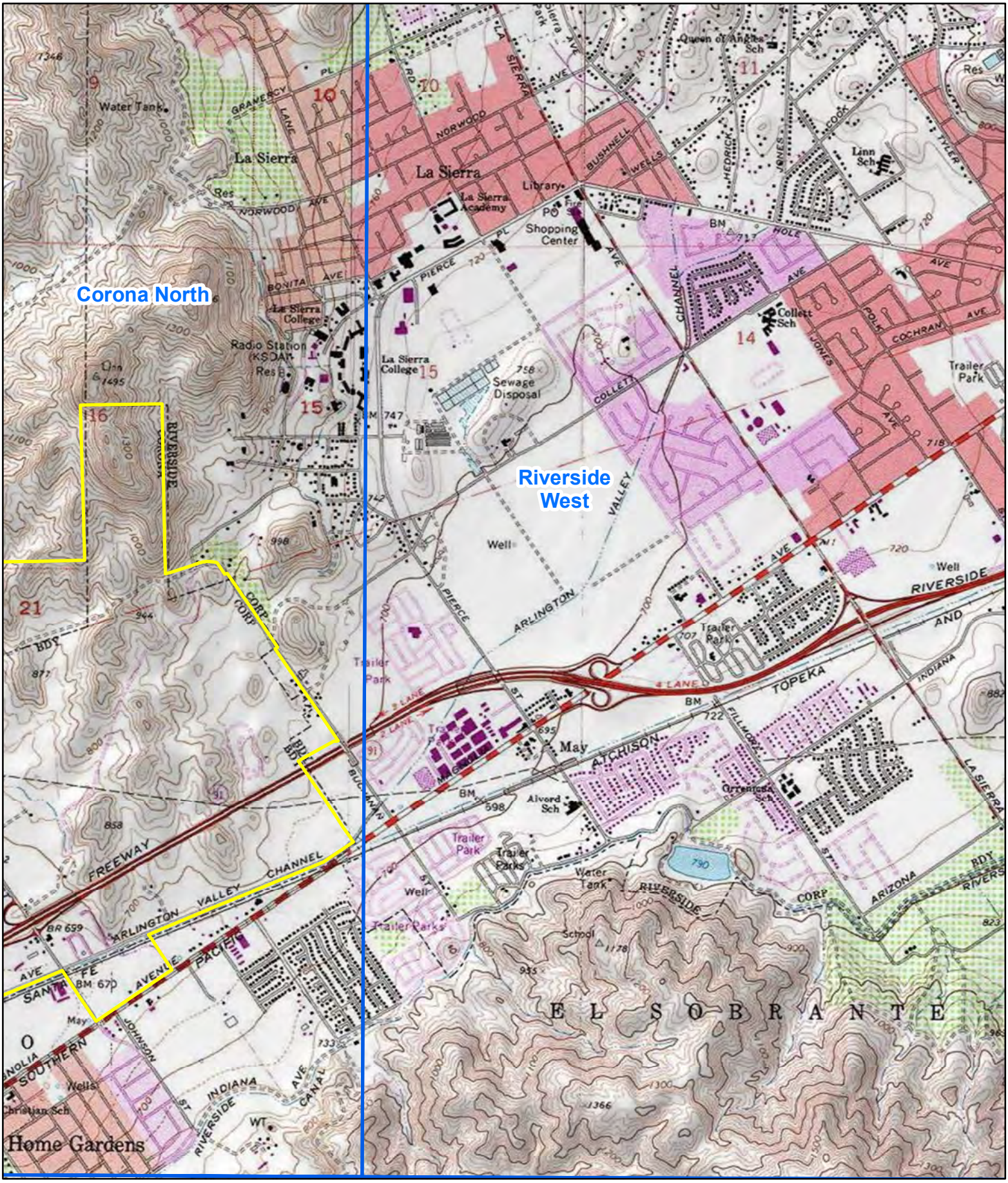


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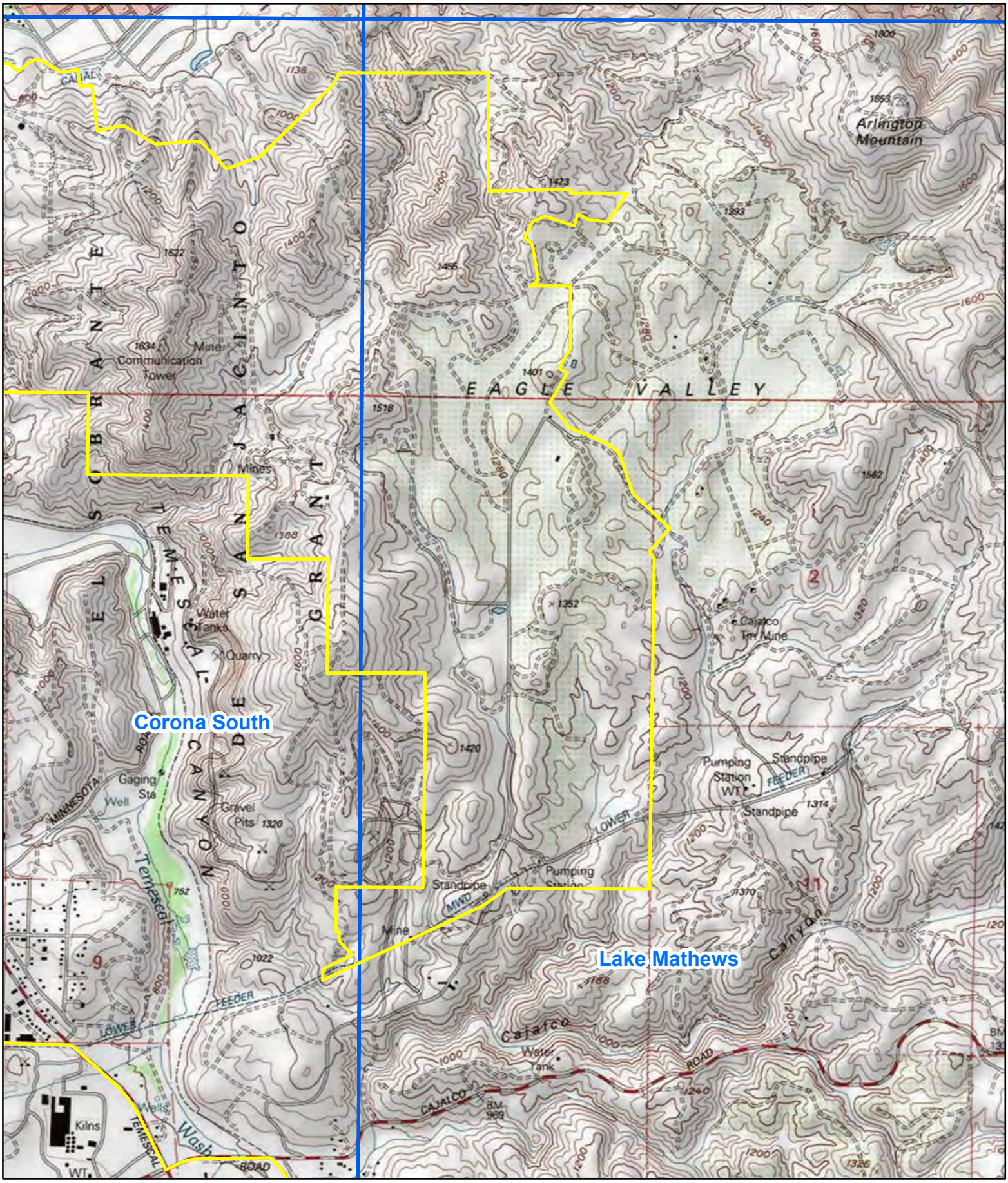
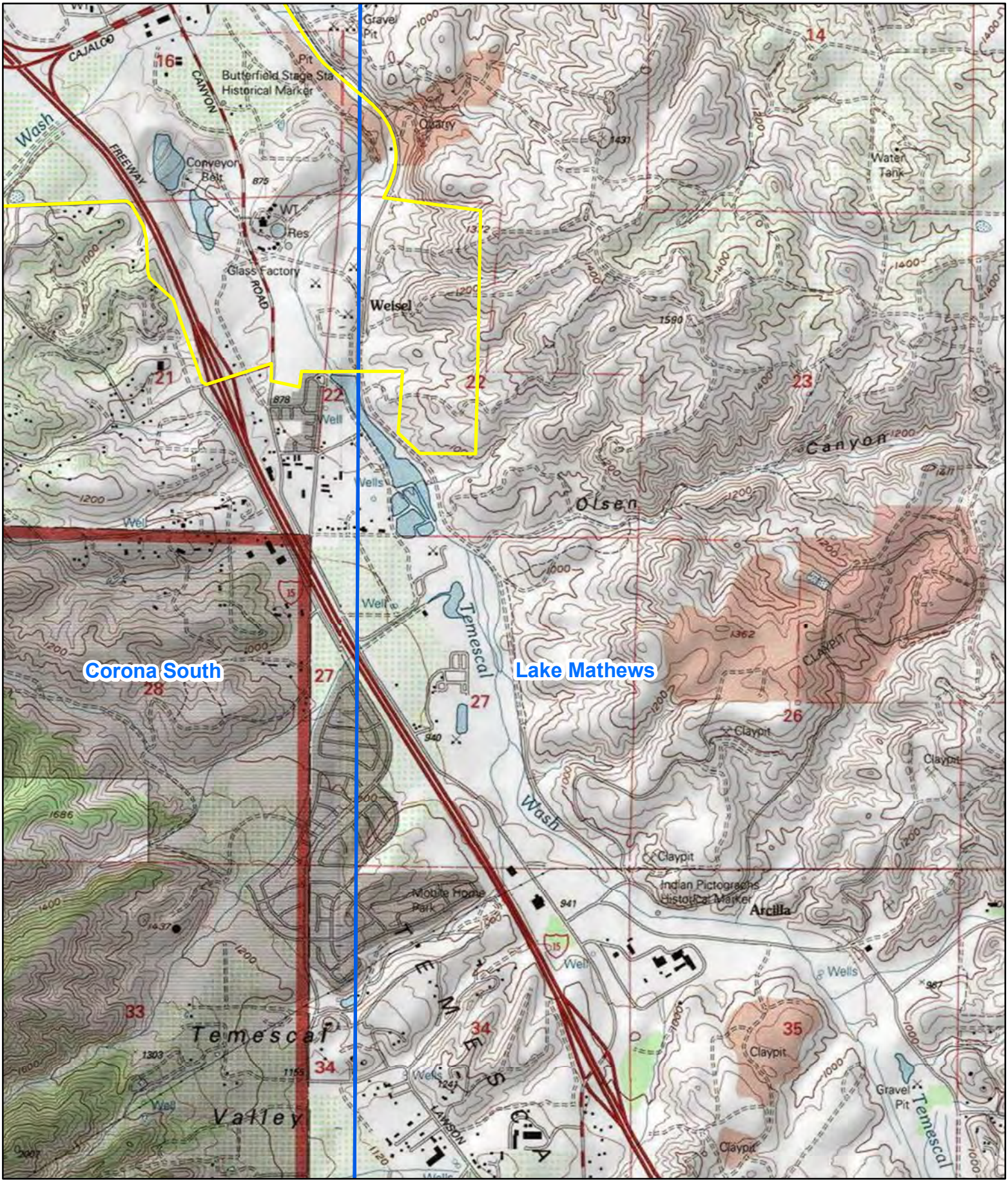


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RED TAIL ENVIRONMENTAL

RED TAIL ENVIRONMENTAL

April 6, 2020

Robert Dorame
Chairperson
Gabrielino Tonvoa Indians of California Tribal Council
PO Box 490, Bellflower, CA, 90707
562-761-6417
gtongva@gmail.com

Re: City of Corona Reclaimed Water Project, Riverside County, California

Dear Mr. Dorame,

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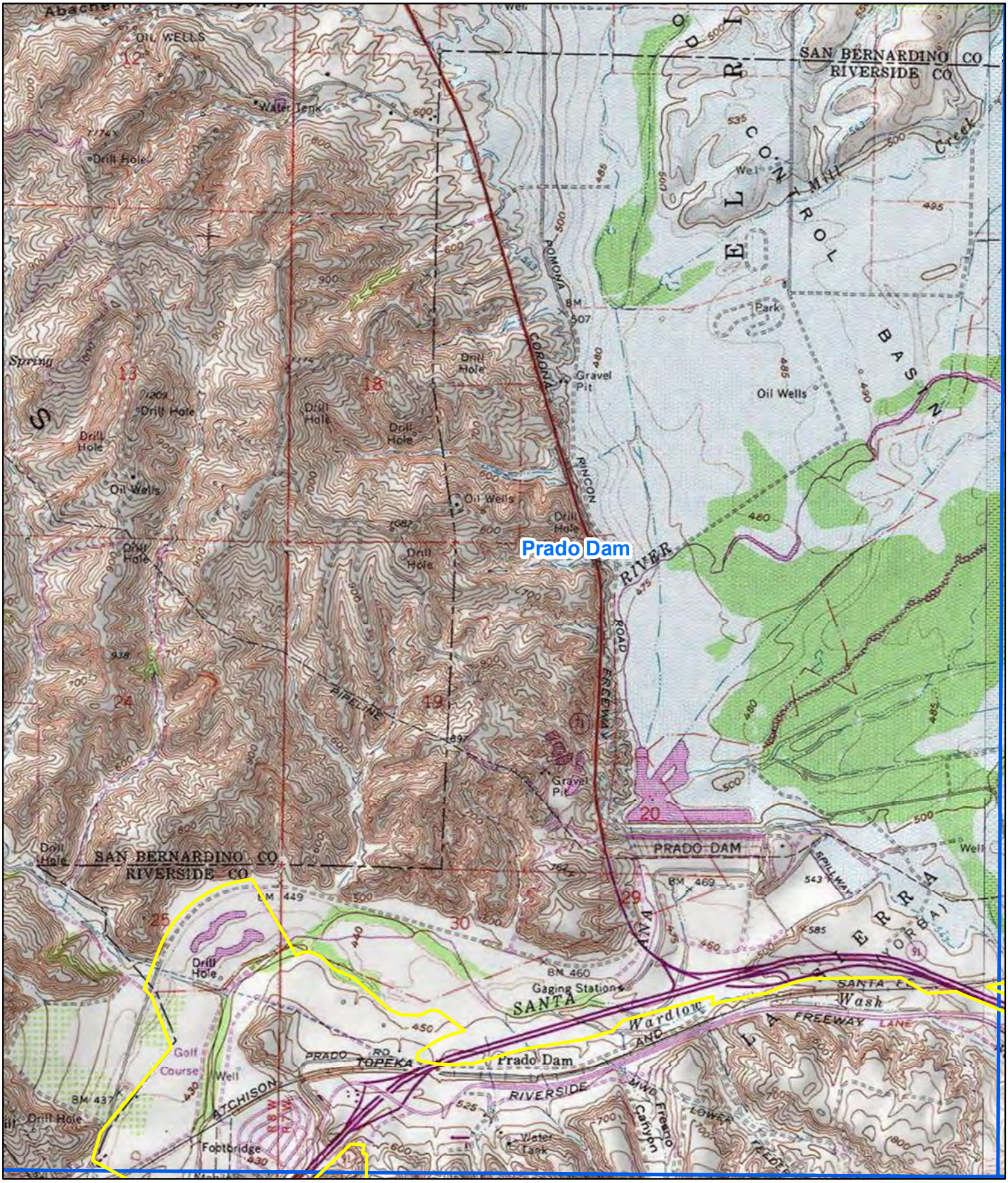


Figure 1. Project Area

RED TAIL ENVIRONMENTAL



Figure 1. Project Area



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Legend

- Project Area
- 7.5' USGS Quads

RED TAIL ENVIRONMENTAL



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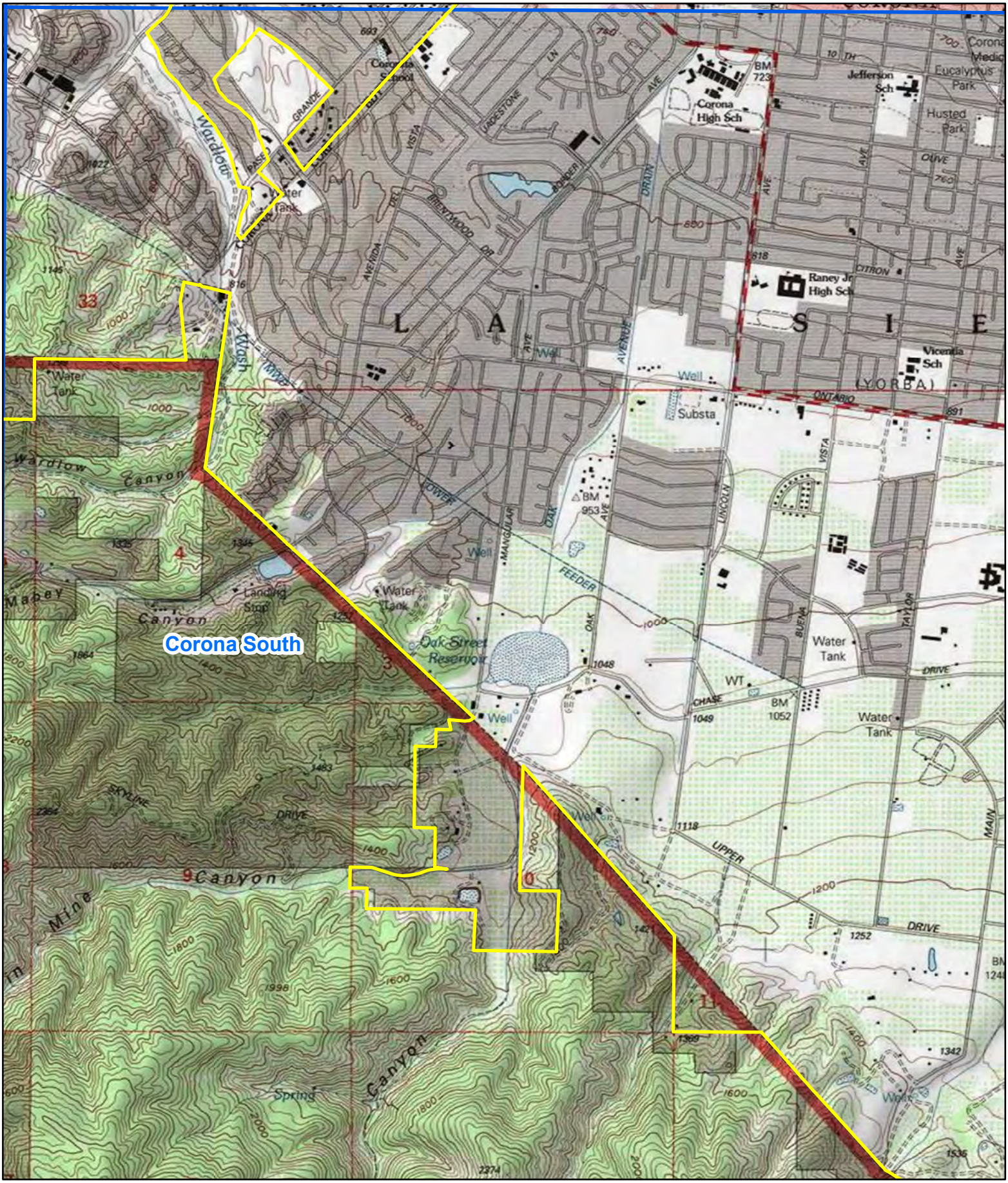


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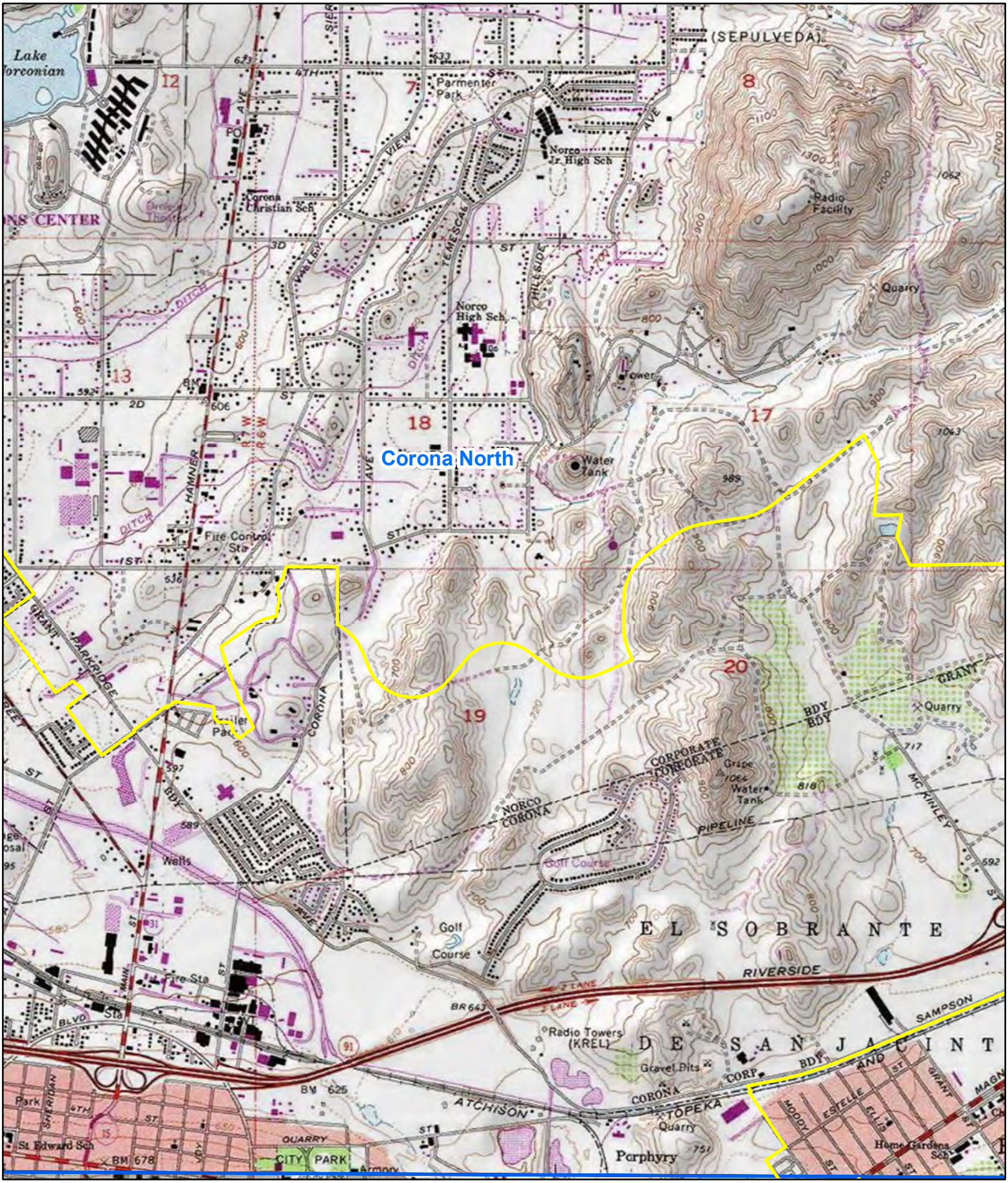
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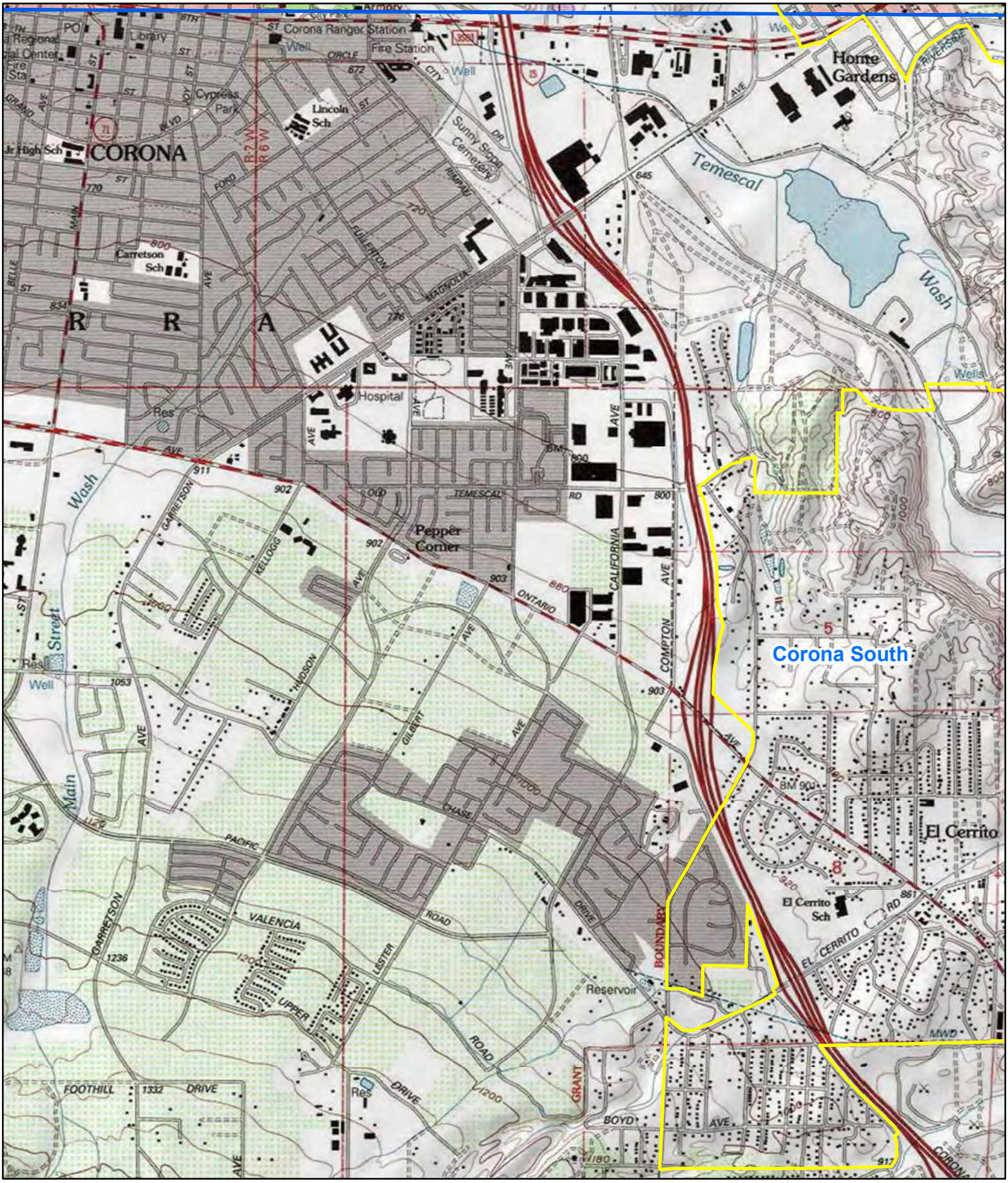


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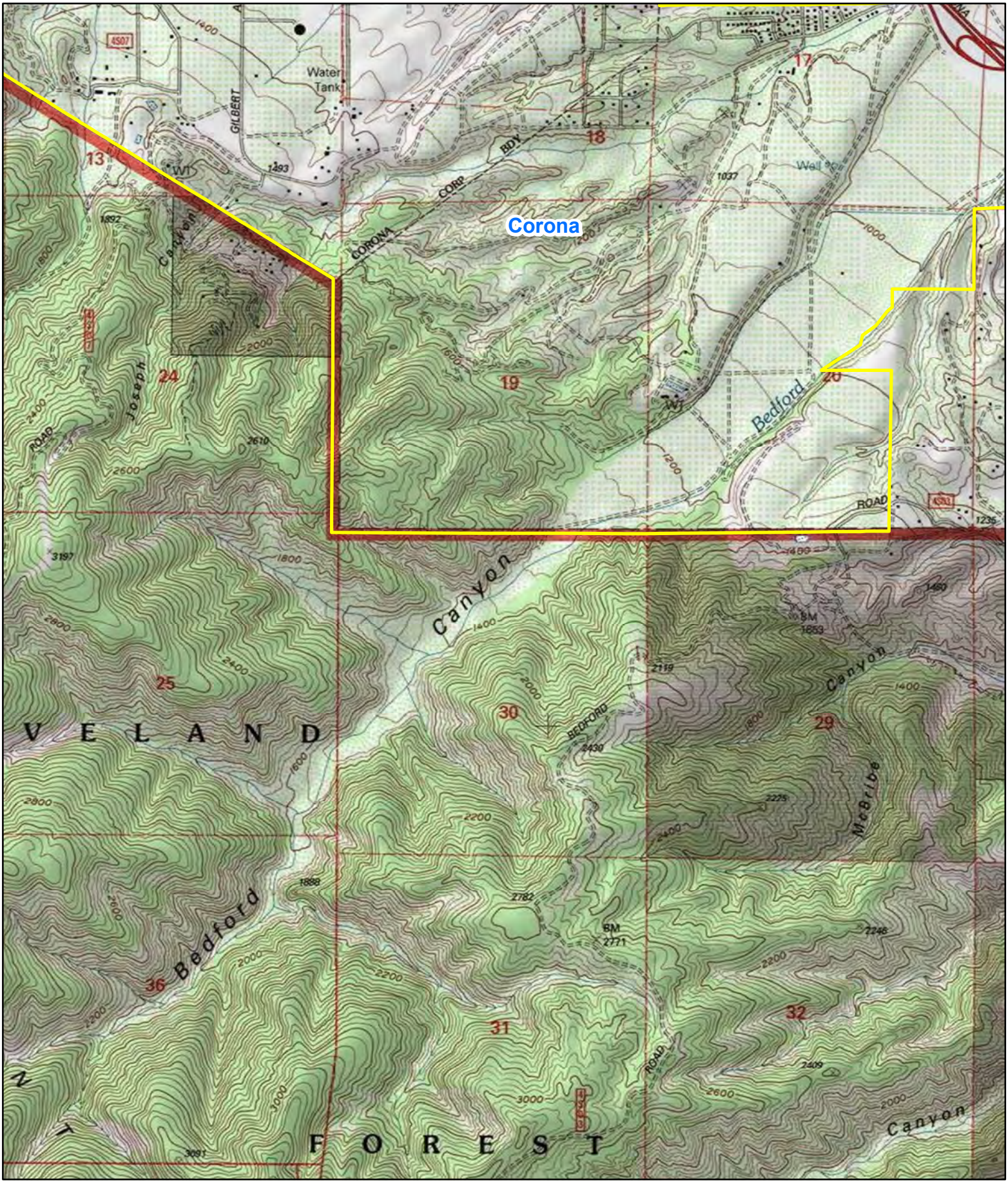


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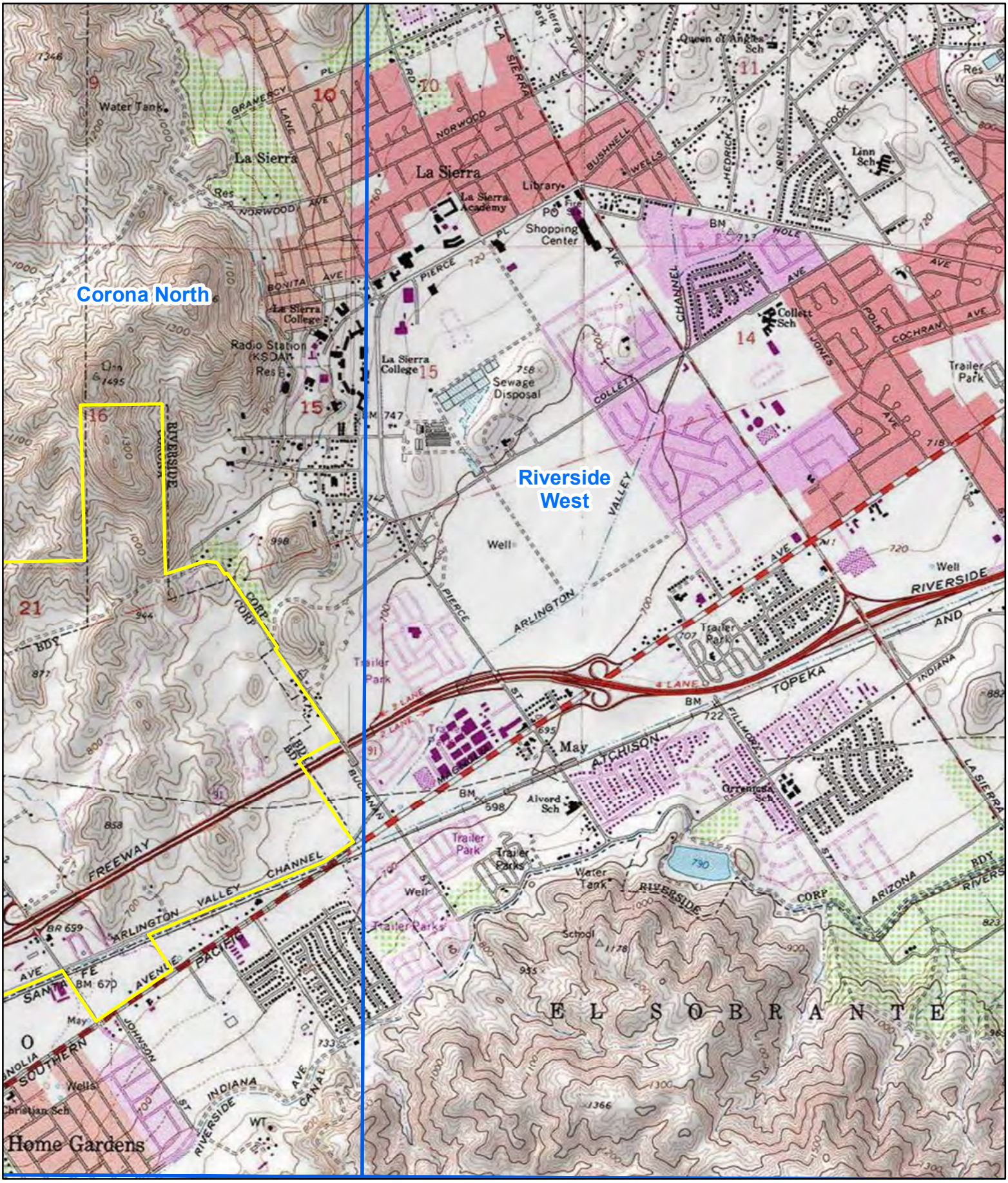


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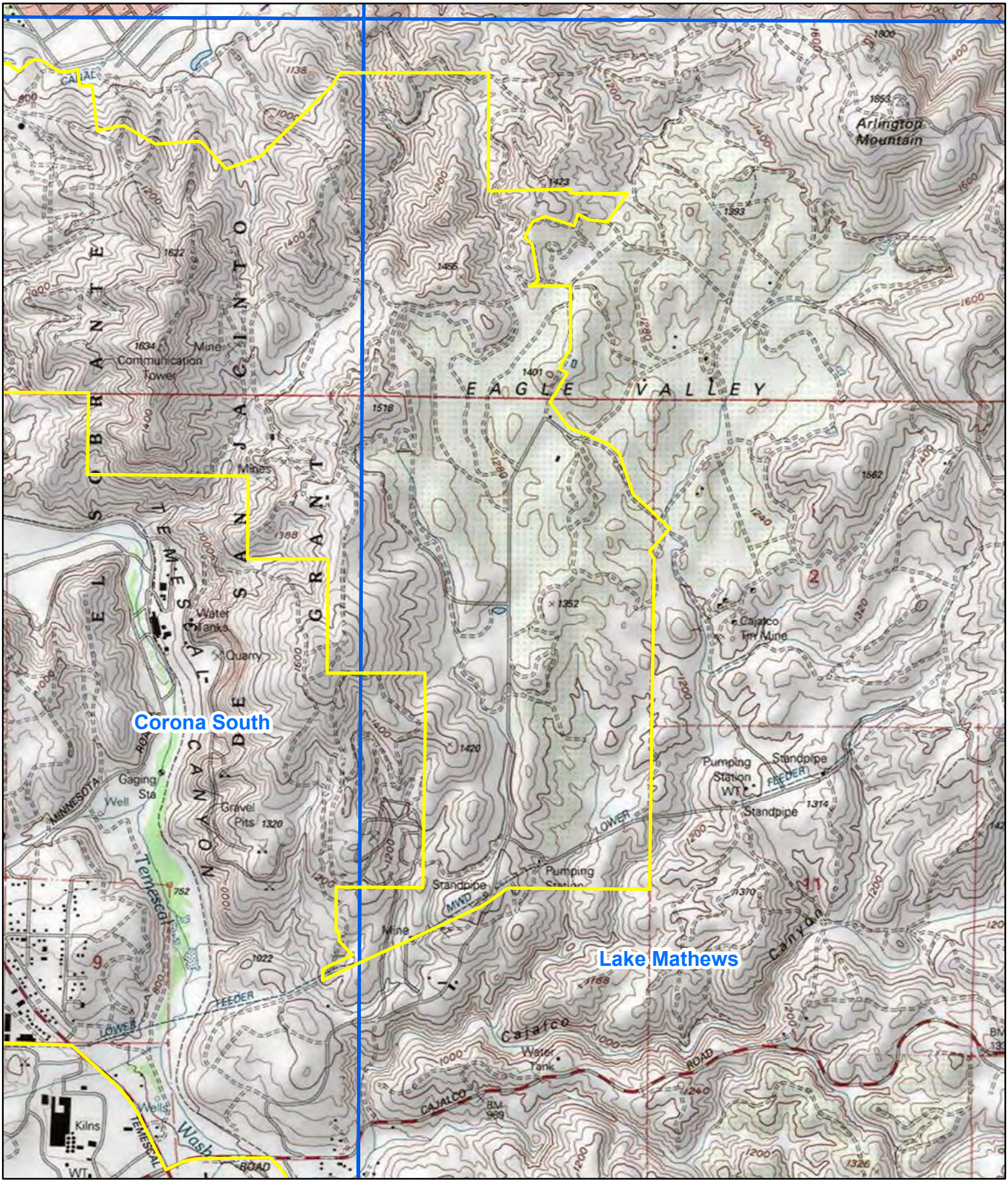
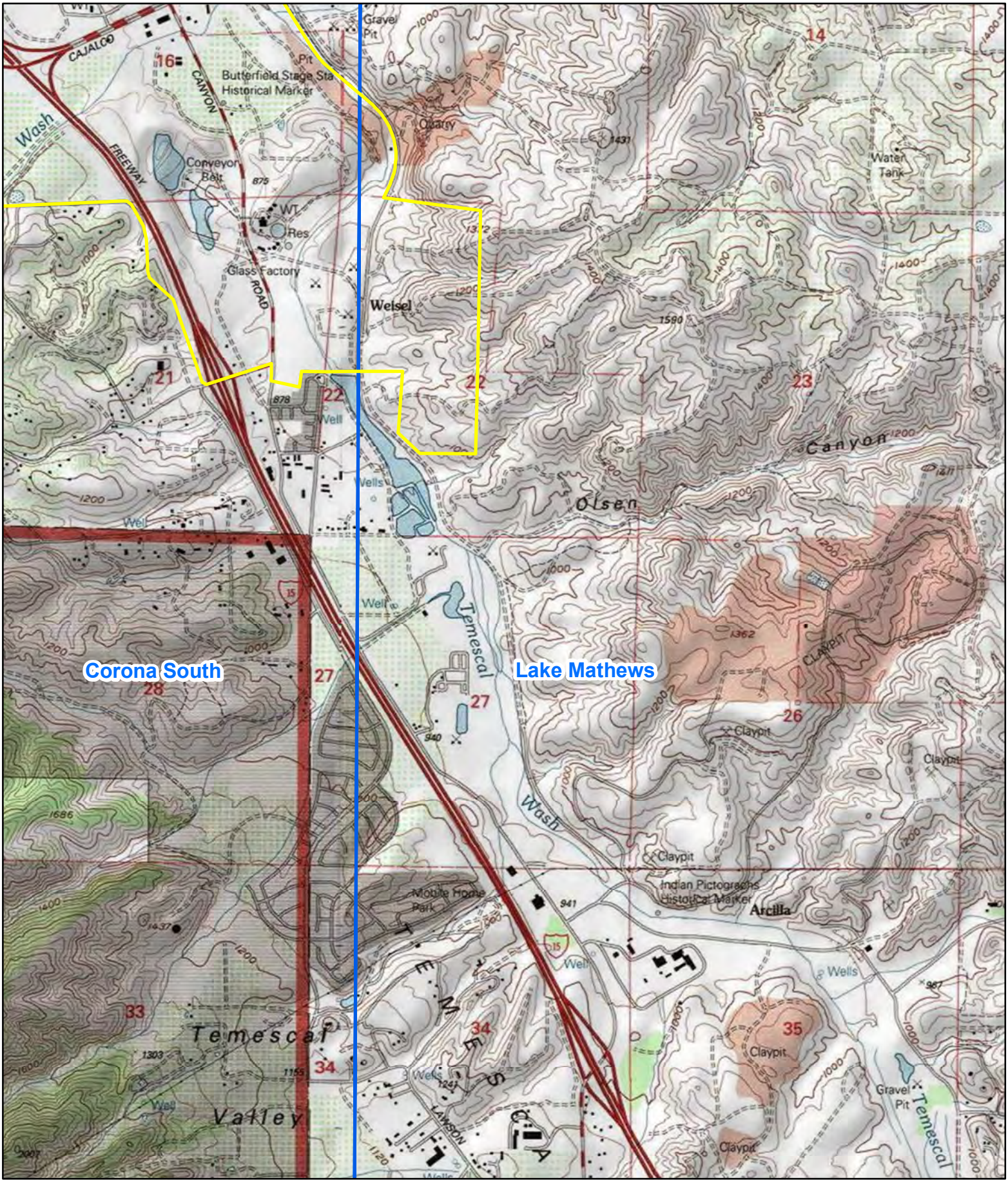


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RED TAIL ENVIRONMENTAL

RED TAIL ENVIRONMENTAL

April 6, 2020

Ralph Goff
Chairperson
Campo Band of Diegueno Mission Indians
36190 Church Road, Suite 1, Campo, CA, 91906
619-478-9046
rgoff@campo-nsn.gov

Re: City of Corona Reclaimed Water Project, Riverside County, California

Dear Mr. Goff,

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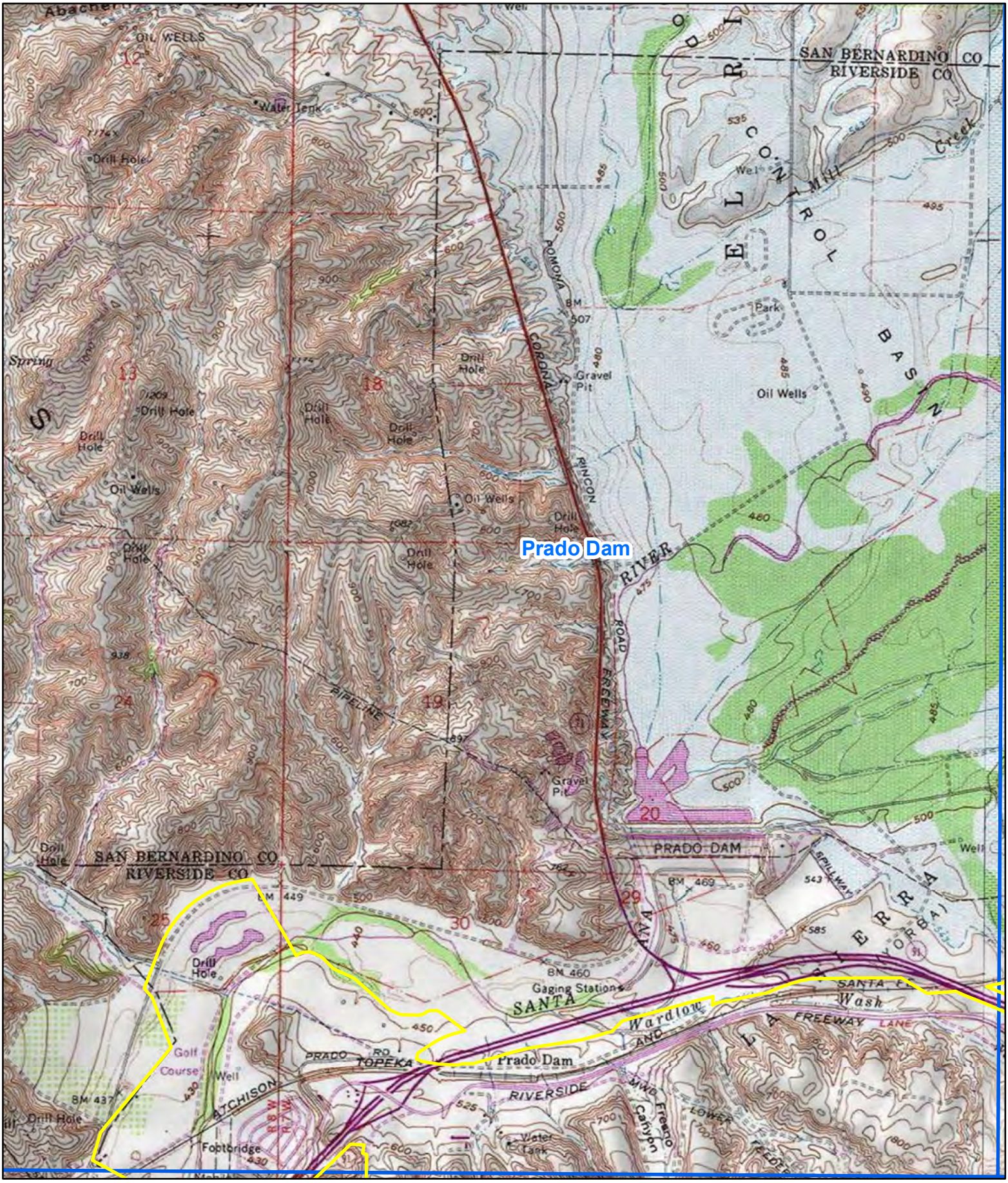


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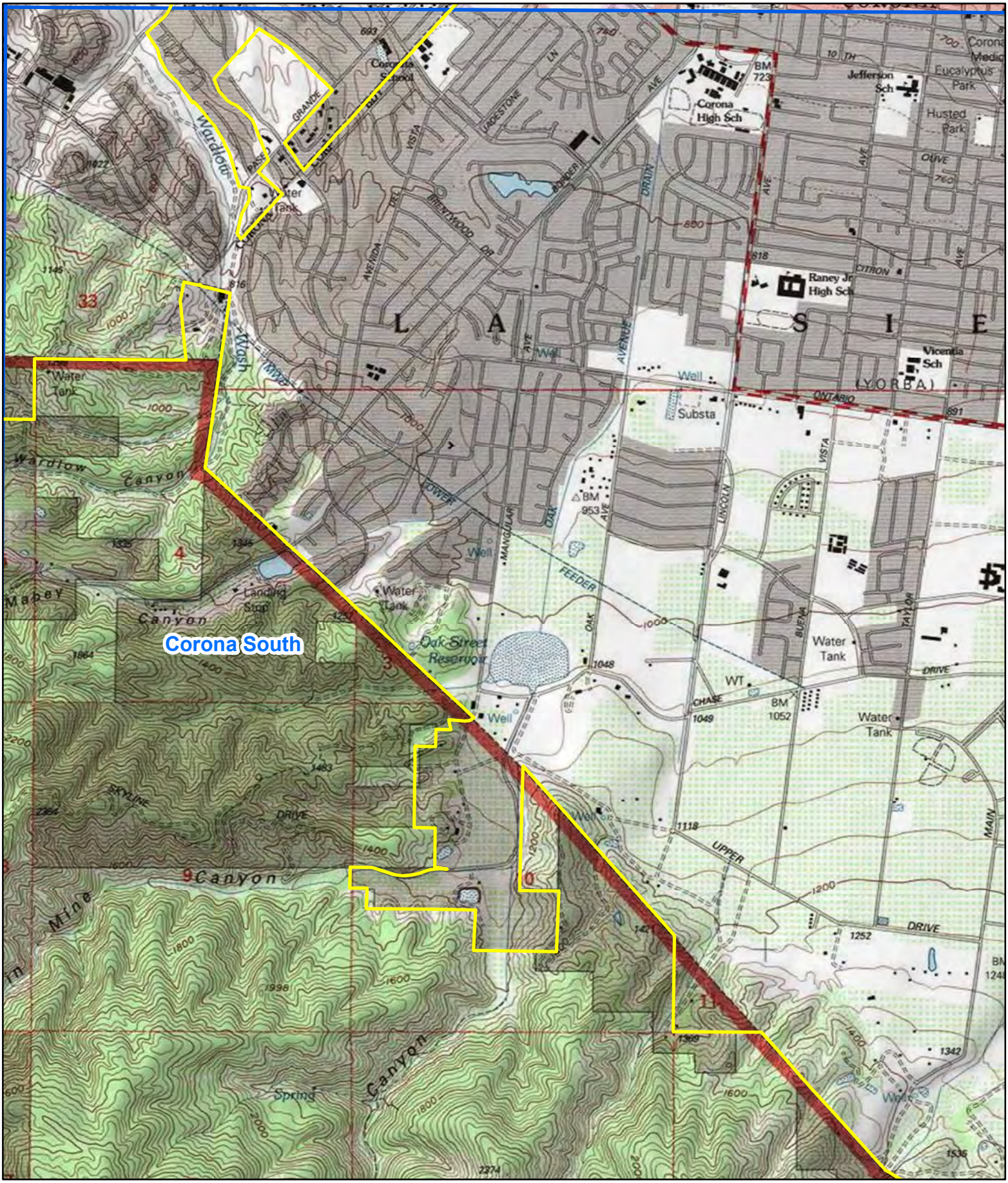


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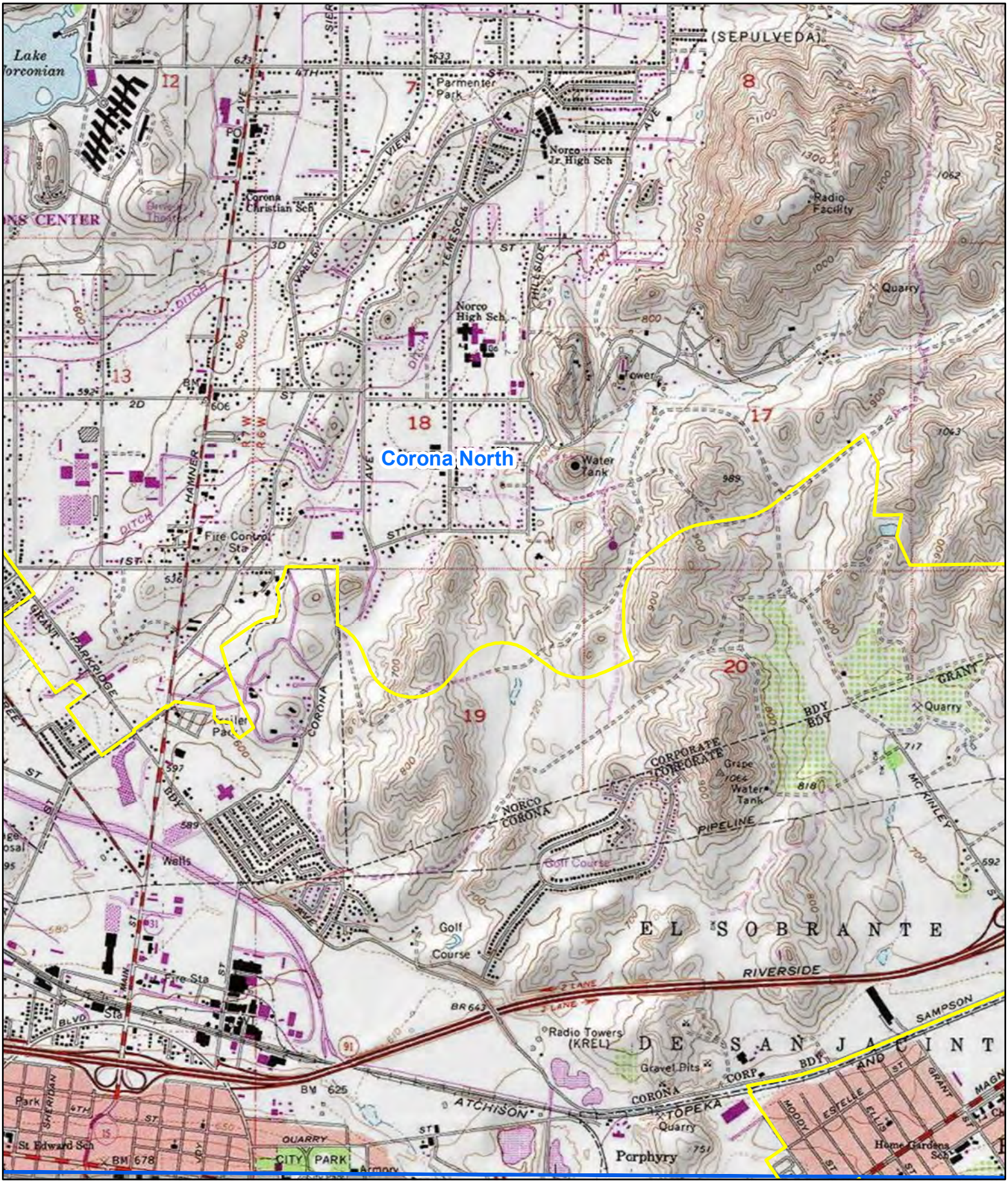
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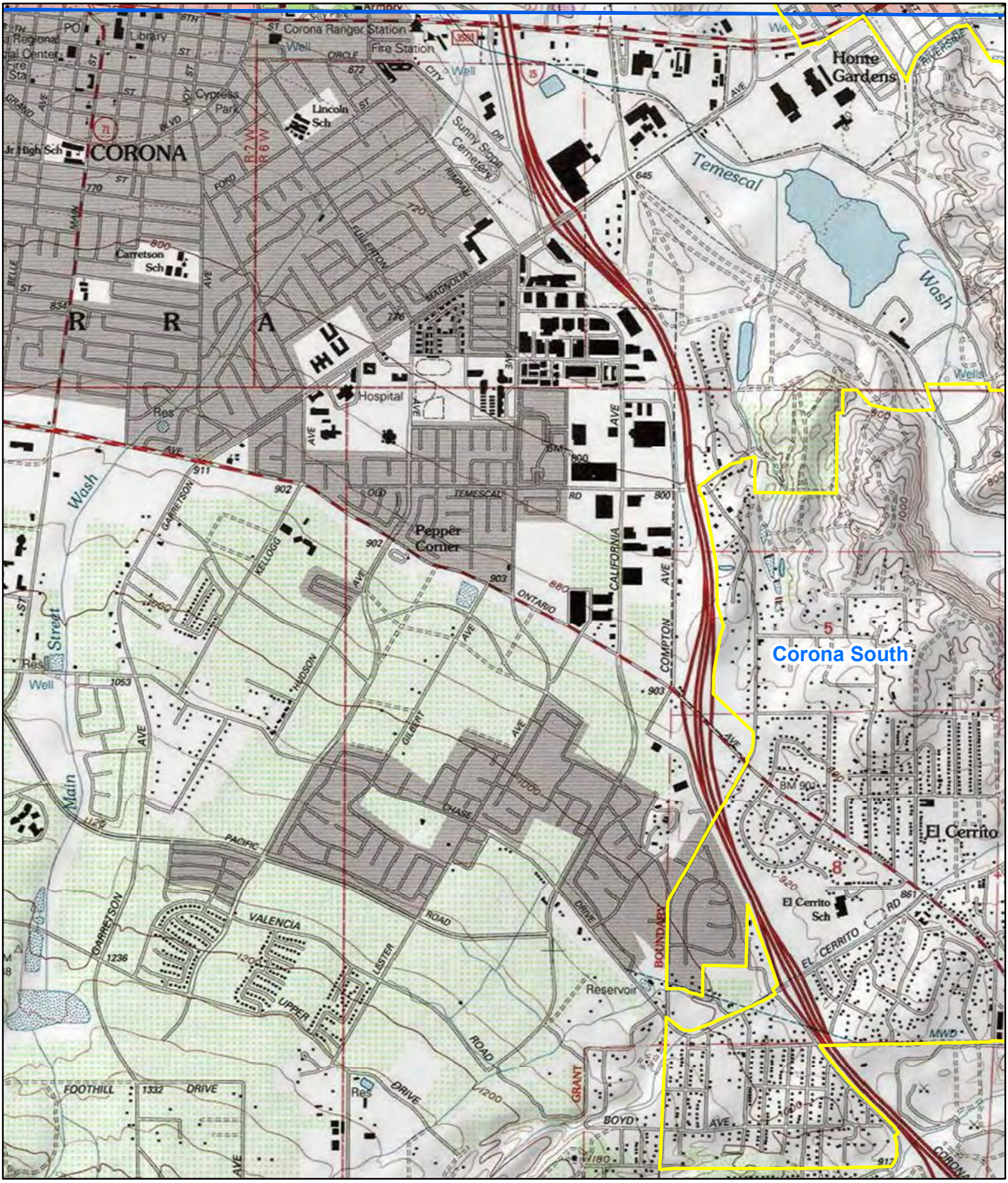


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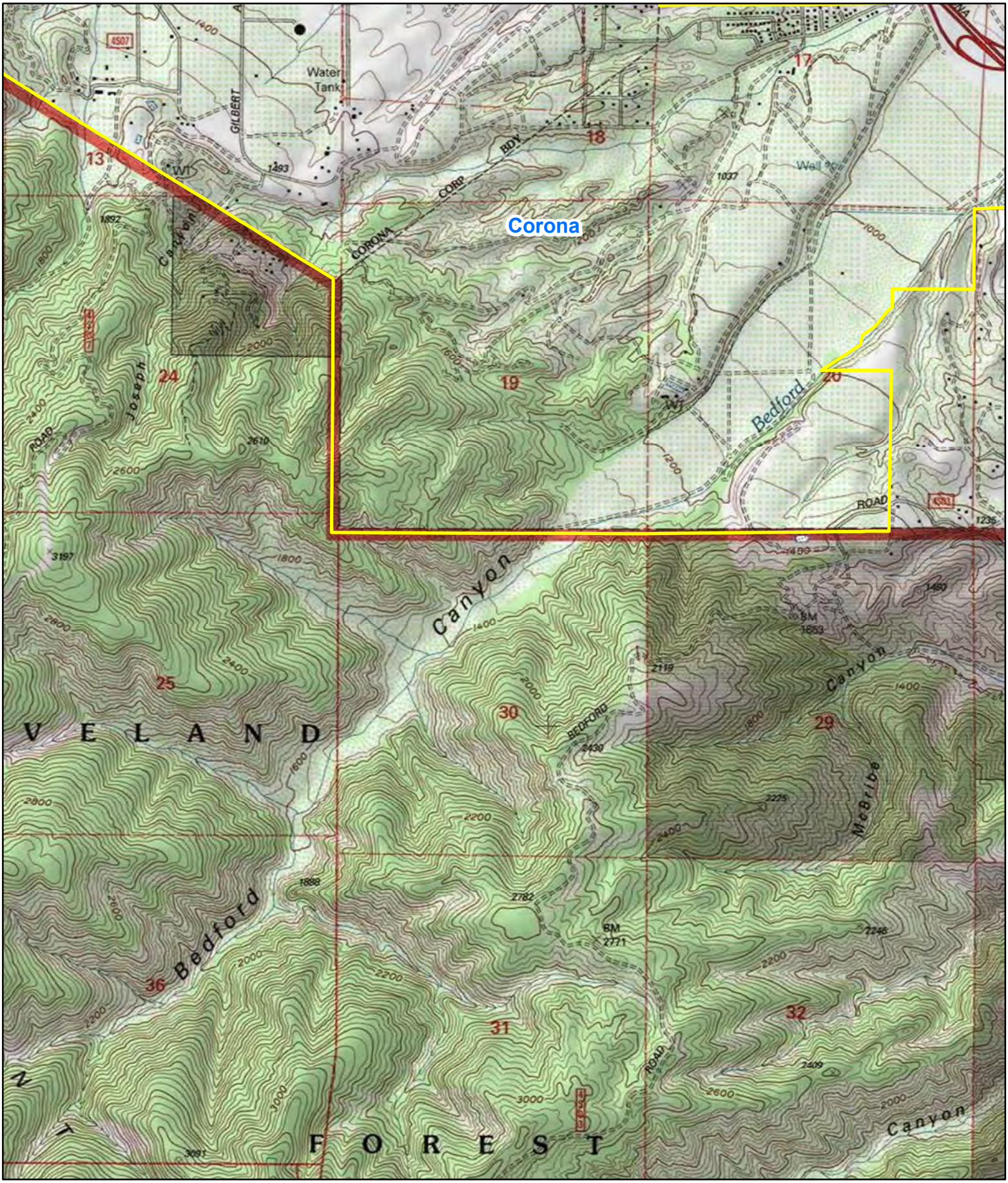
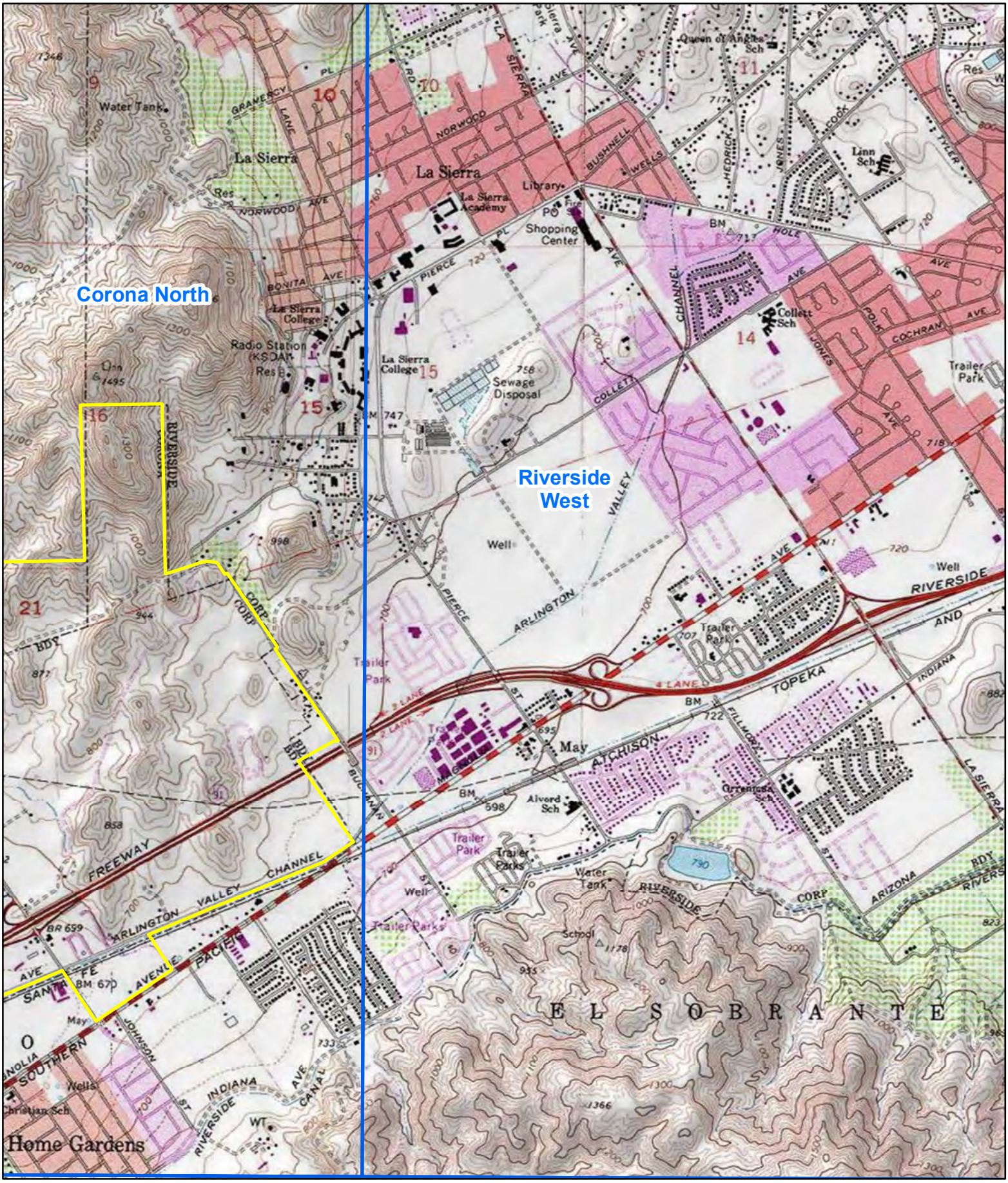


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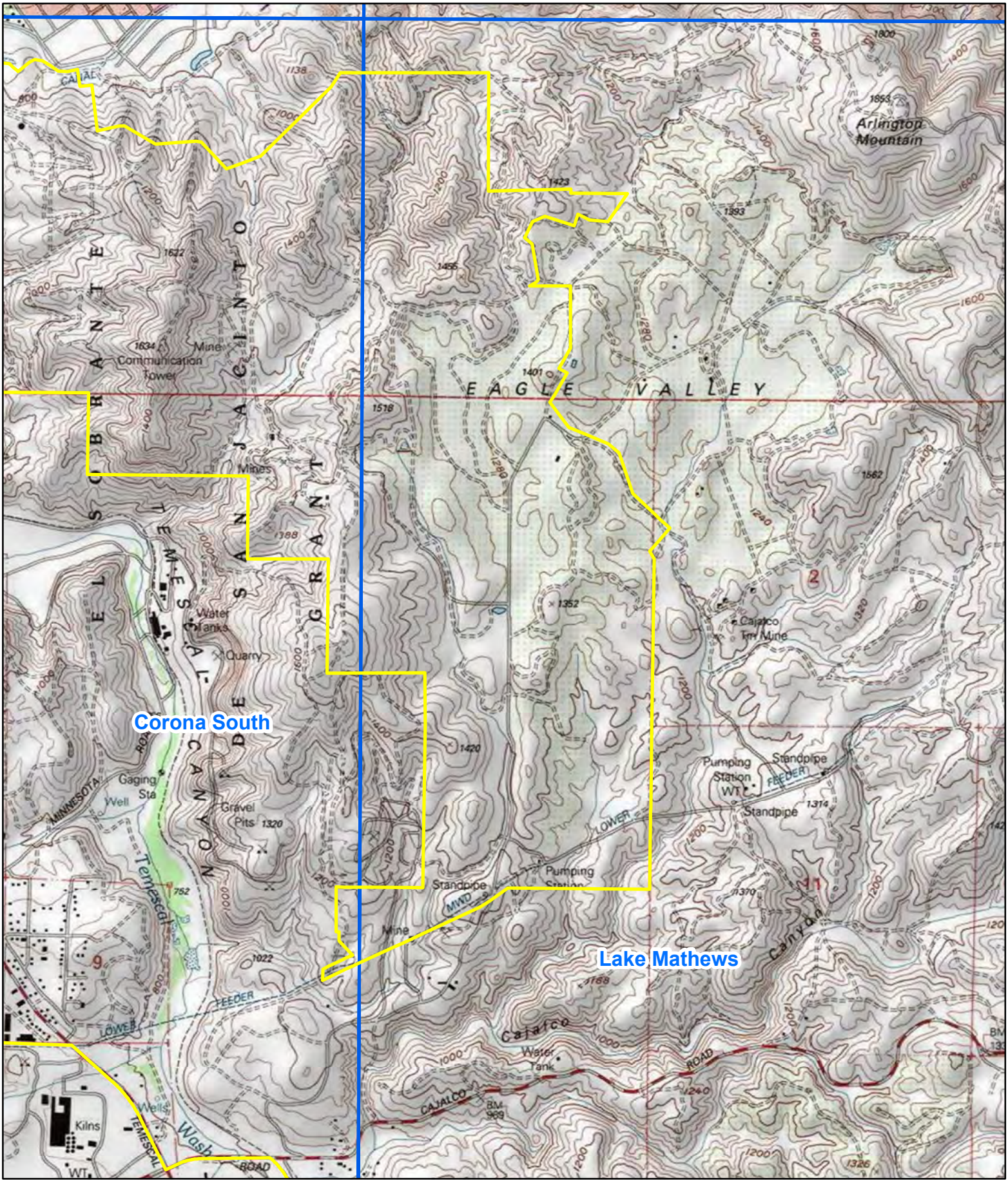
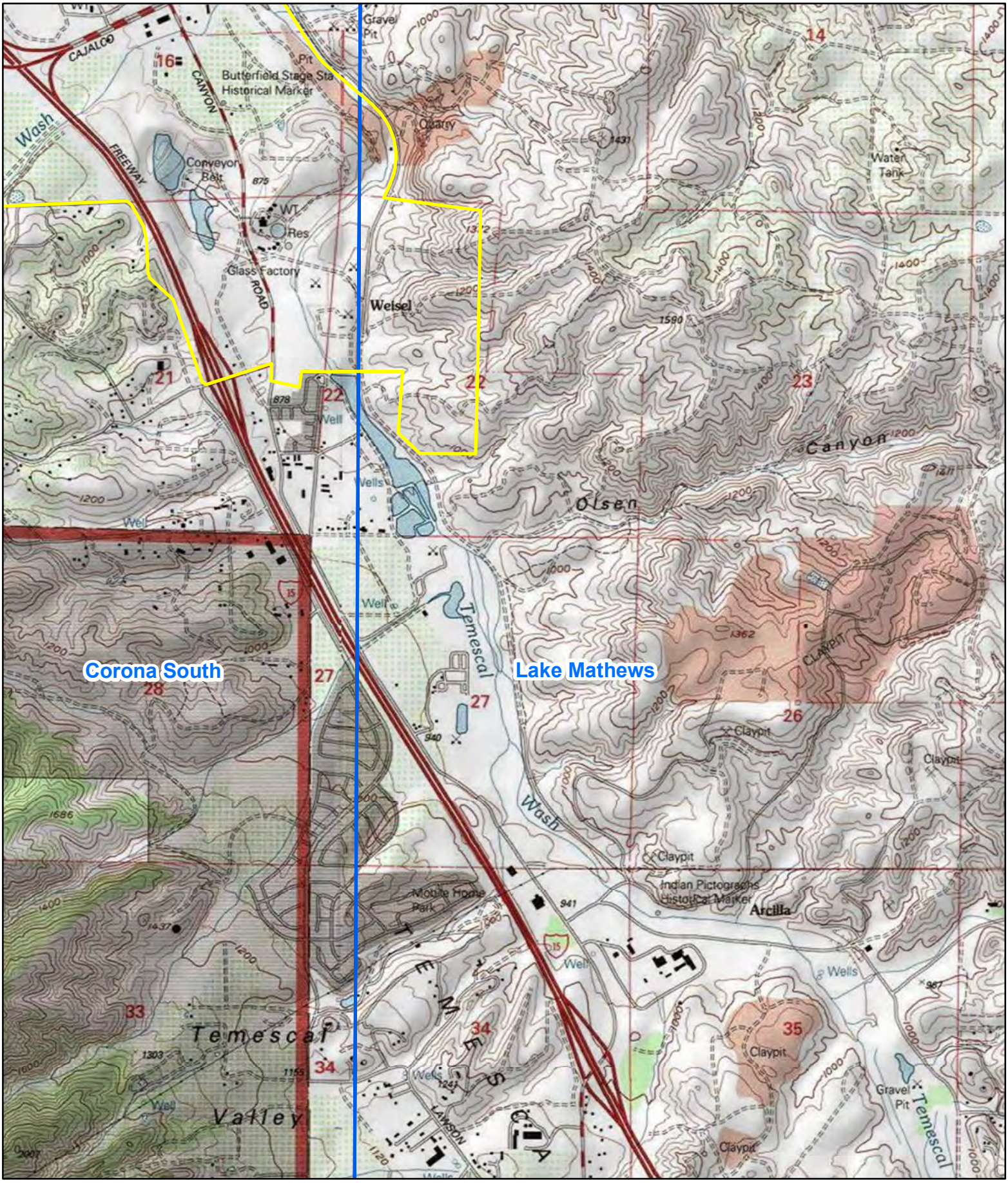


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RED TAIL ENVIRONMENTAL

RED TAIL ENVIRONMENTAL

April 6, 2020

Robert Martin
Chairperson
Morongo Band of Mission Indians
12700 Pumarra Road, Banning, CA, 92220
951-849-8807
dtorres@morongo-nsn.gov

Re: City of Corona Reclaimed Water Project, Riverside County, California

Dear Mr. Martin,

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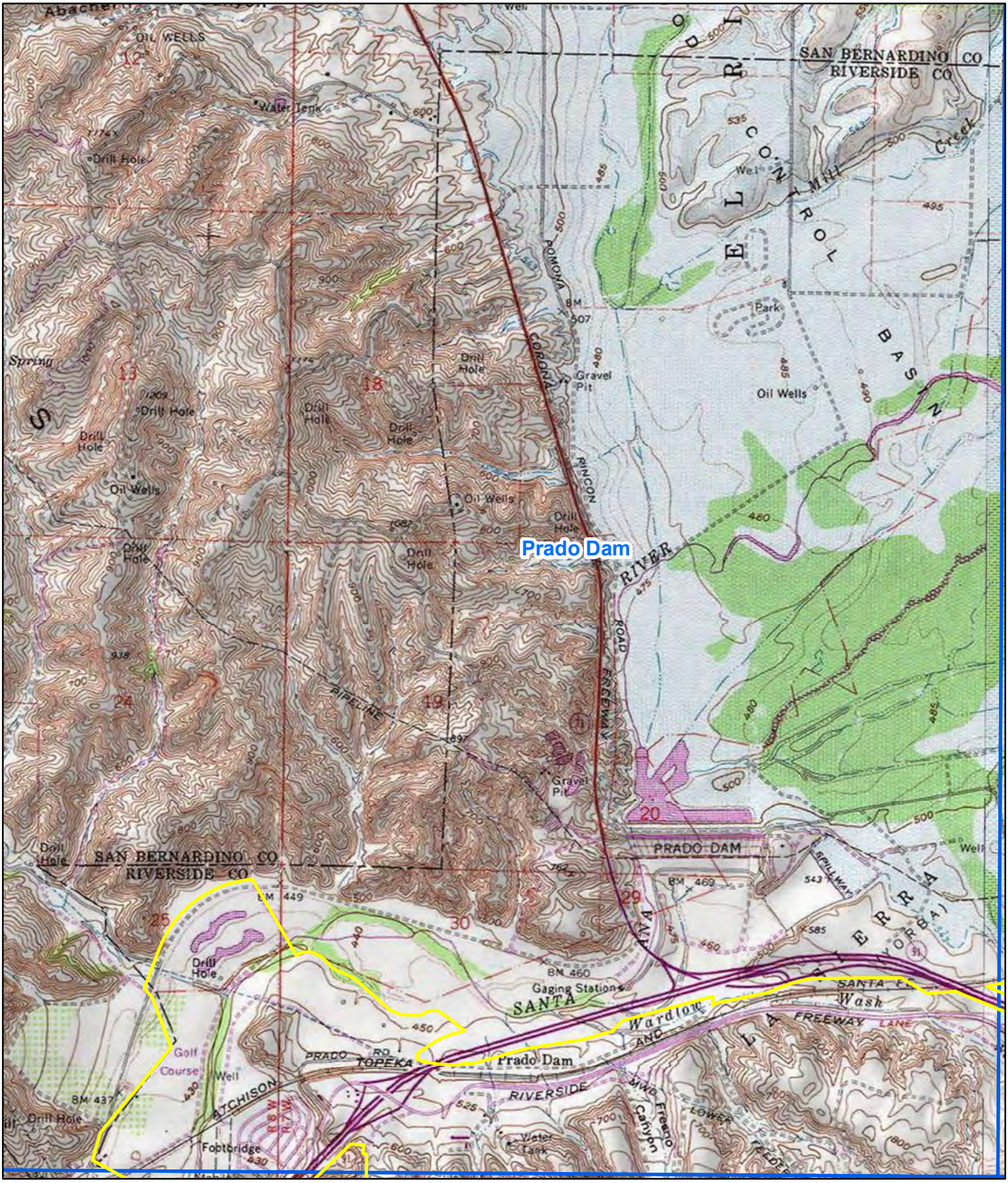


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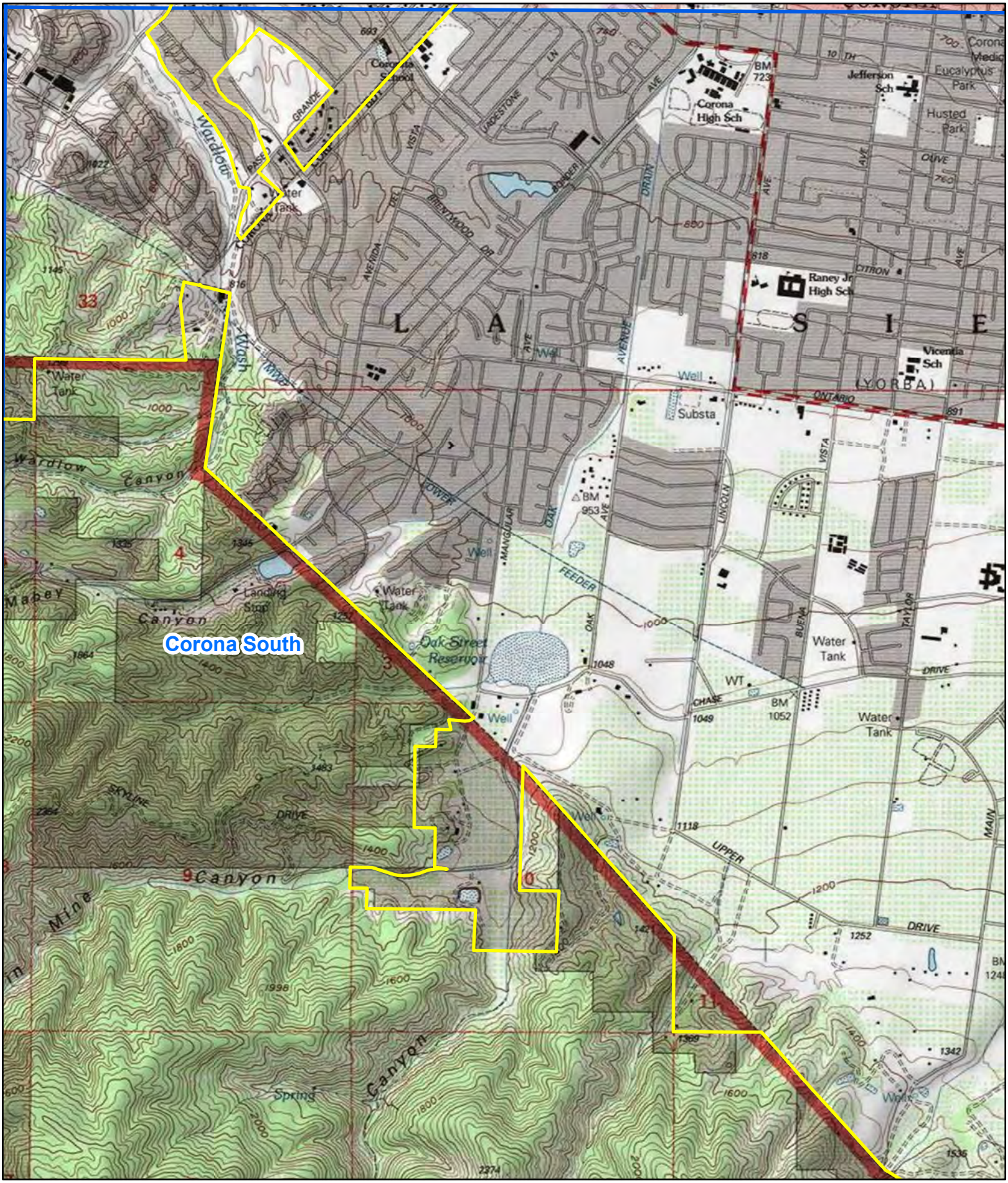


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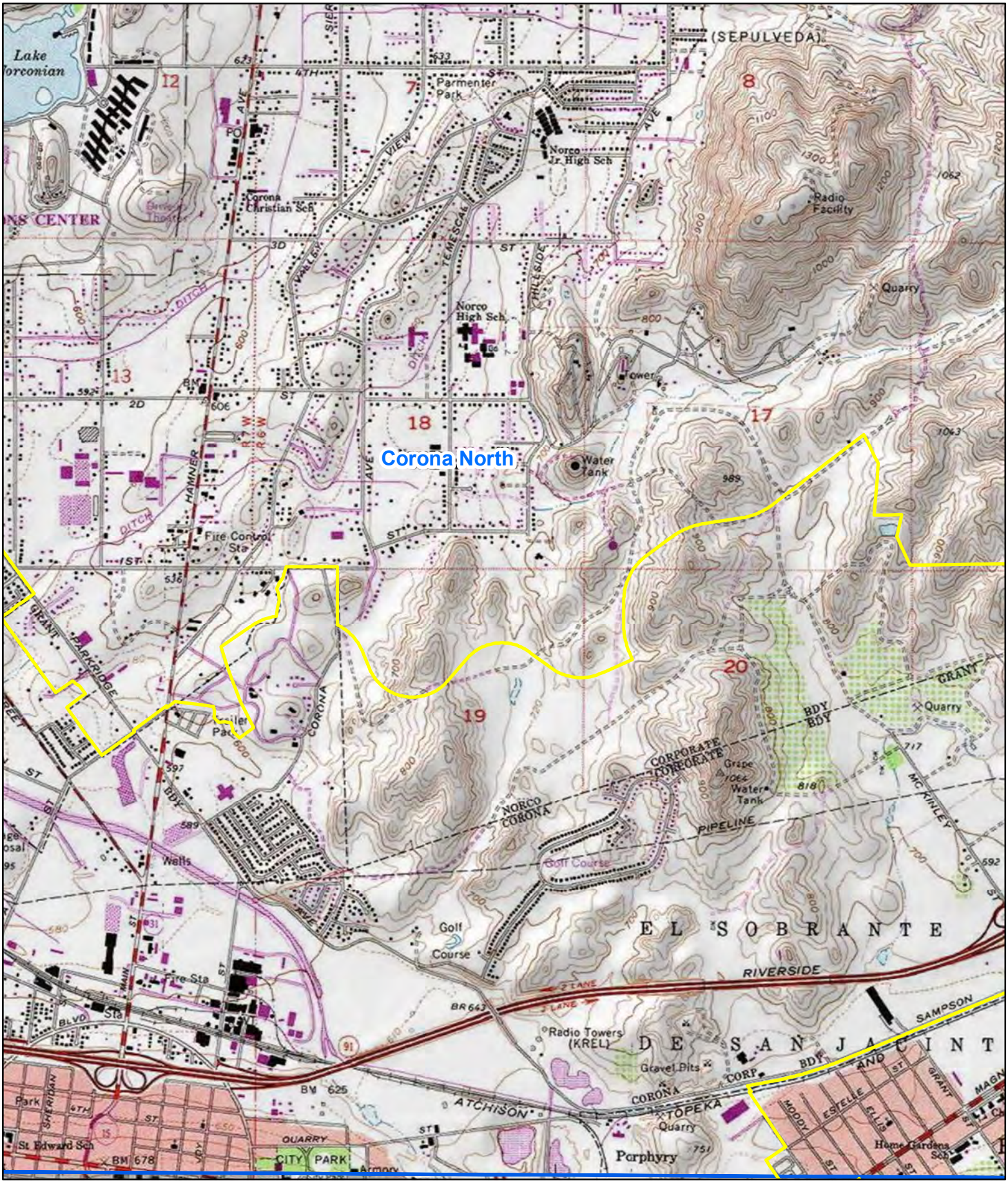
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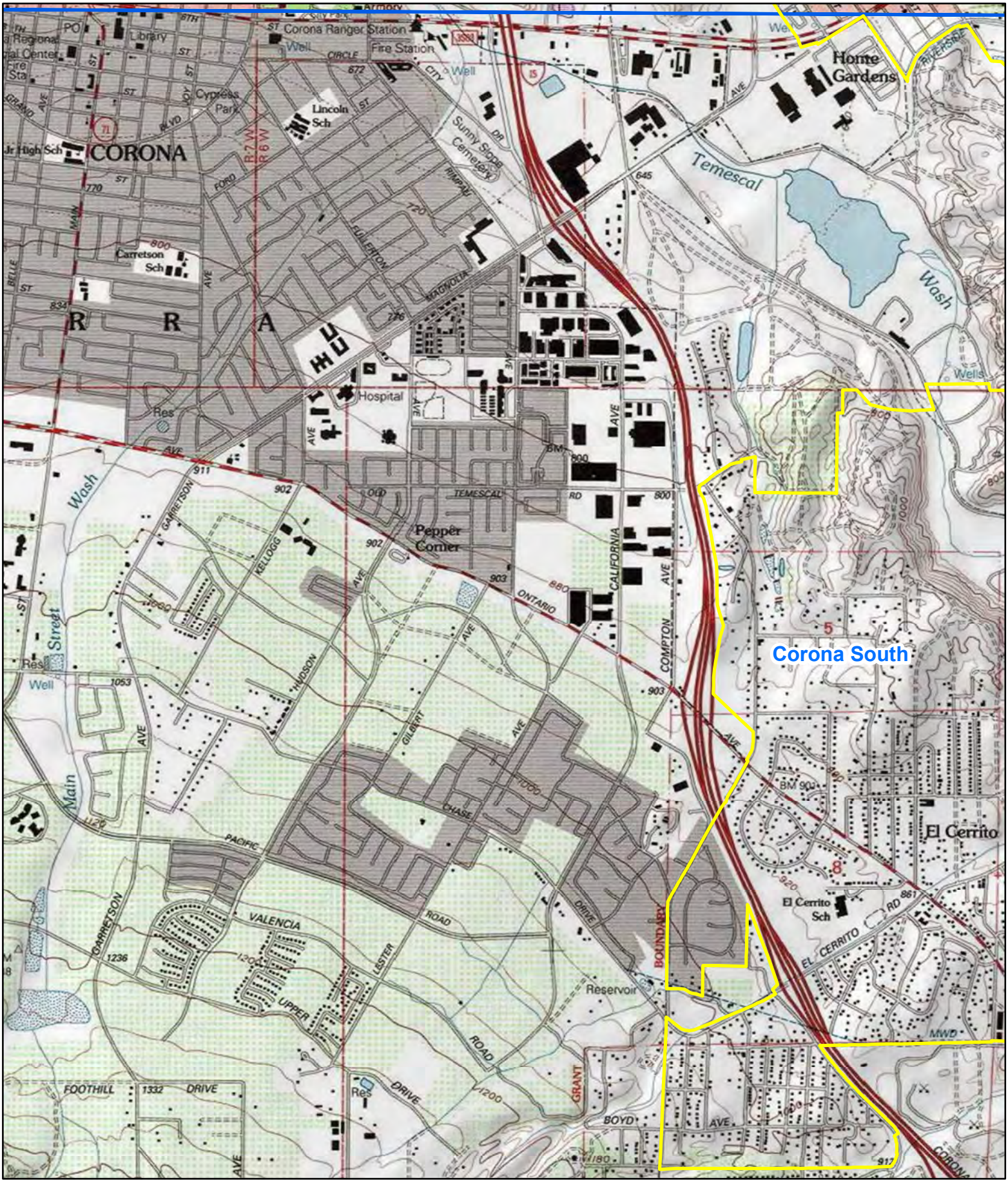


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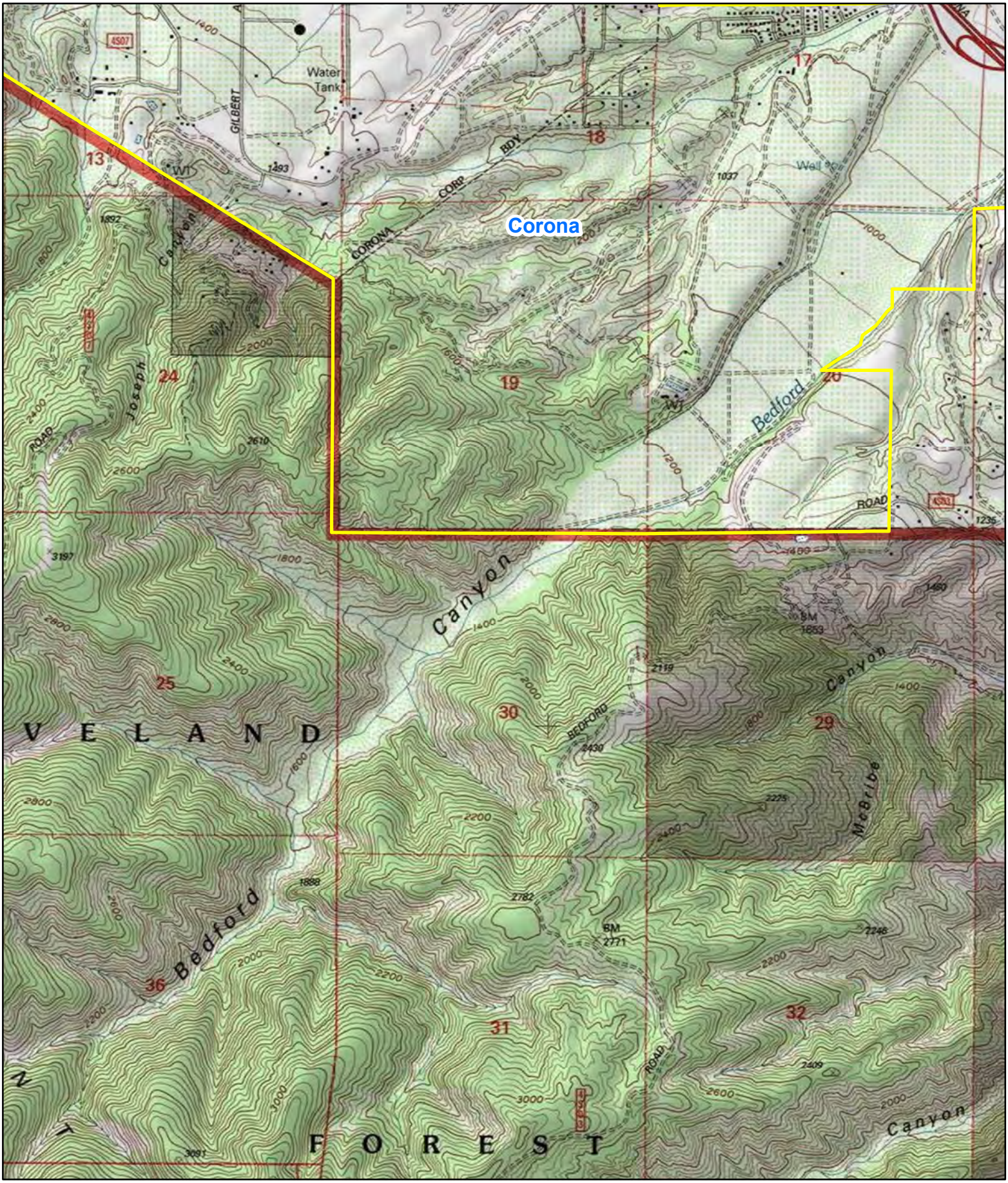


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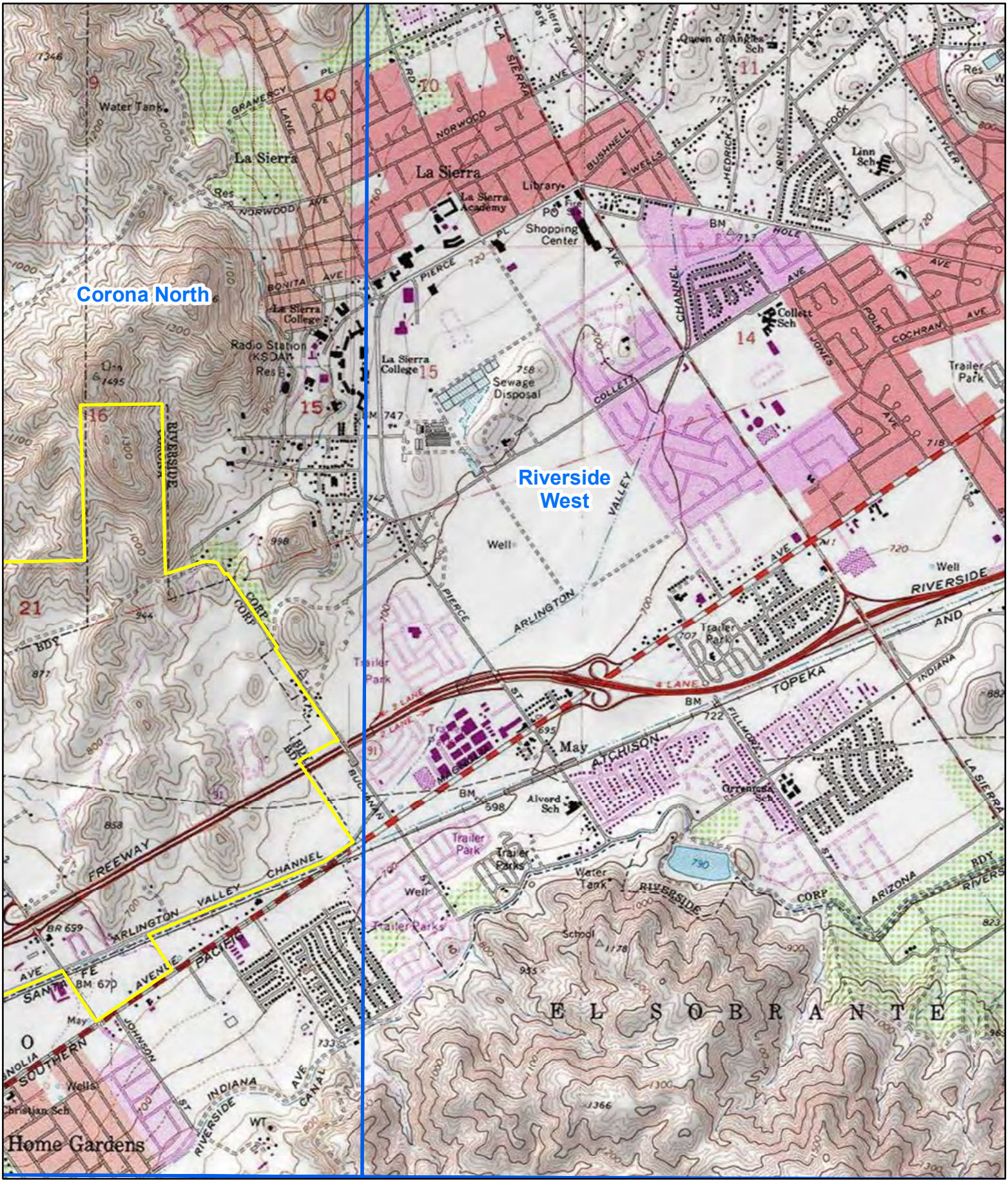


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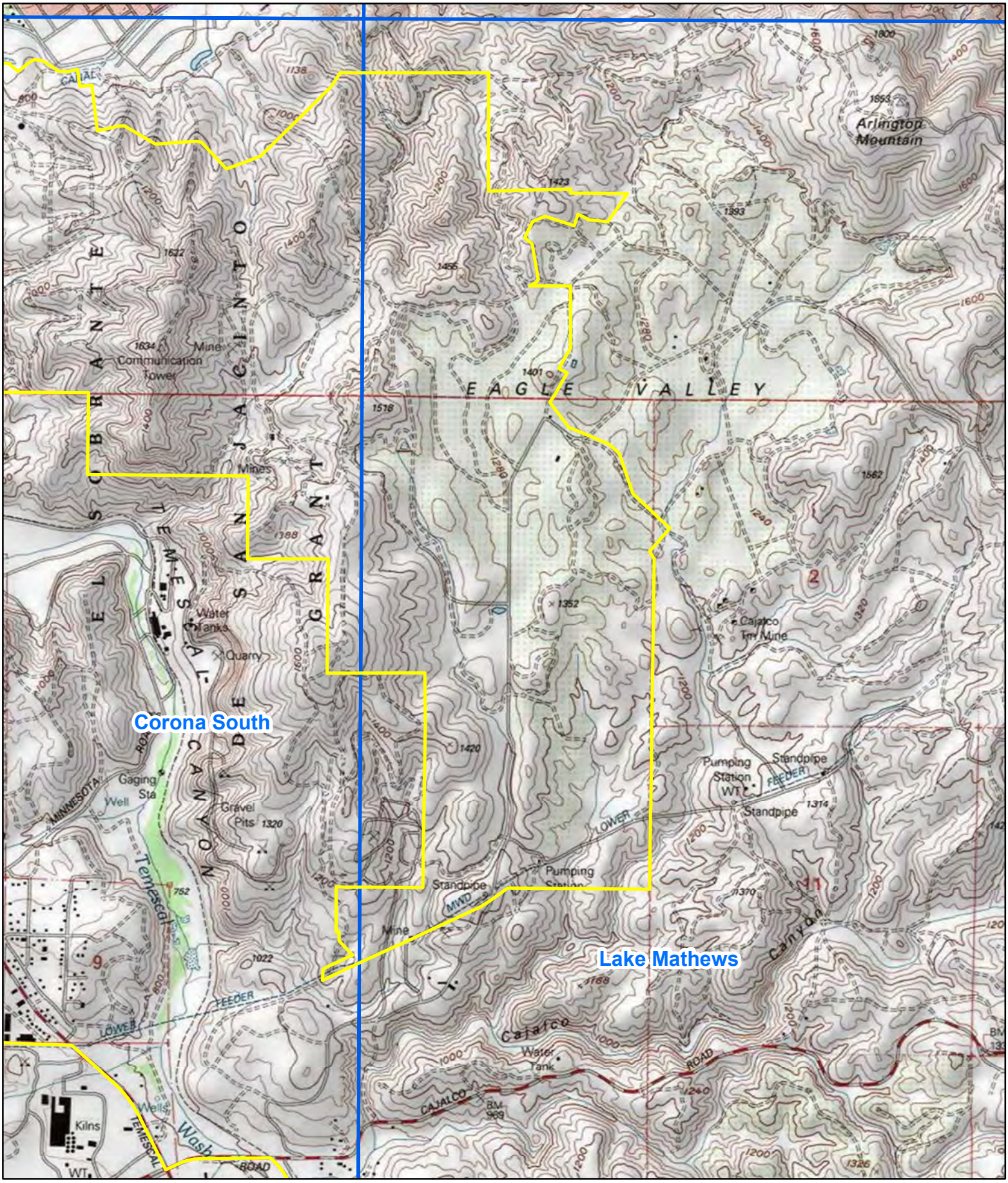
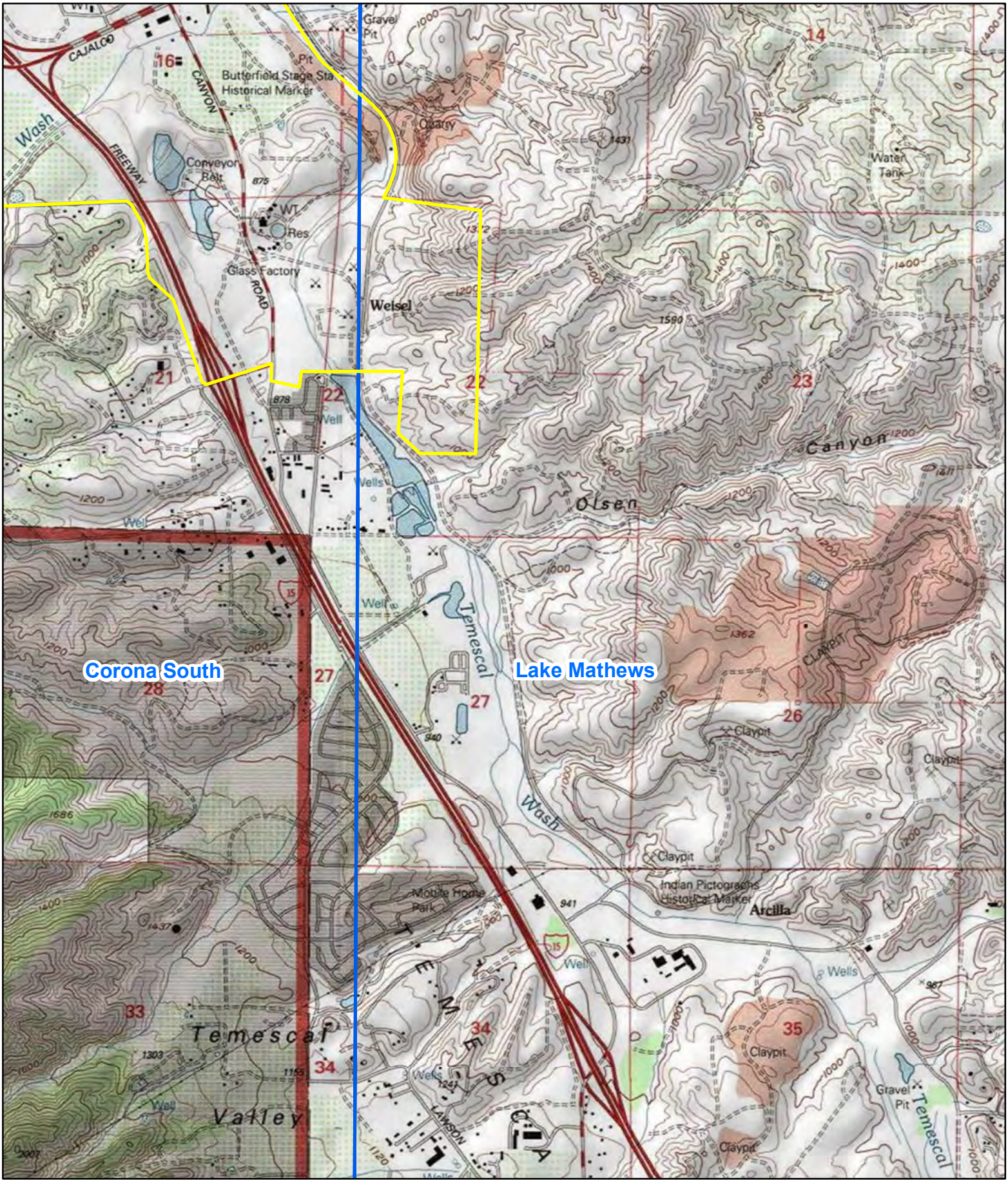


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RED TAIL ENVIRONMENTAL

April 6, 2020

Robert Pinto
Chairperson
Ewiiaapaayp Tribe
4054 Willows Road, Alpine, CA, 91901
619-445-6315
wmicklin@leaningrock.net

Re: City of Corona Reclaimed Water Project, Riverside County, California

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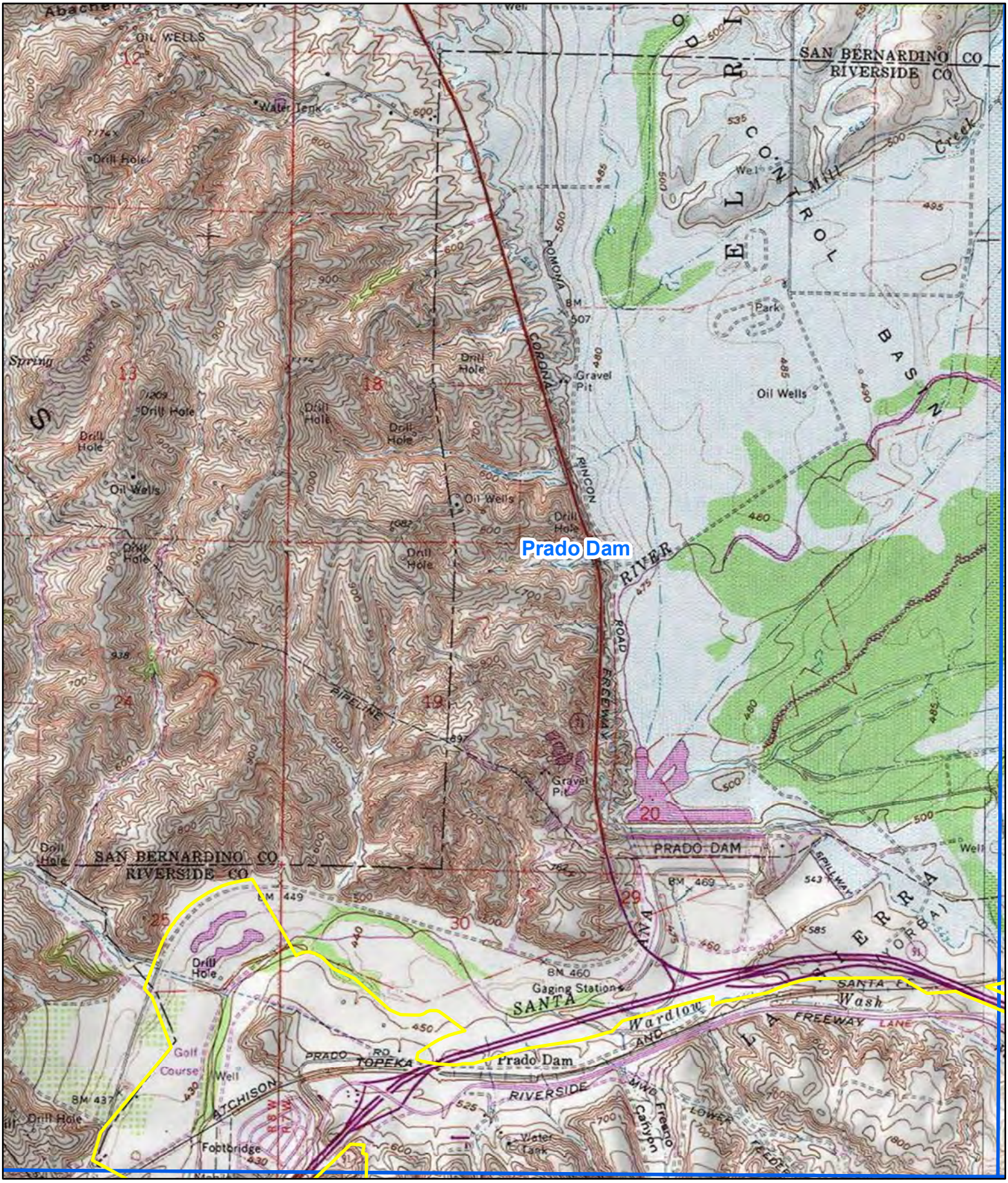


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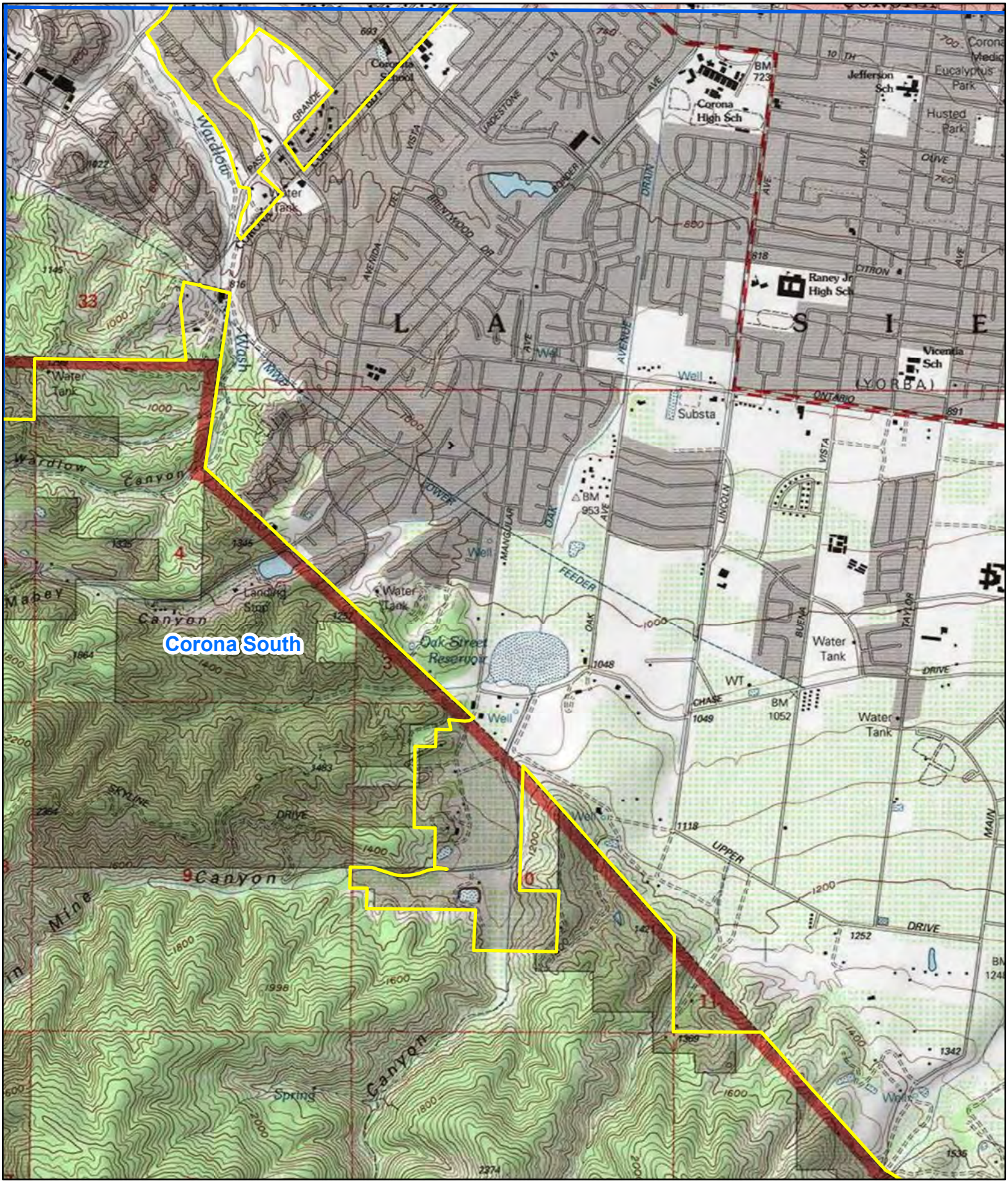


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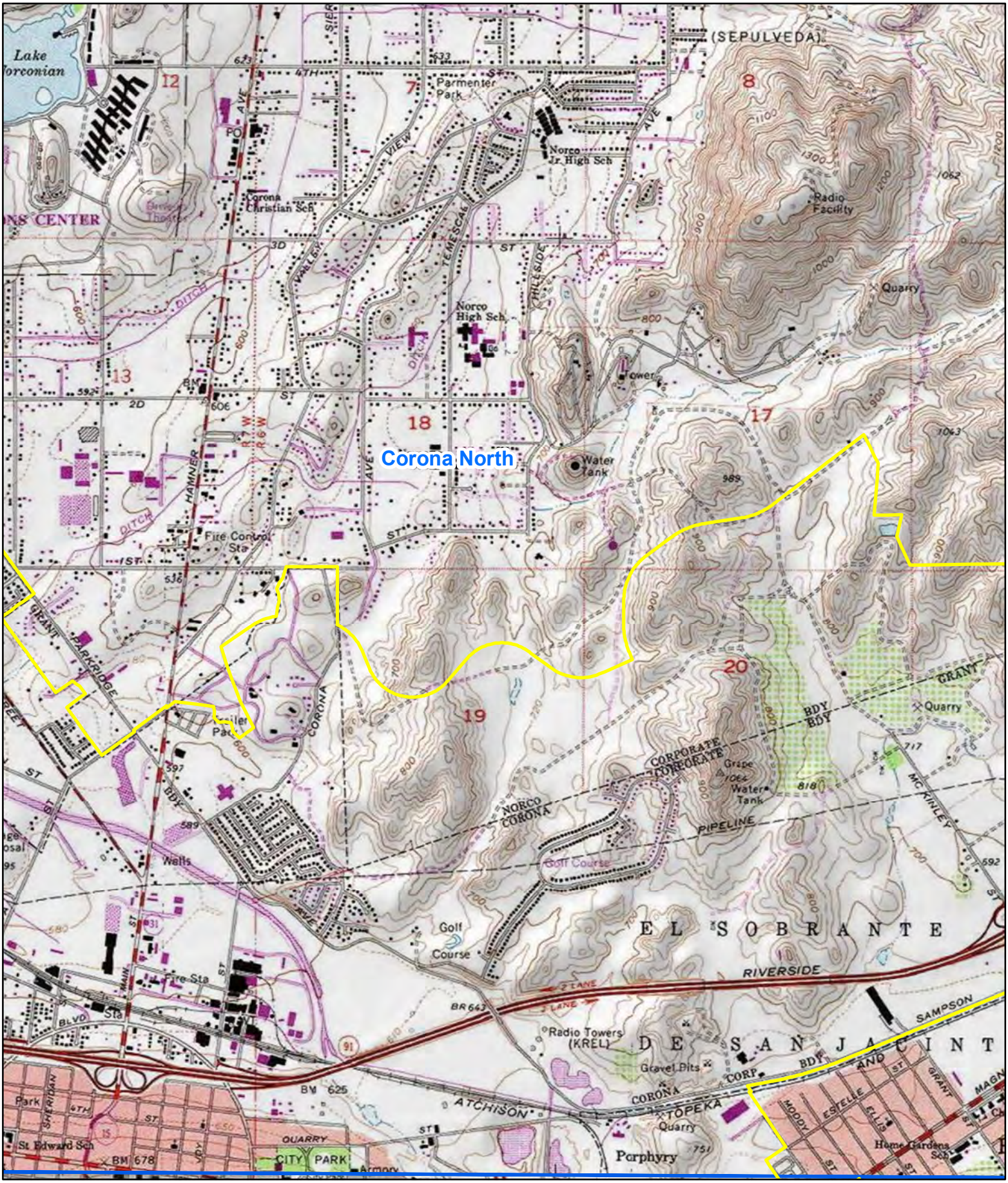
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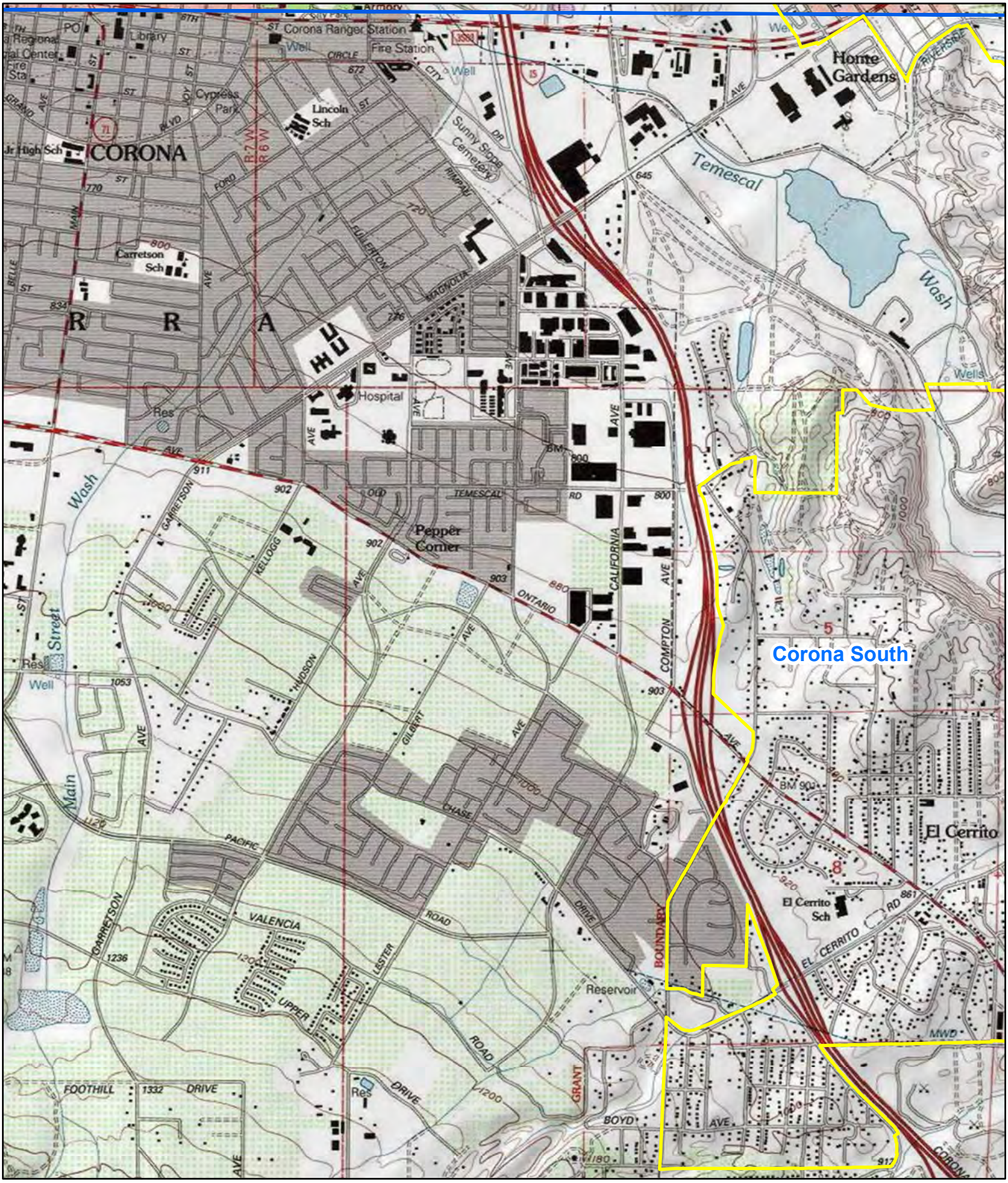


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RED TAIL ENVIRONMENTAL

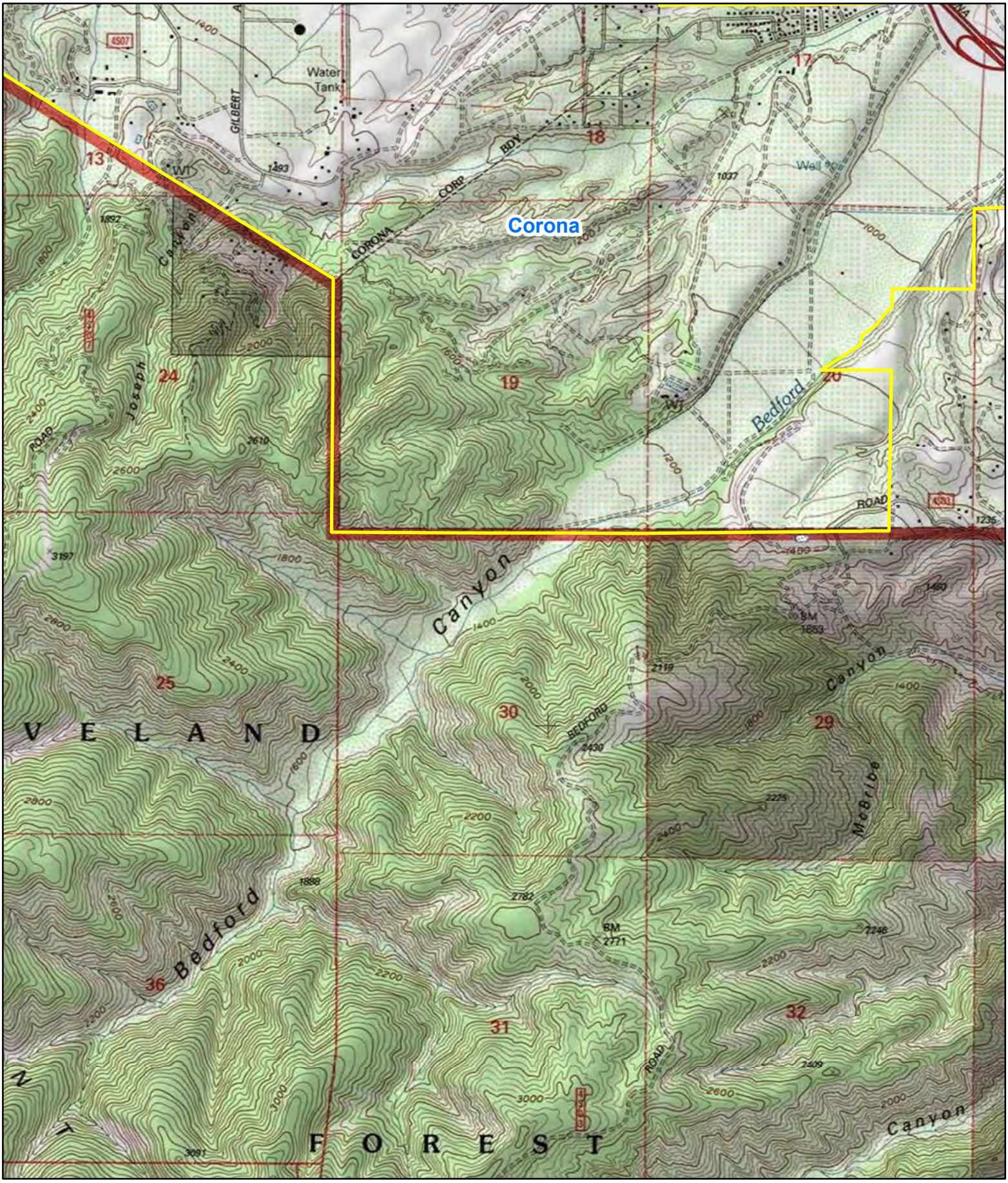


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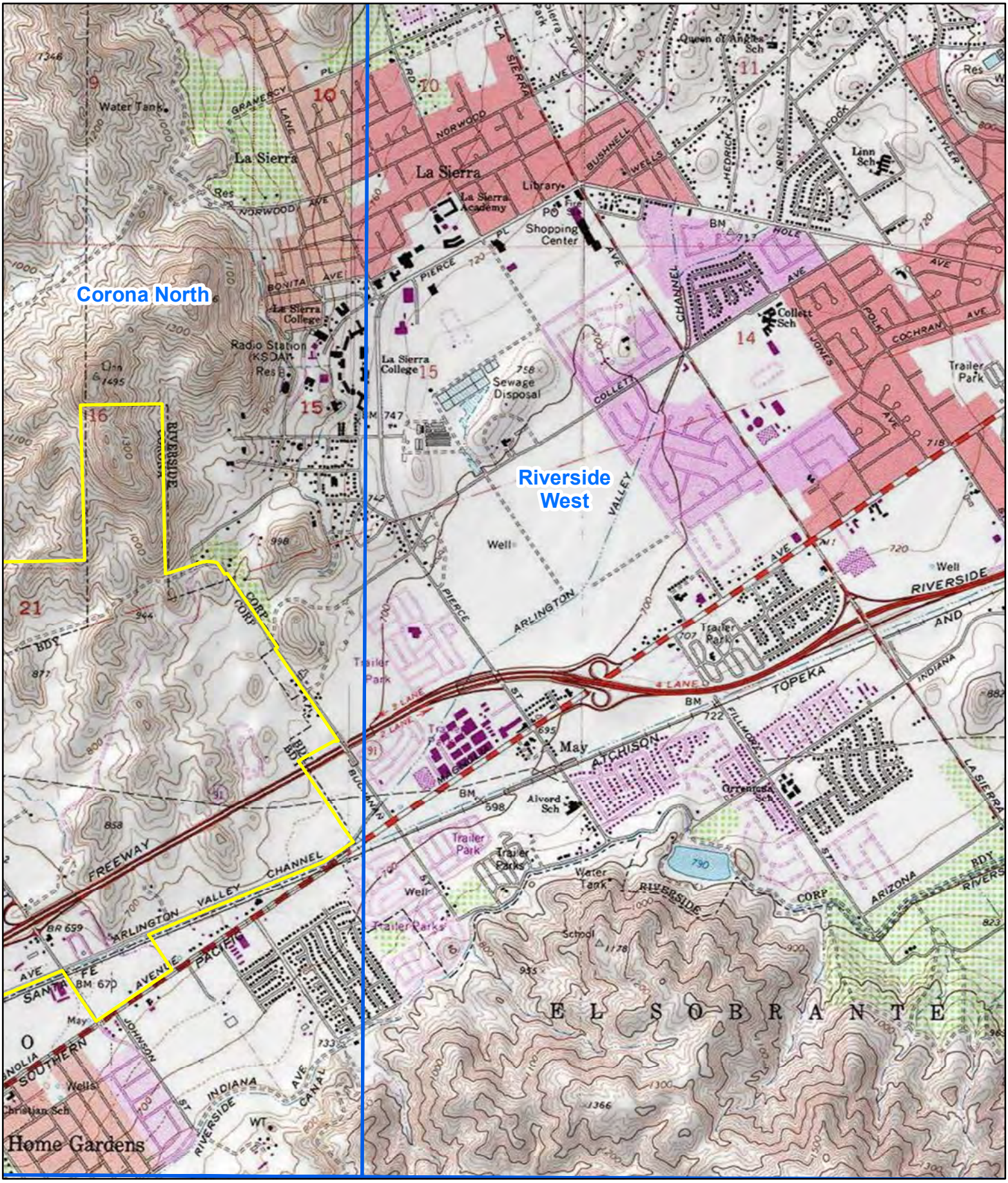


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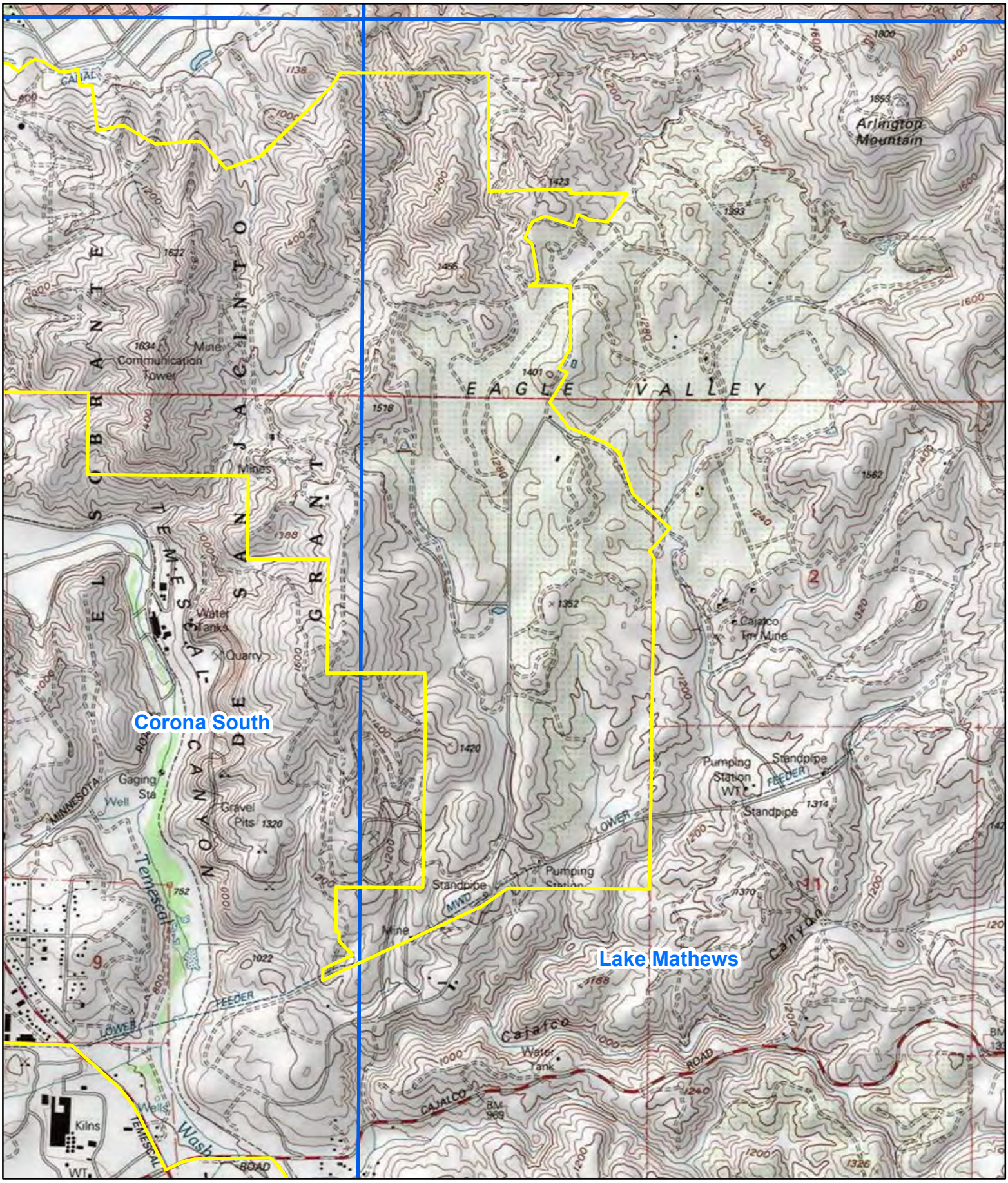
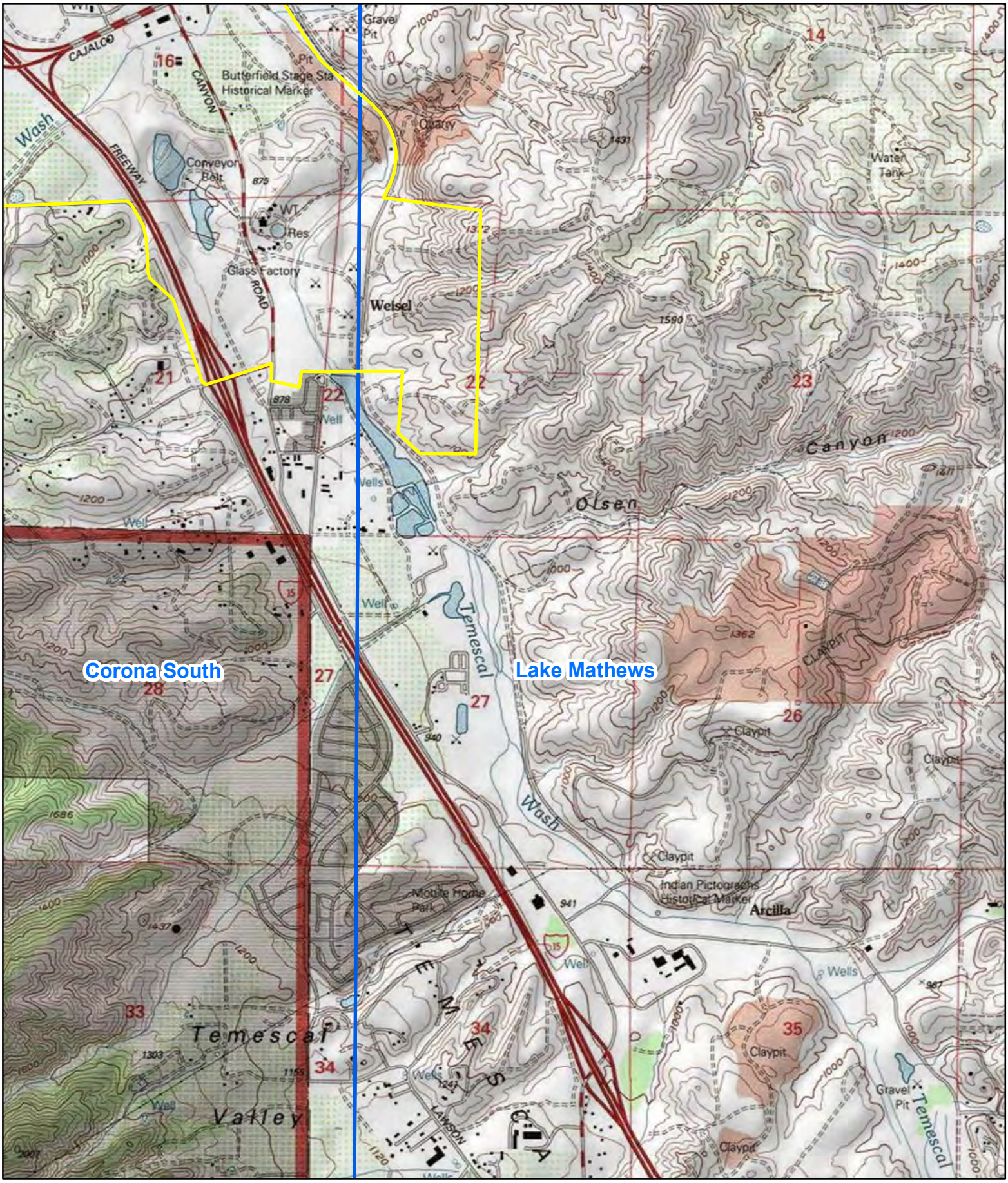


Figure 1. Project Area

RED TAIL ENVIRONMENTAL



1:24,000

0 250 500 1,000 Meters

0 1,000 2,000 4,000 Feet

Legend

- Project Area
- 7.5' USGS Quads

Figure 1. Project Area

RED TAIL ENVIRONMENTAL

RED TAIL ENVIRONMENTAL

April 6, 2020

Shane Chapparosa
Chairperson
Los Coyotes Band of Cahuilla and Cupeño Indians
PO Box 189, Warner Springs, CA, 92086-0189
760-782-0711

Re: City of Corona Reclaimed Water Project, Riverside County, California

Dear Mr. Chapparosa,

Red Tail Environmental (Red Tail) is conducting an archaeological study for the City of Corona Reclaimed Water Project (project), located within the City of Corona, Riverside County, California. The project area includes the entire City of Corona and the city's sphere of influence. The project is subject to the California Environmental Quality Act (CEQA) and will assess the environmental impact of the City of Corona's Reclaimed Water Master Plan. The City of Corona is the lead agency. The project area is shown on the following USGS 7.5' Quad Maps:

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- USGS 7.5' Corona North Quad map within:
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We are contacting you to request additional information regarding the Project area, if you are aware of any issues of cultural concern regarding the area shown on the enclosed map. In particular, we would like to know if you have knowledge of any Traditional Cultural Properties, Sacred Sites, Tribal Cultural Resources, resource collecting areas, or any other areas of concern of which you would wish us to be aware. If you have any questions or concerns regarding the proposed Project, please contact me at the address or phone number listed below, or via email at Shelby@redtailenvironmental.com. We appreciate any input you may have on this project.

Sincerely,



Shelby Castells, M.A., RPA
Director of Archaeology
Attachments: Project Area Maps (1-10)

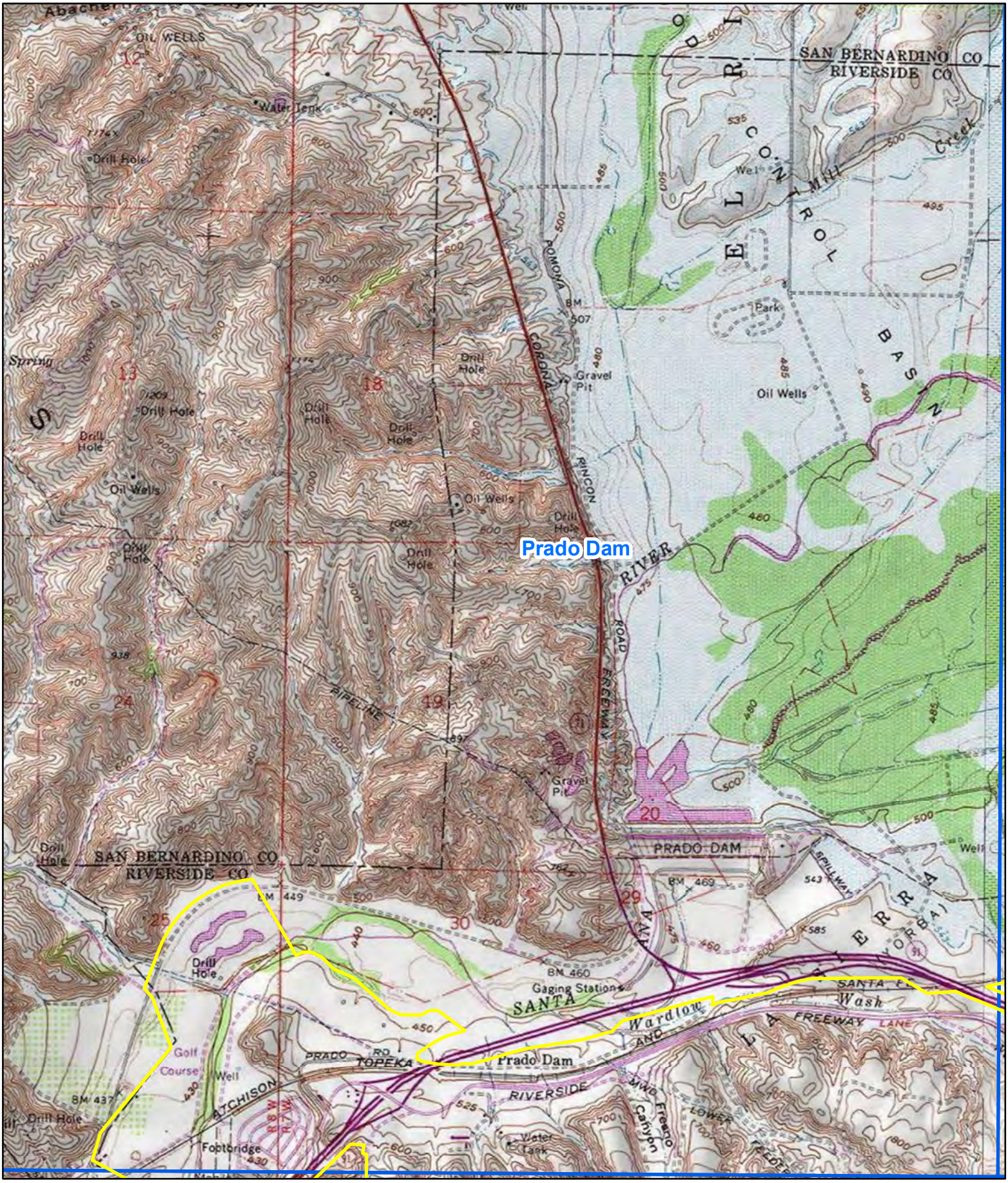


Figure 1. Project Area

RED TAIL ENVIRONMENTAL



Figure 1. Project Area



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Legend

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- 7.5' USGS Quads

RED TAIL ENVIRONMENTAL



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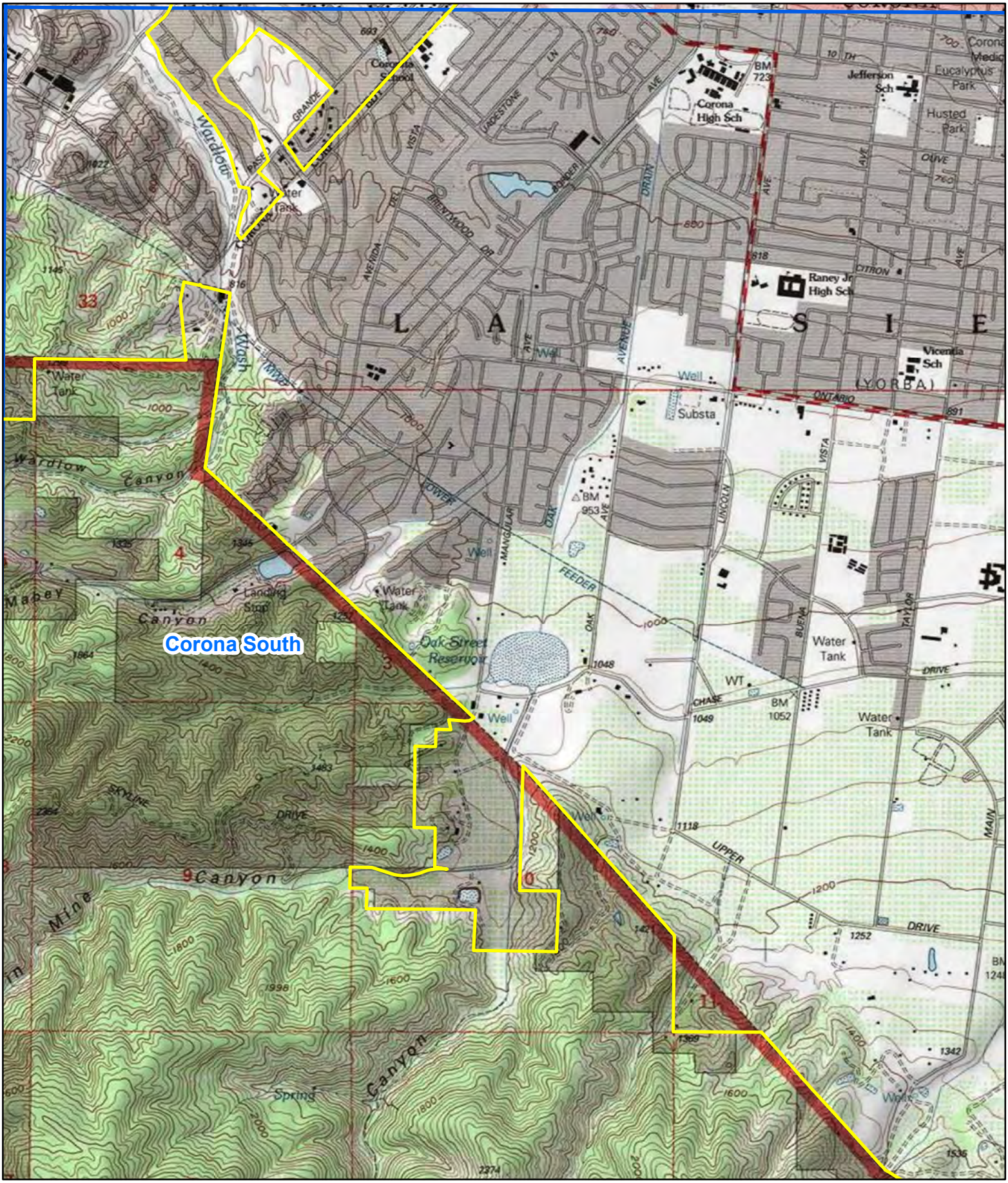


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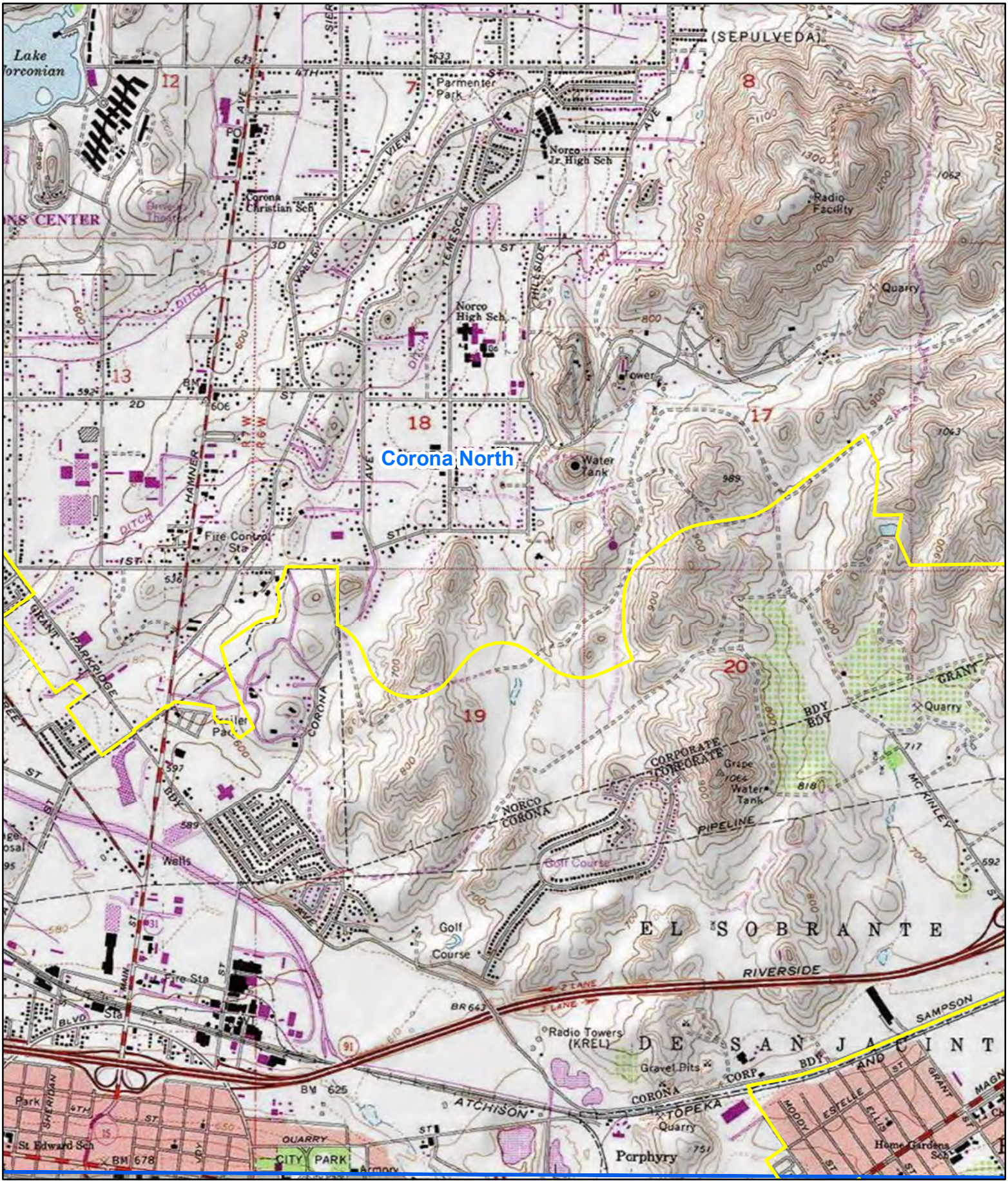
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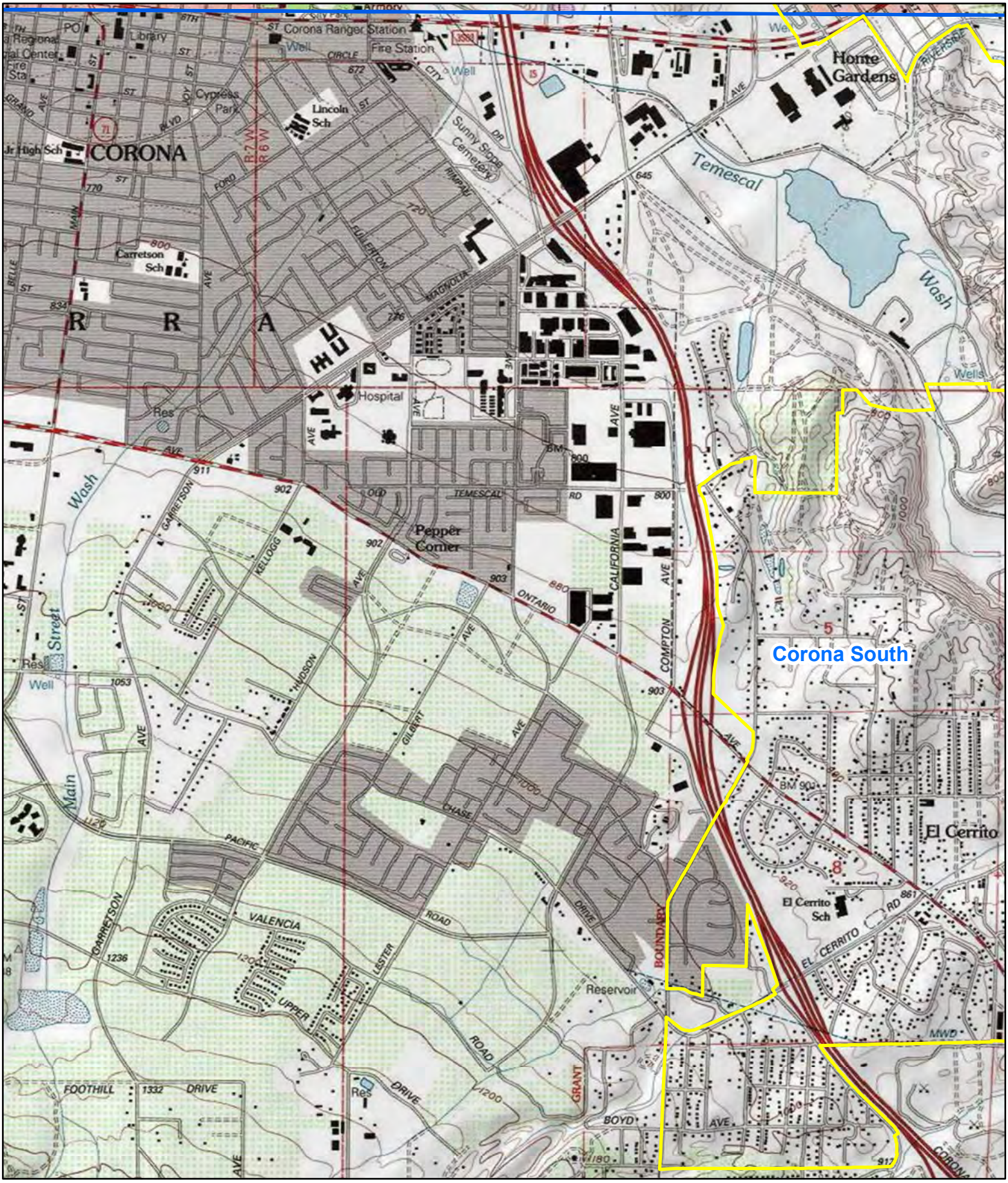


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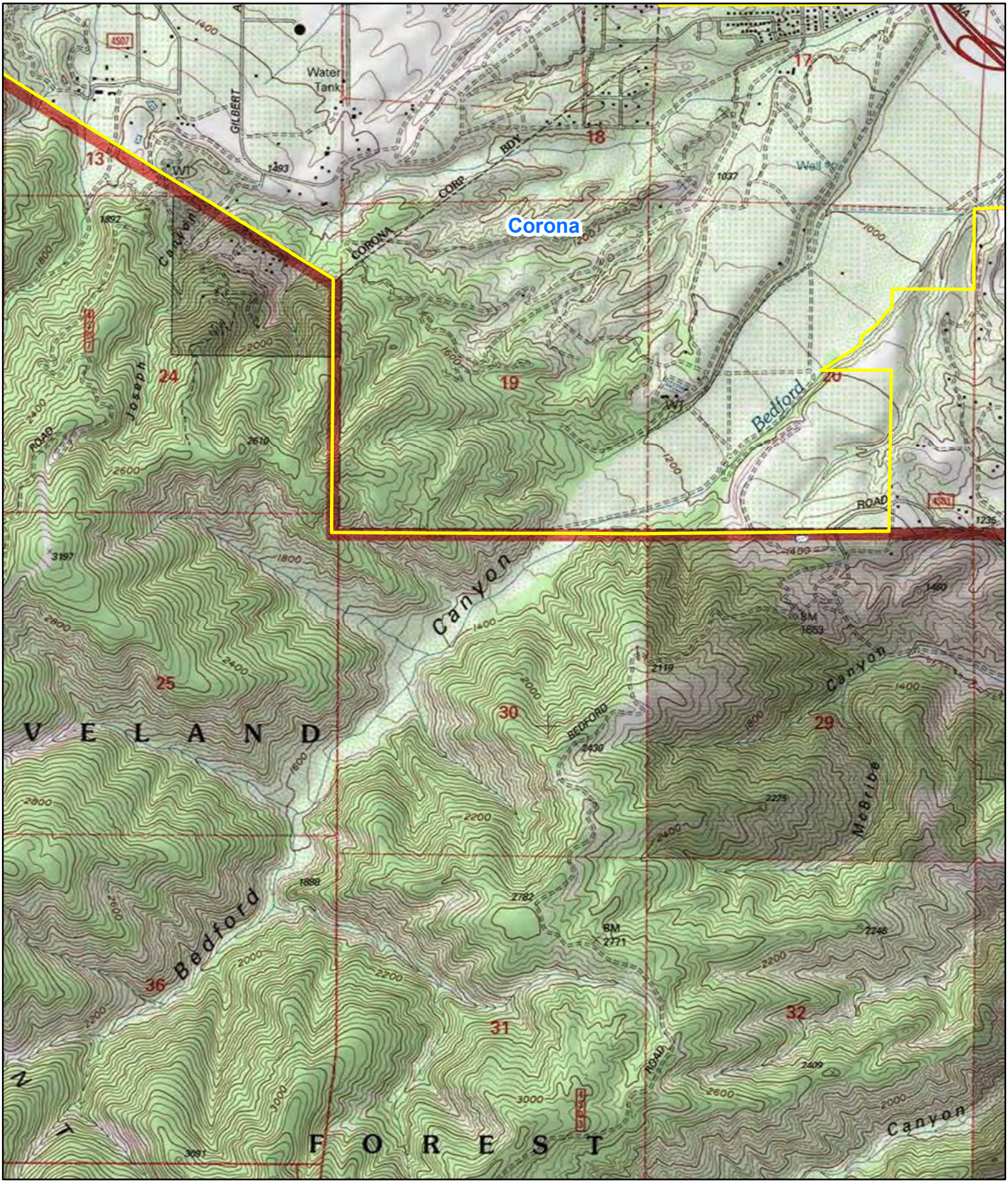
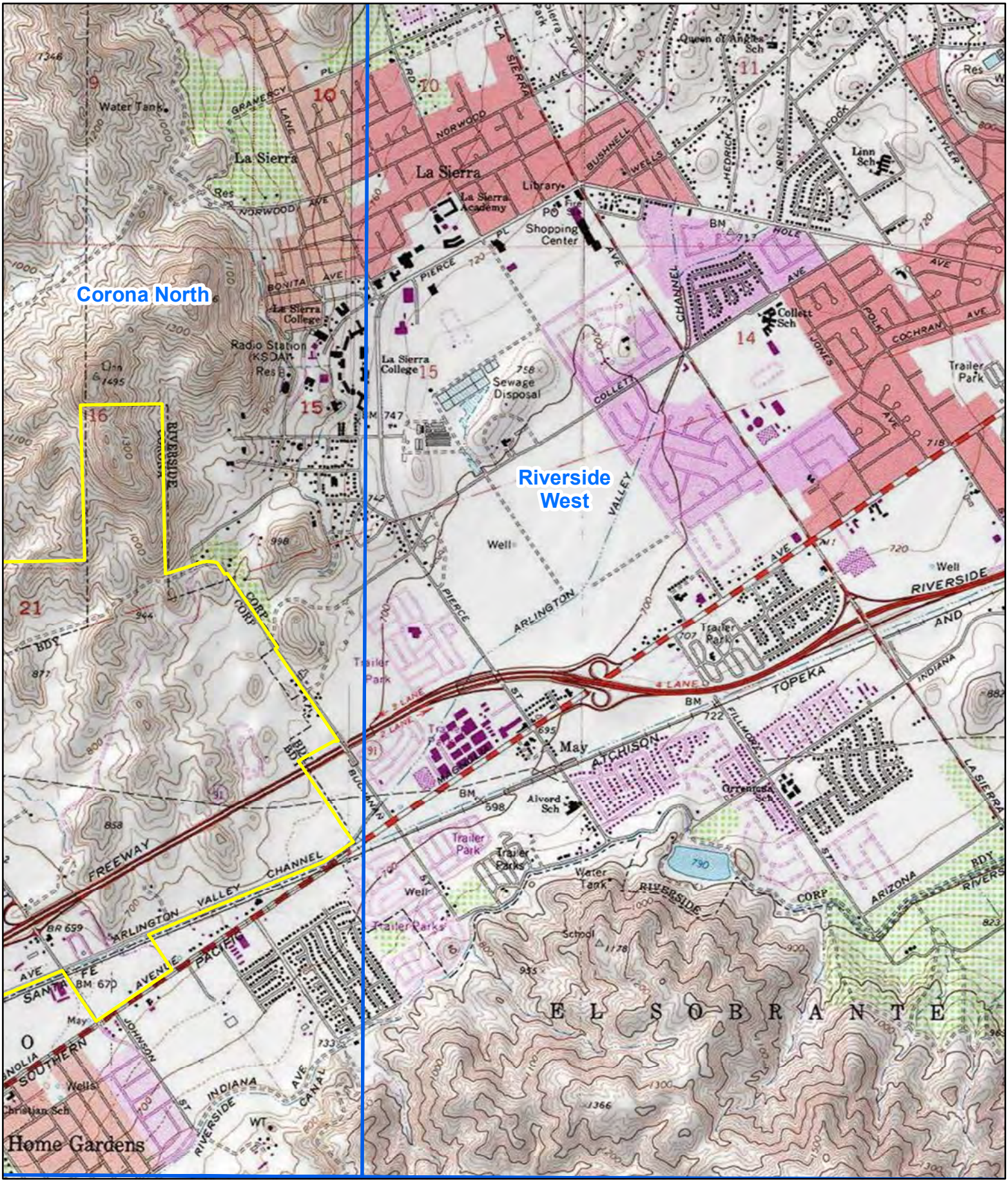


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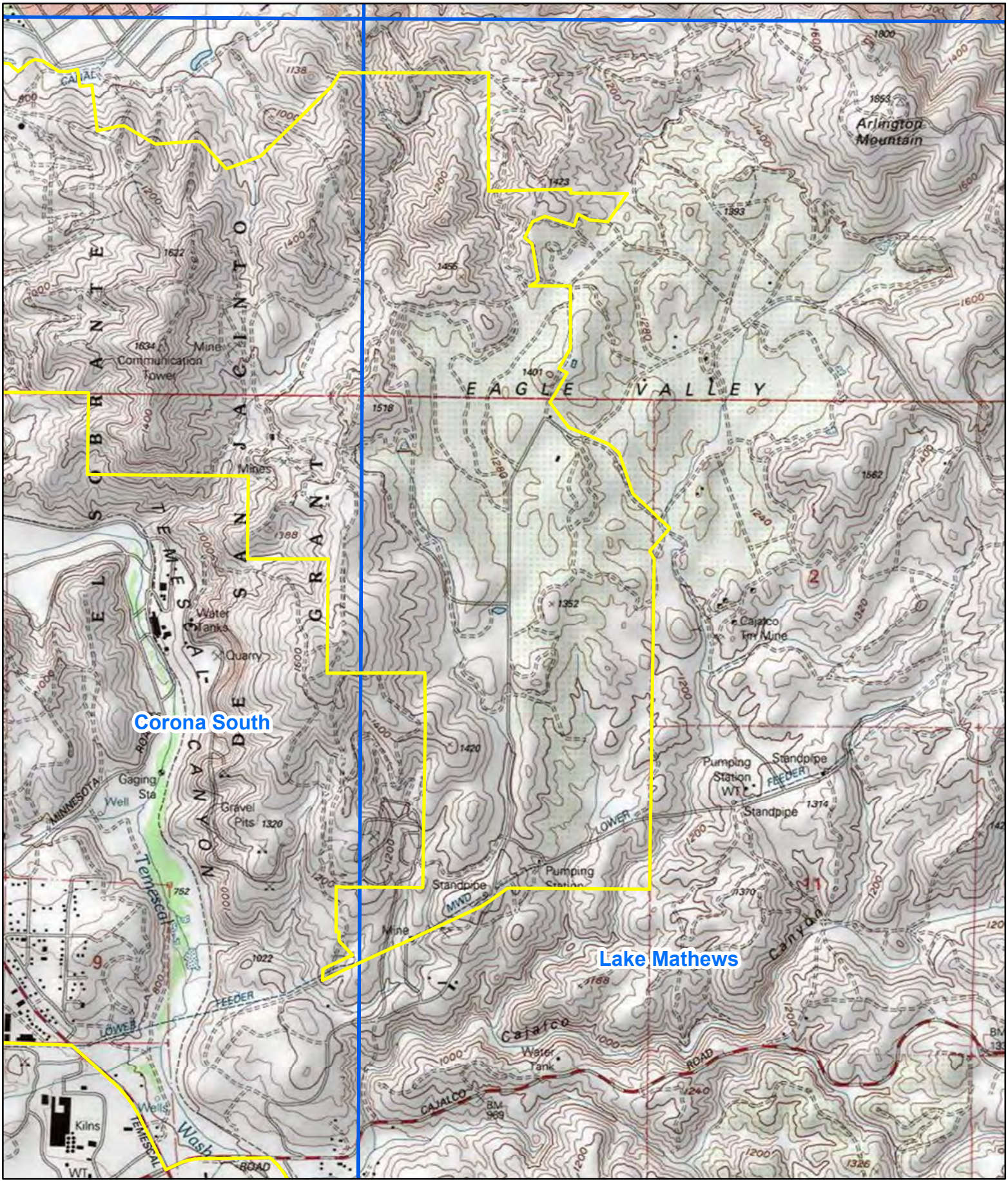
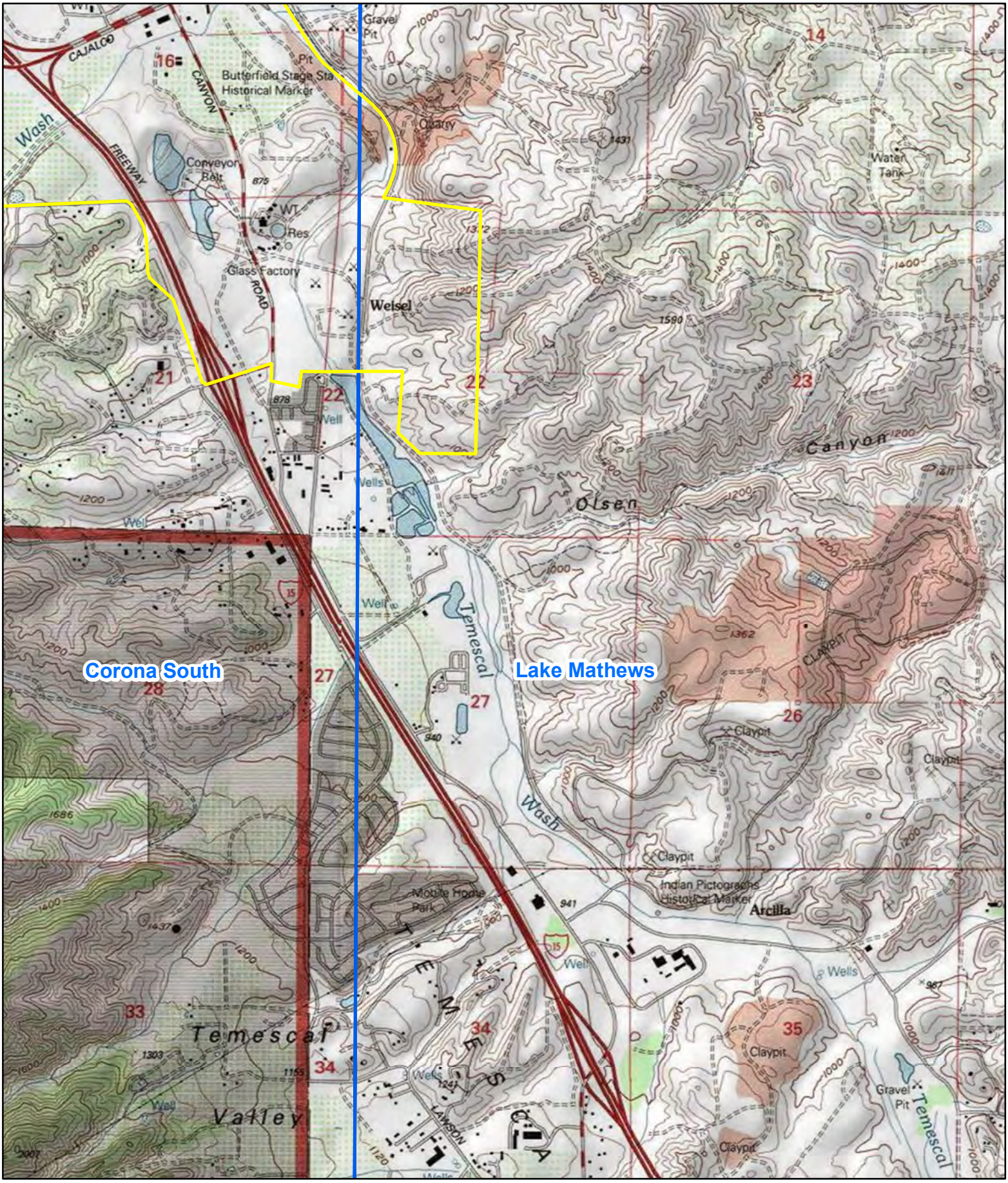


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Figure 1. Project Area

RED TAIL ENVIRONMENTAL

RED TAIL ENVIRONMENTAL

April 6, 2020

Scott Cozart
Chairperson
Soboba Band of Luiseno Indians
PO Box 487, San Jacinto, CA, 92583
951-654-2765
jontiveros@soboba-nsn.gov

Re: City of Corona Reclaimed Water Project, Riverside County, California

Dear Mr. Cozart,

Red Tail Environmental (Red Tail) is conducting an archaeological study for the City of Corona Reclaimed Water Project (project), located within the City of Corona, Riverside County, California. The project area includes the entire City of Corona and the city's sphere of influence. The project is subject to the California Environmental Quality Act (CEQA) and will assess the environmental impact of the City of Corona's Reclaimed Water Master Plan. The City of Corona is the lead agency. The project area is shown on the following USGS 7.5' Quad Maps:

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We are contacting you to request additional information regarding the Project area, if you are aware of any issues of cultural concern regarding the area shown on the enclosed map. In particular, we would like to know if you have knowledge of any Traditional Cultural Properties, Sacred Sites, Tribal Cultural Resources, resource collecting areas, or any other areas of concern of which you would wish us to be aware. If you have any questions or concerns regarding the proposed Project, please contact me at the address or phone number listed below, or via email at Shelby@redtailenvironmental.com. We appreciate any input you may have on this project.

Sincerely,



Shelby Castells, M.A., RPA
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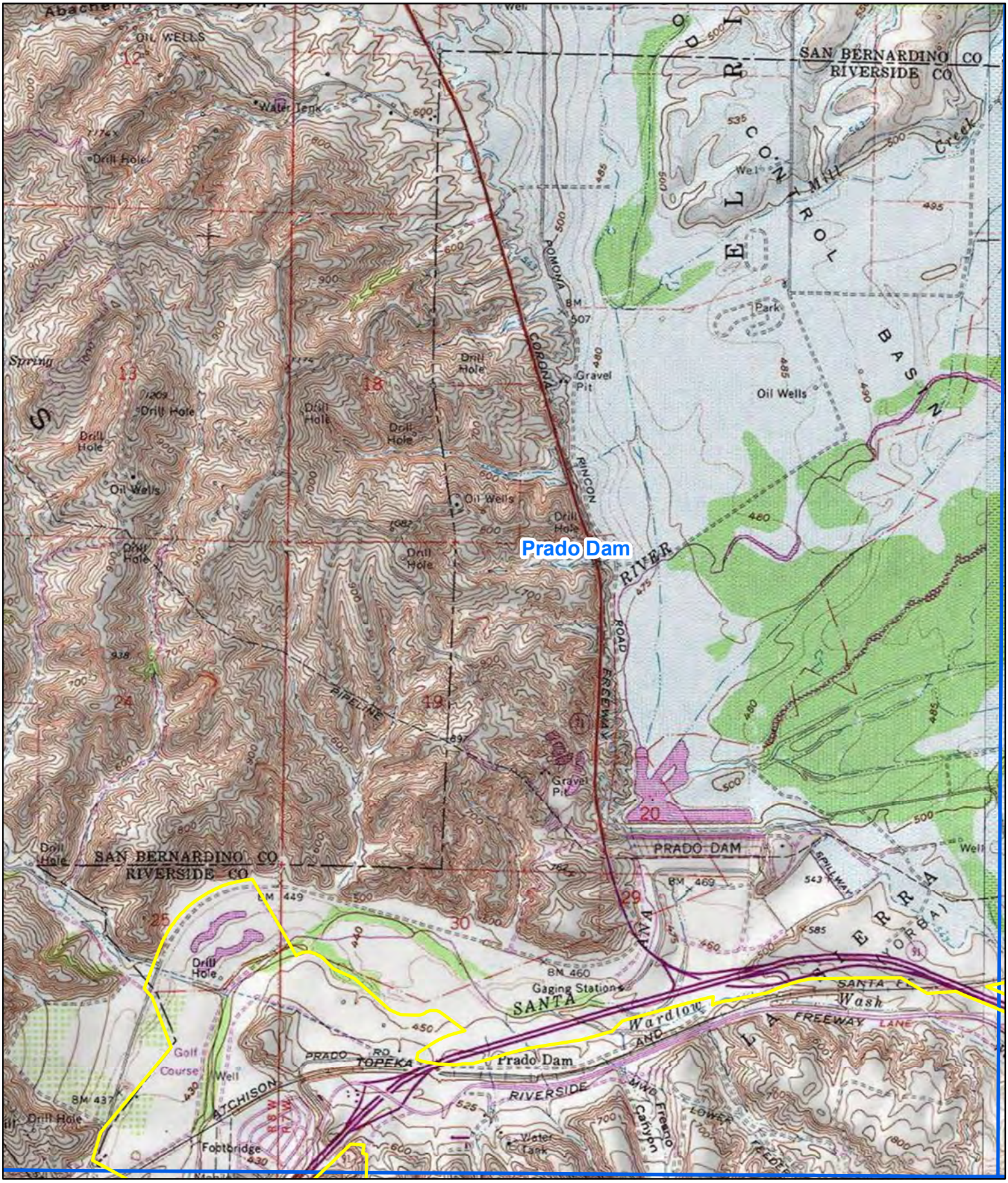


Figure 1. Project Area

RED TAIL ENVIRONMENTAL



Figure 1. Project Area



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Legend

- Project Area
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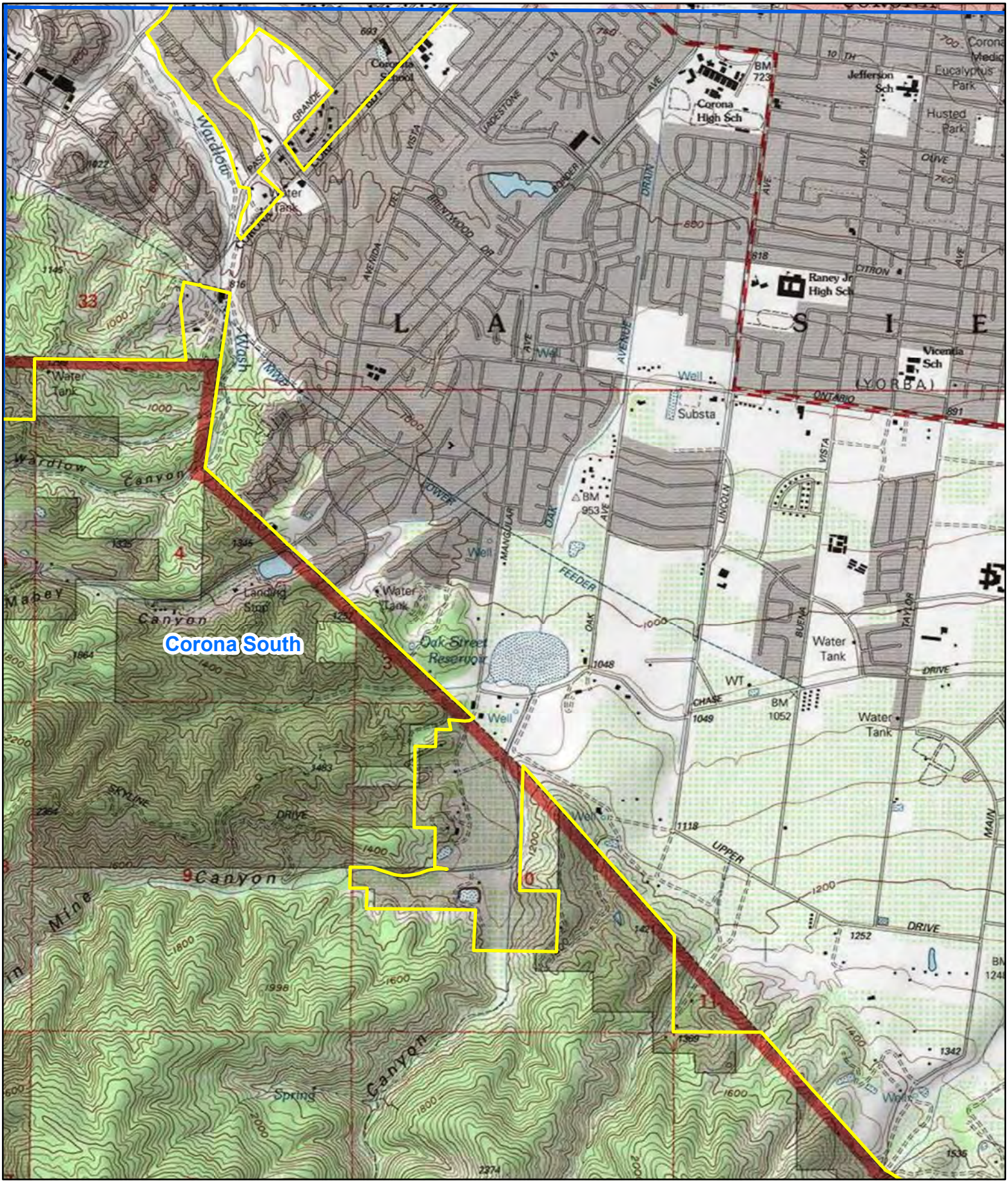


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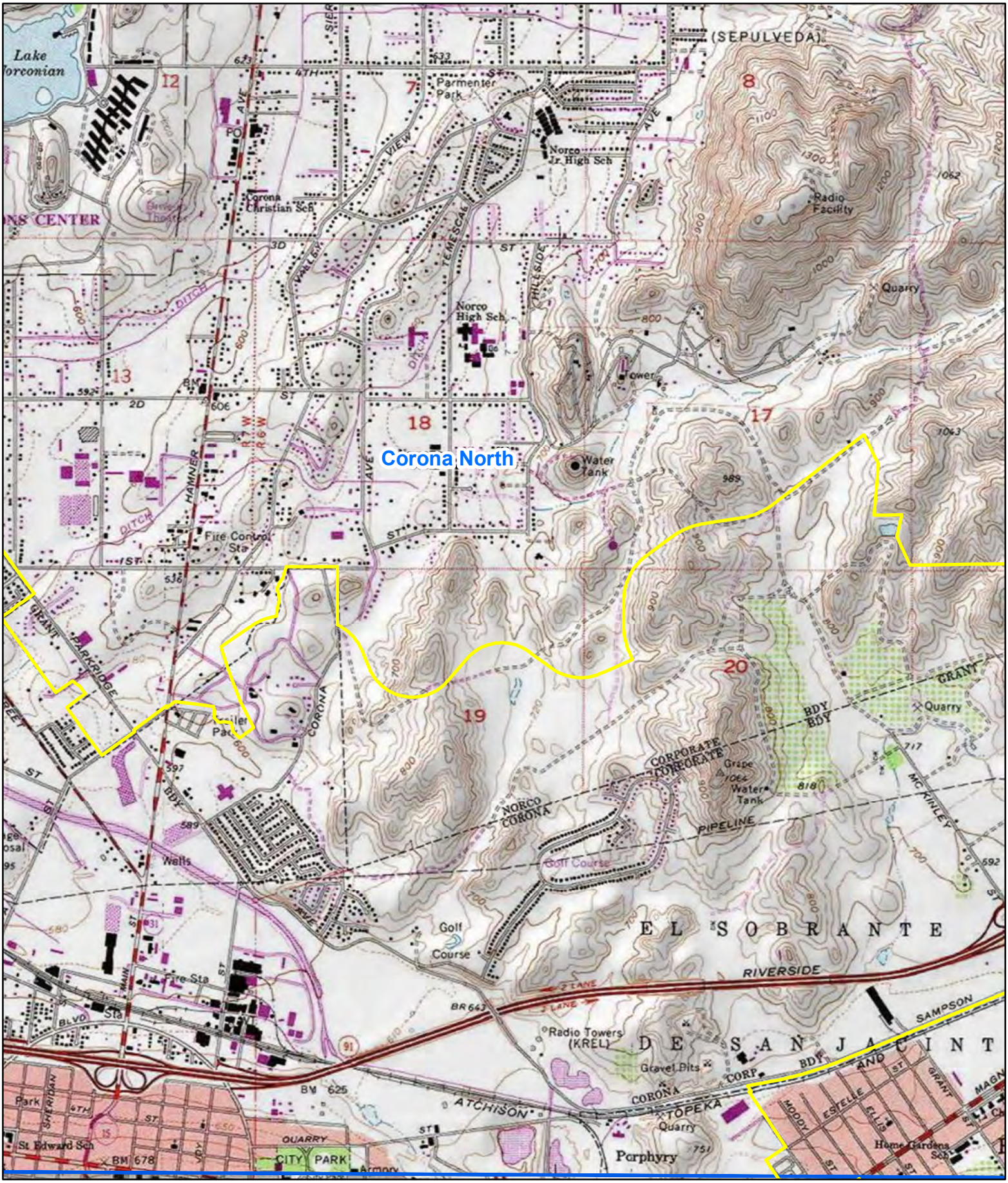
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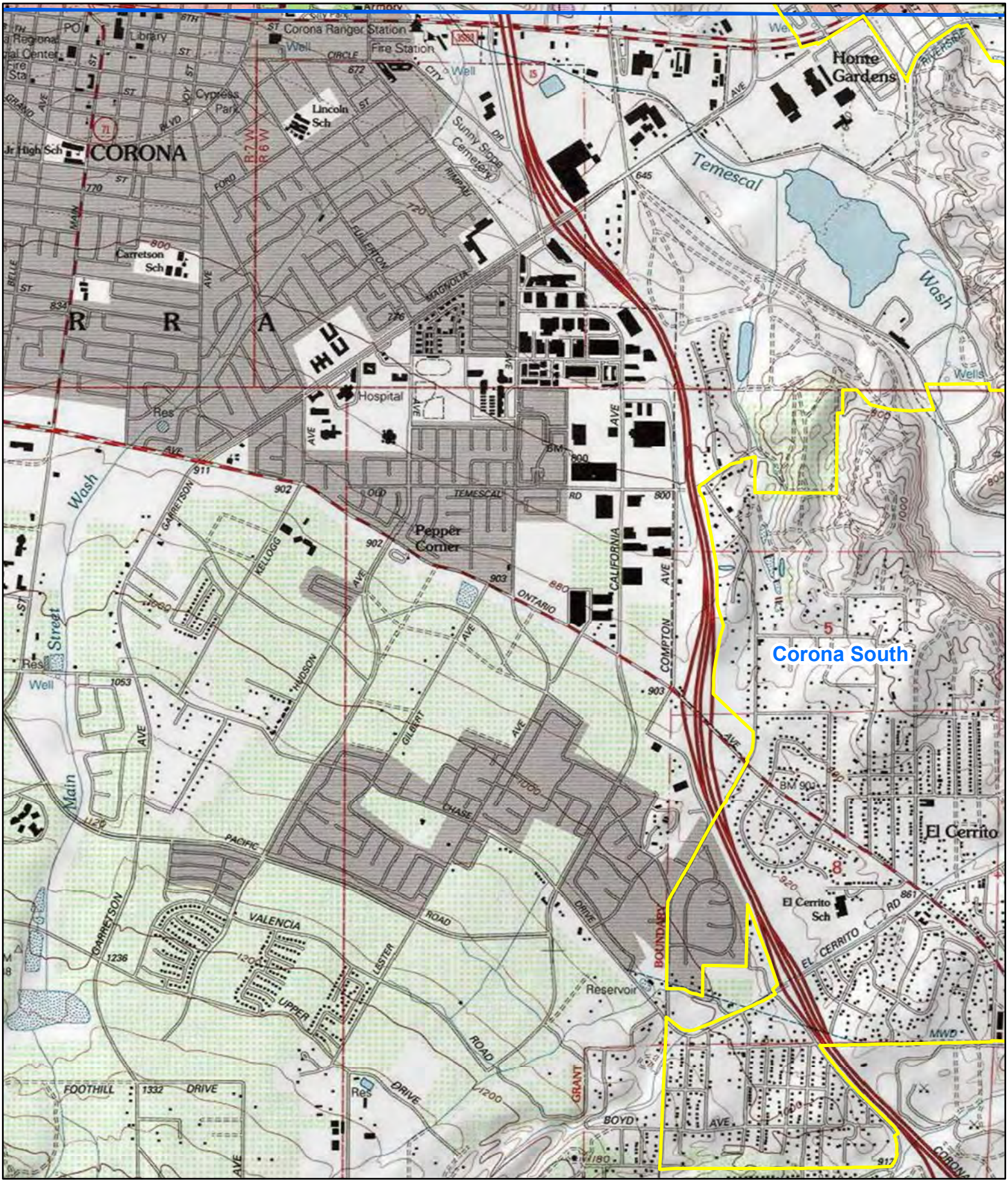


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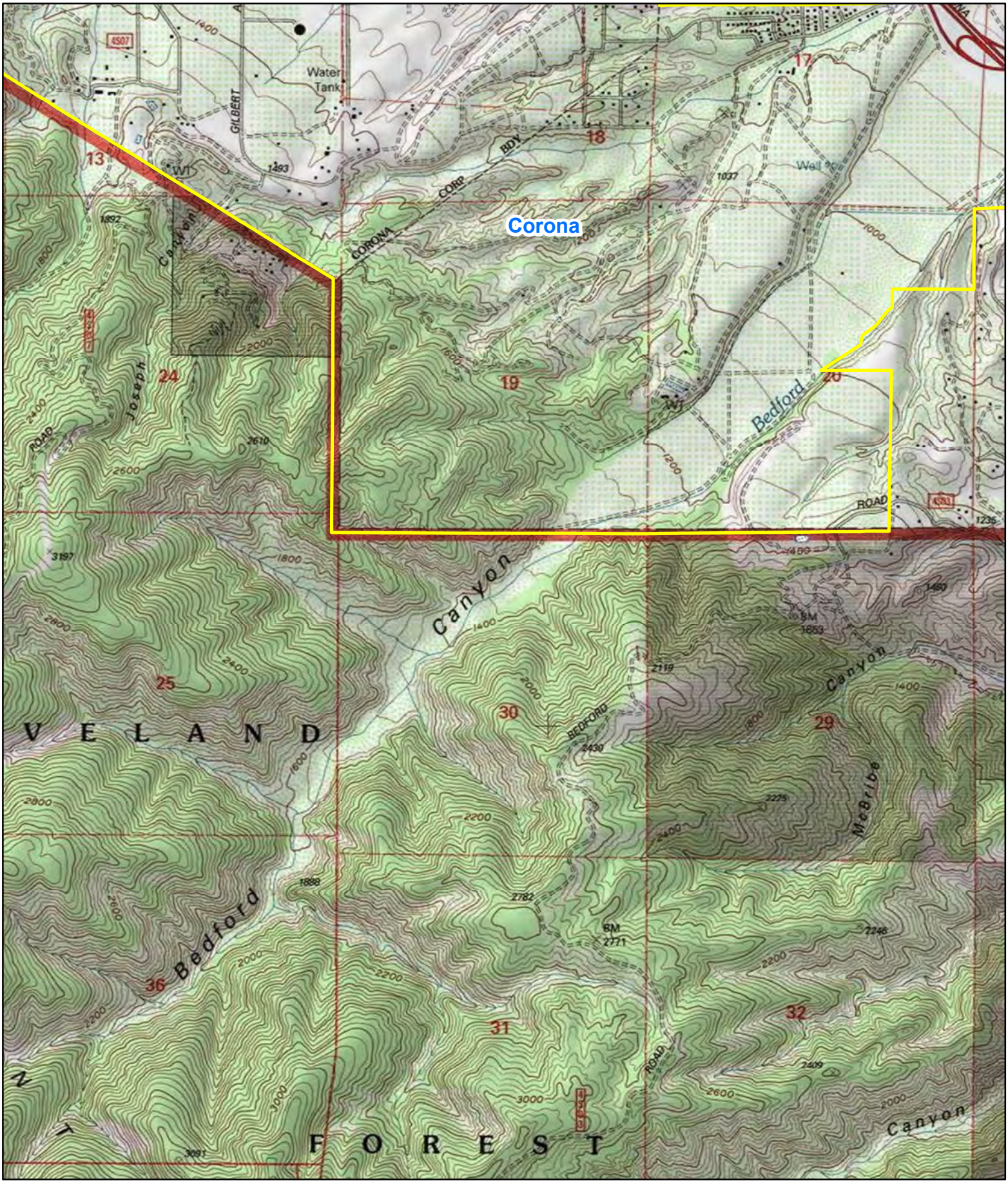


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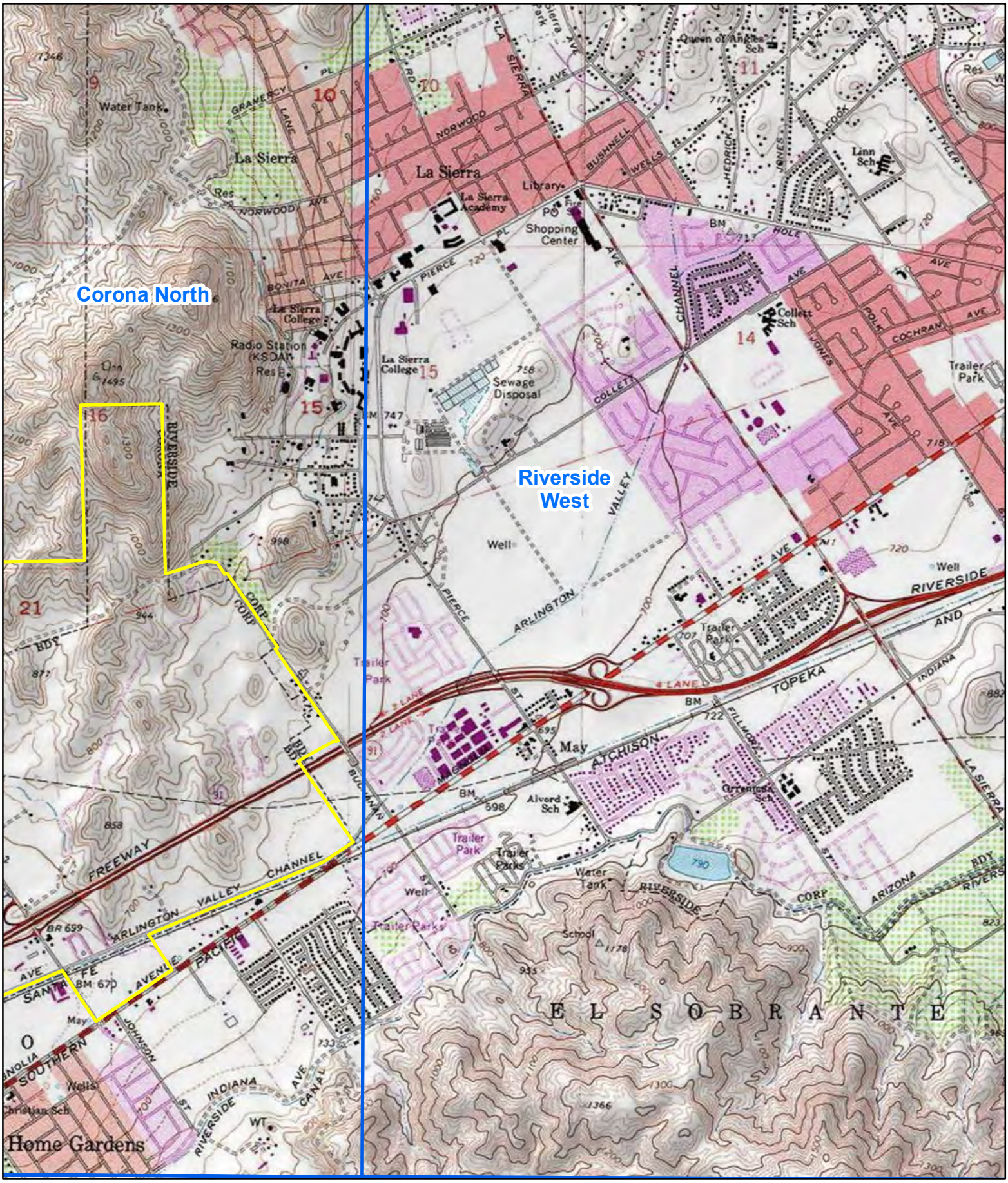


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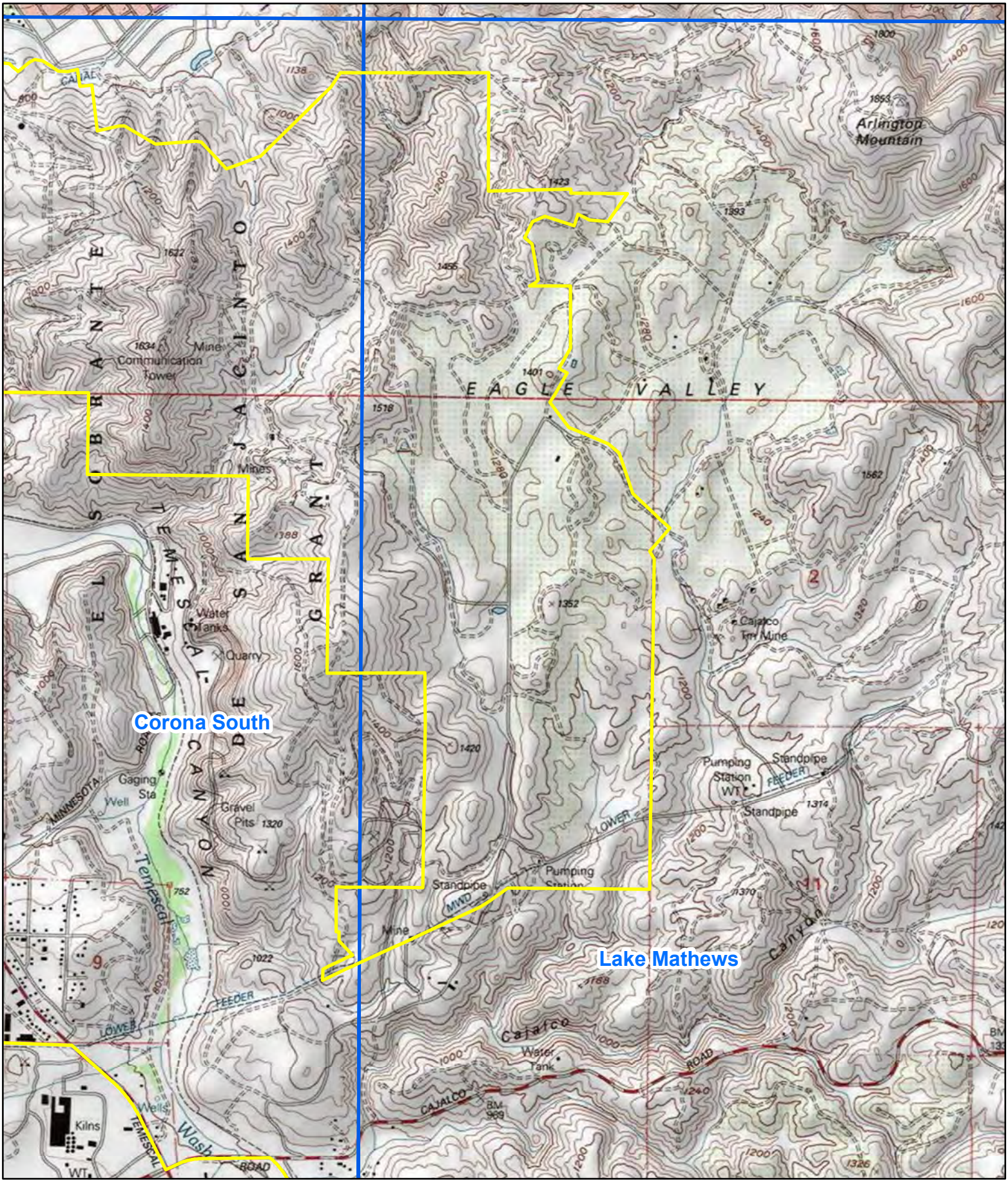
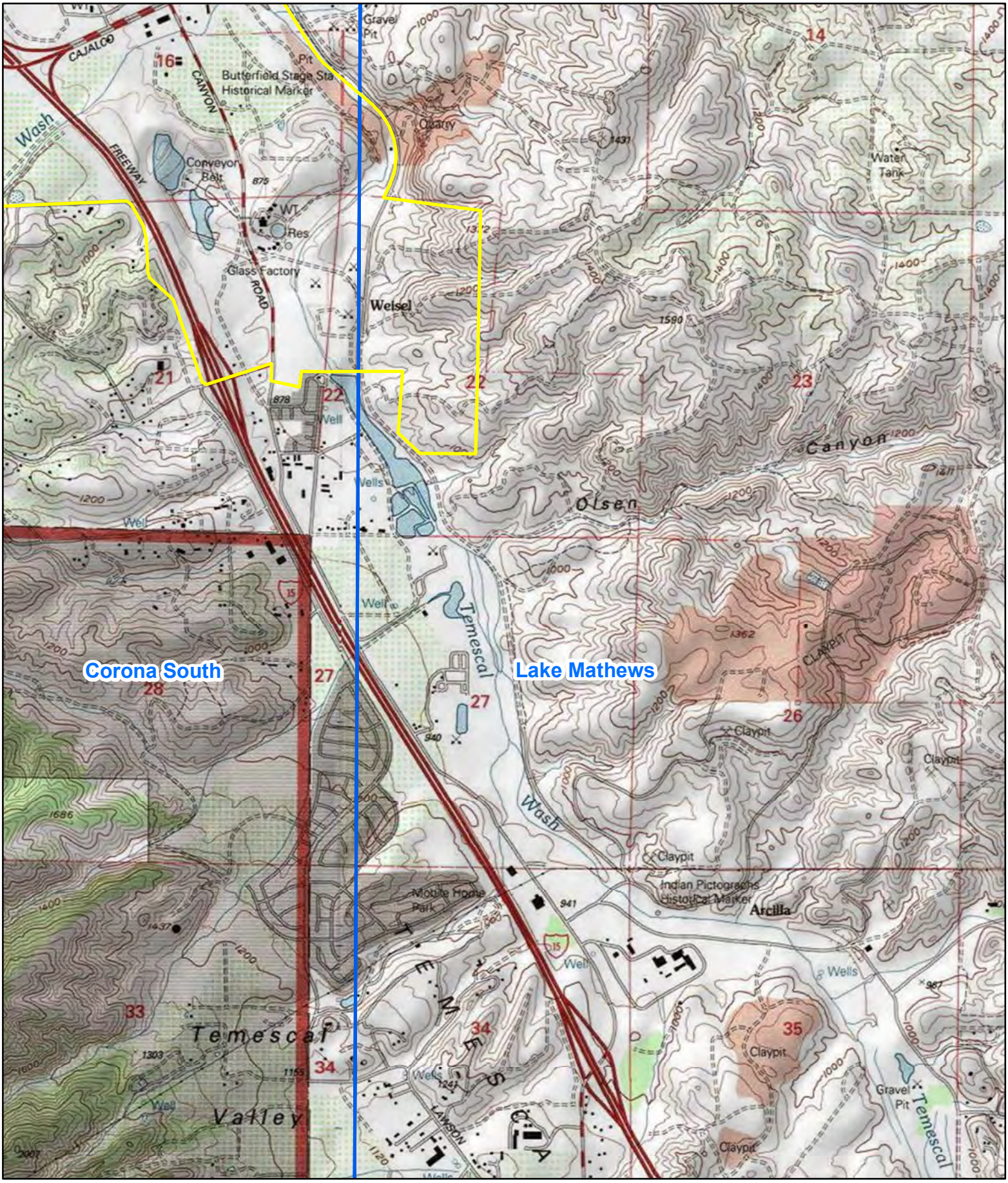


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RED TAIL ENVIRONMENTAL

RED TAIL ENVIRONMENTAL

April 6, 2020

Steven Estrada
Chairperson
Santa Rosa Band of Cahuilla Indians
PO Box 391820, Anza, CA, 92539
951-659-2700
mflaxbeard@santarosacahuilla-nsn.gov

Re: City of Corona Reclaimed Water Project, Riverside County, California

Dear Mr. Estrada,

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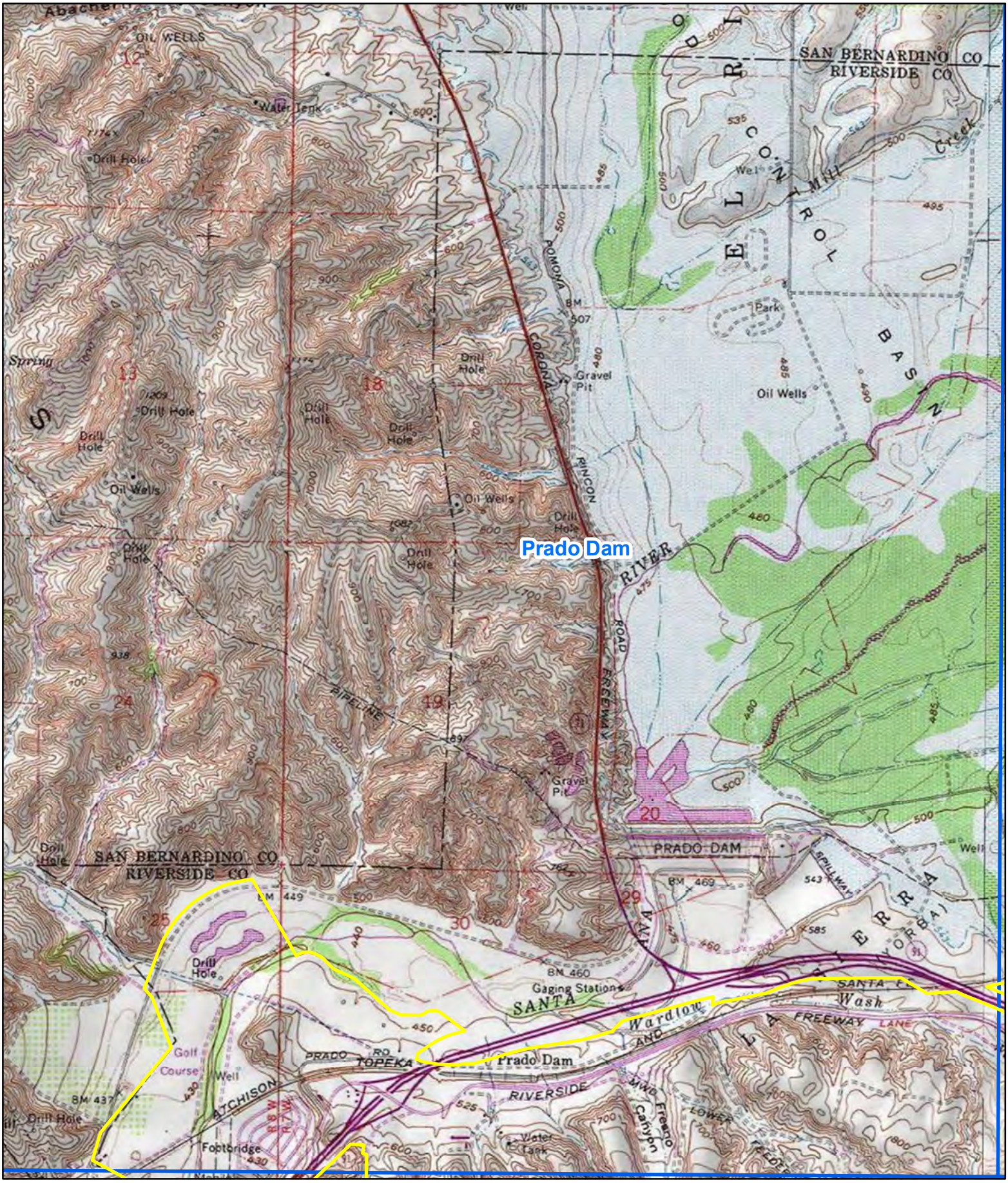


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RED TAIL ENVIRONMENTAL



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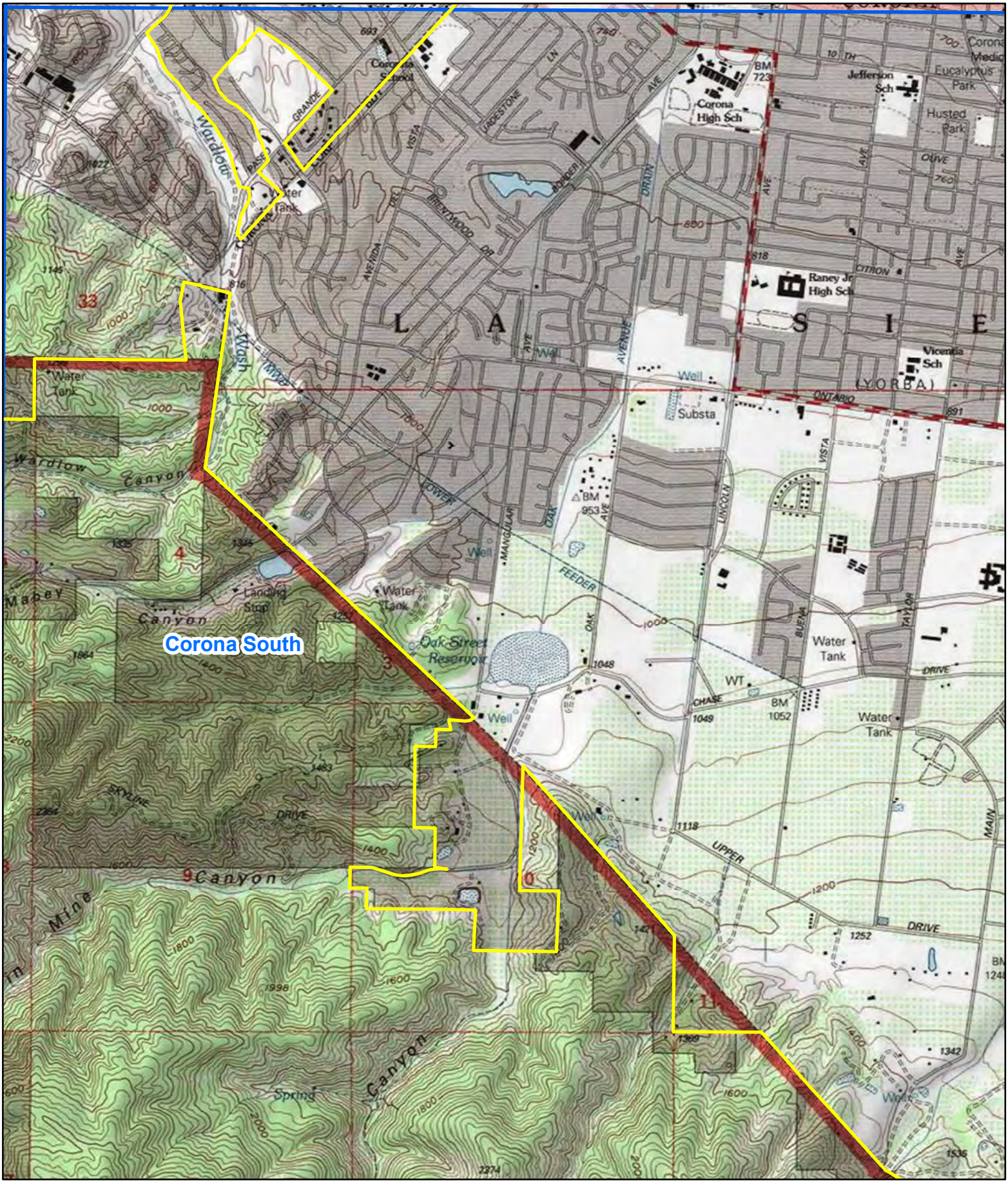


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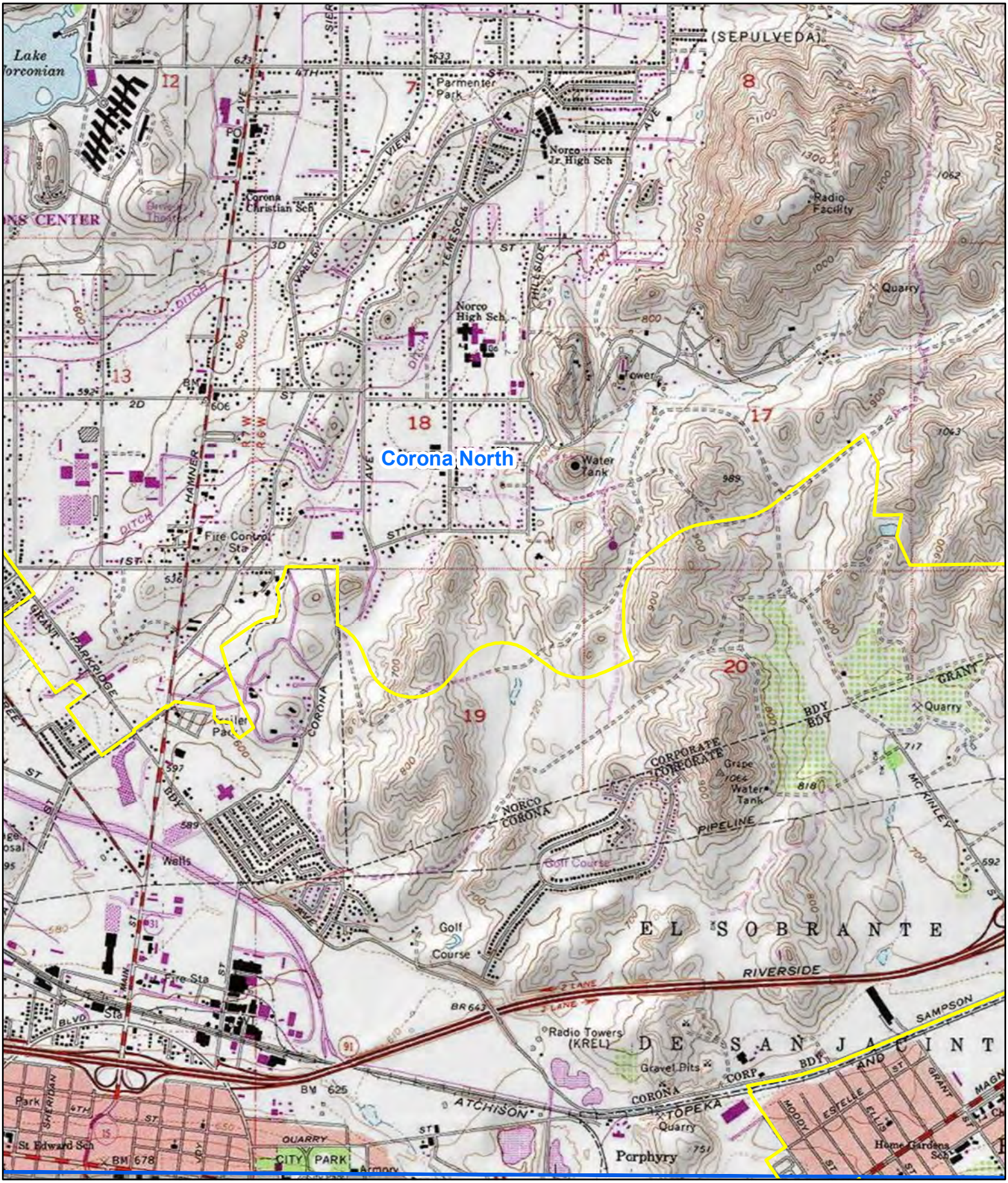
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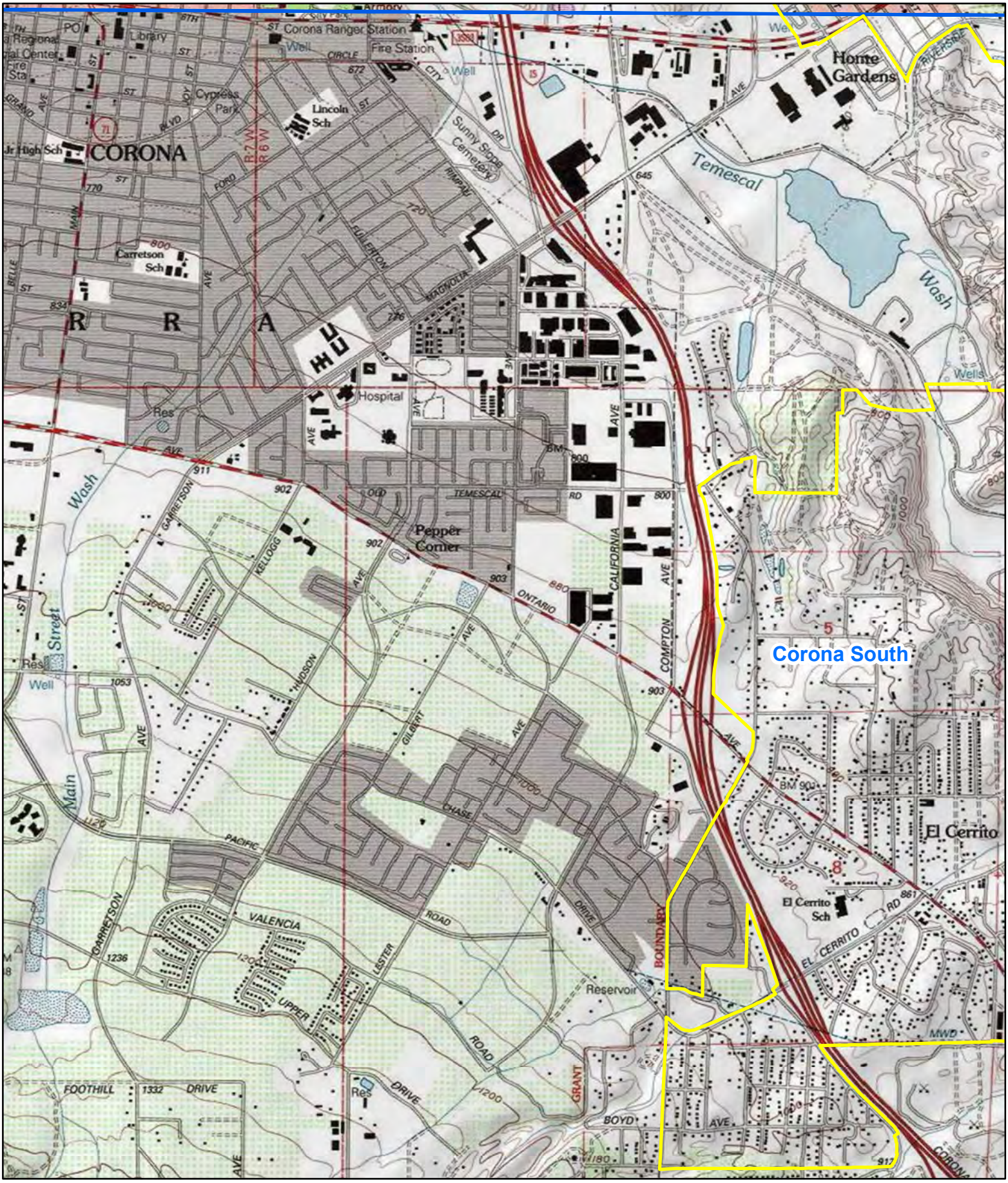


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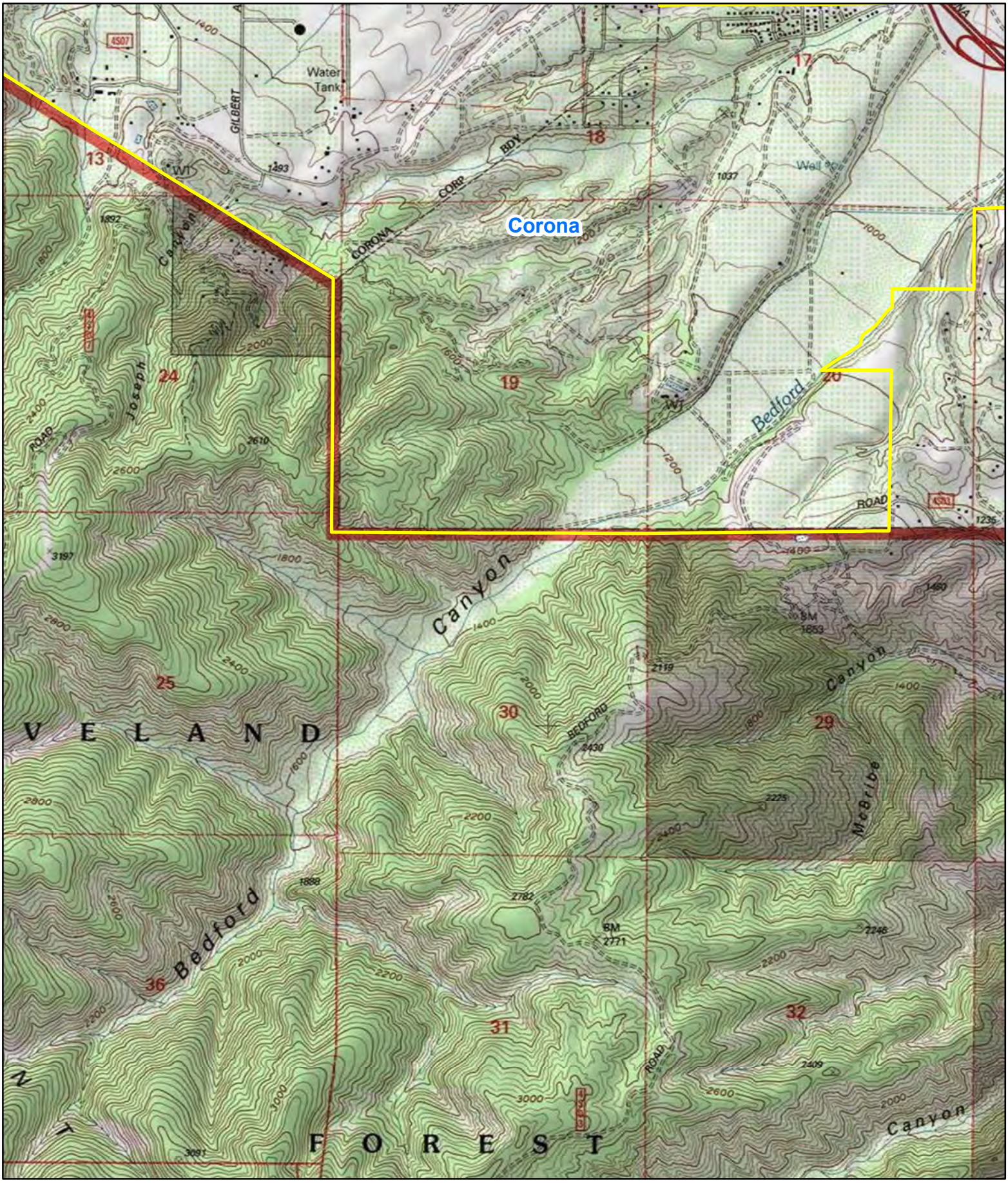
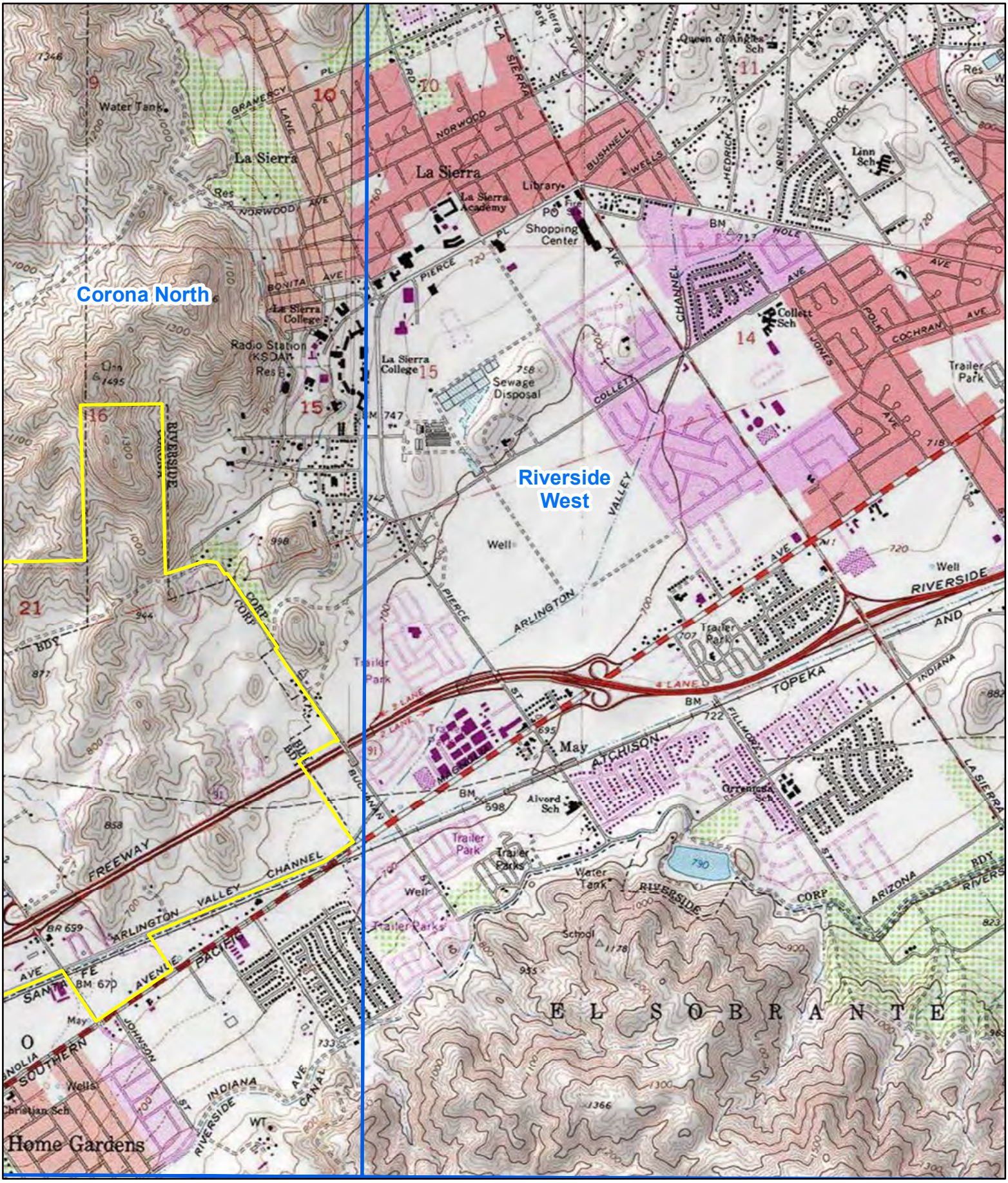


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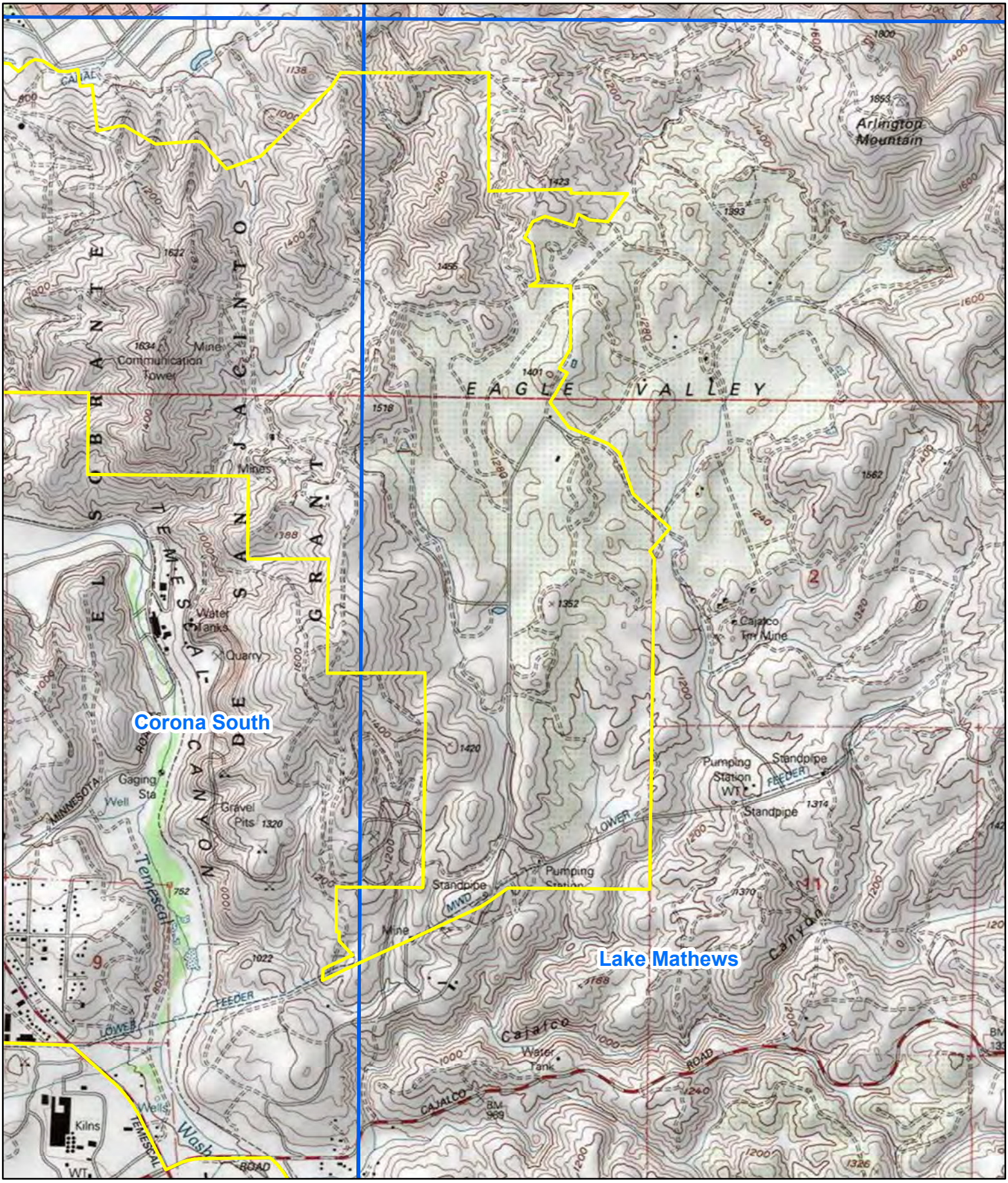
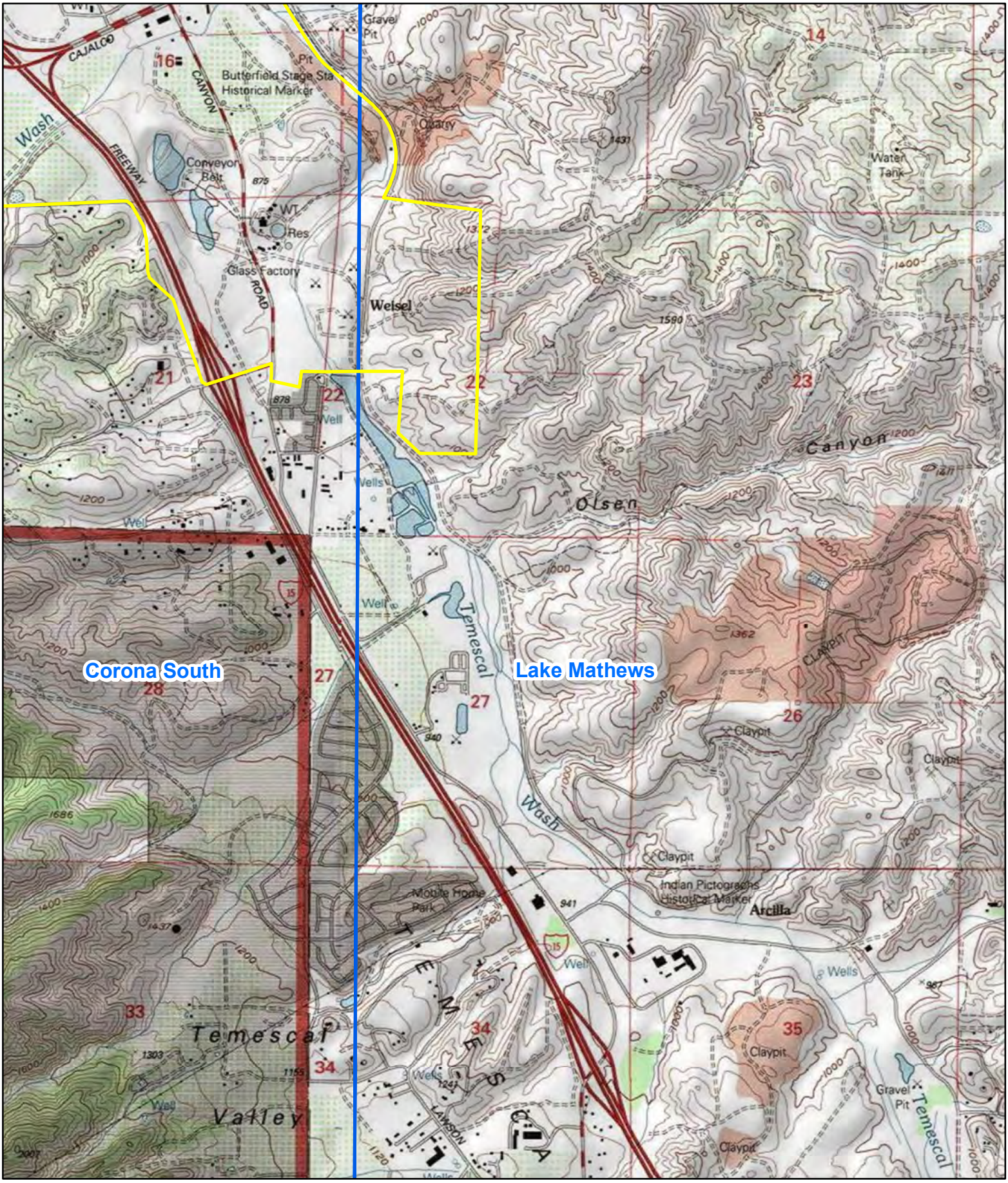


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RED TAIL ENVIRONMENTAL

RED TAIL ENVIRONMENTAL

April 6, 2020

Shasta Gaughen
Tribal Historic Preservation Officer
Pala Band of Mission Indians
PMB 50, 35008 Pala Temecula Road, Pala, CA, 92059
760-891-3515
sgaughen@palatribe.com

Re: City of Corona Reclaimed Water Project, Riverside County, California

Dear Ms. Gaughen,

Red Tail Environmental (Red Tail) is conducting an archaeological study for the City of Corona Reclaimed Water Project (project), located within the City of Corona, Riverside County, California. The project area includes the entire City of Corona and the city's sphere of influence. The project is subject to the California Environmental Quality Act (CEQA) and will assess the environmental impact of the City of Corona's Reclaimed Water Master Plan. The City of Corona is the lead agency. The project area is shown on the following USGS 7.5' Quad Maps:

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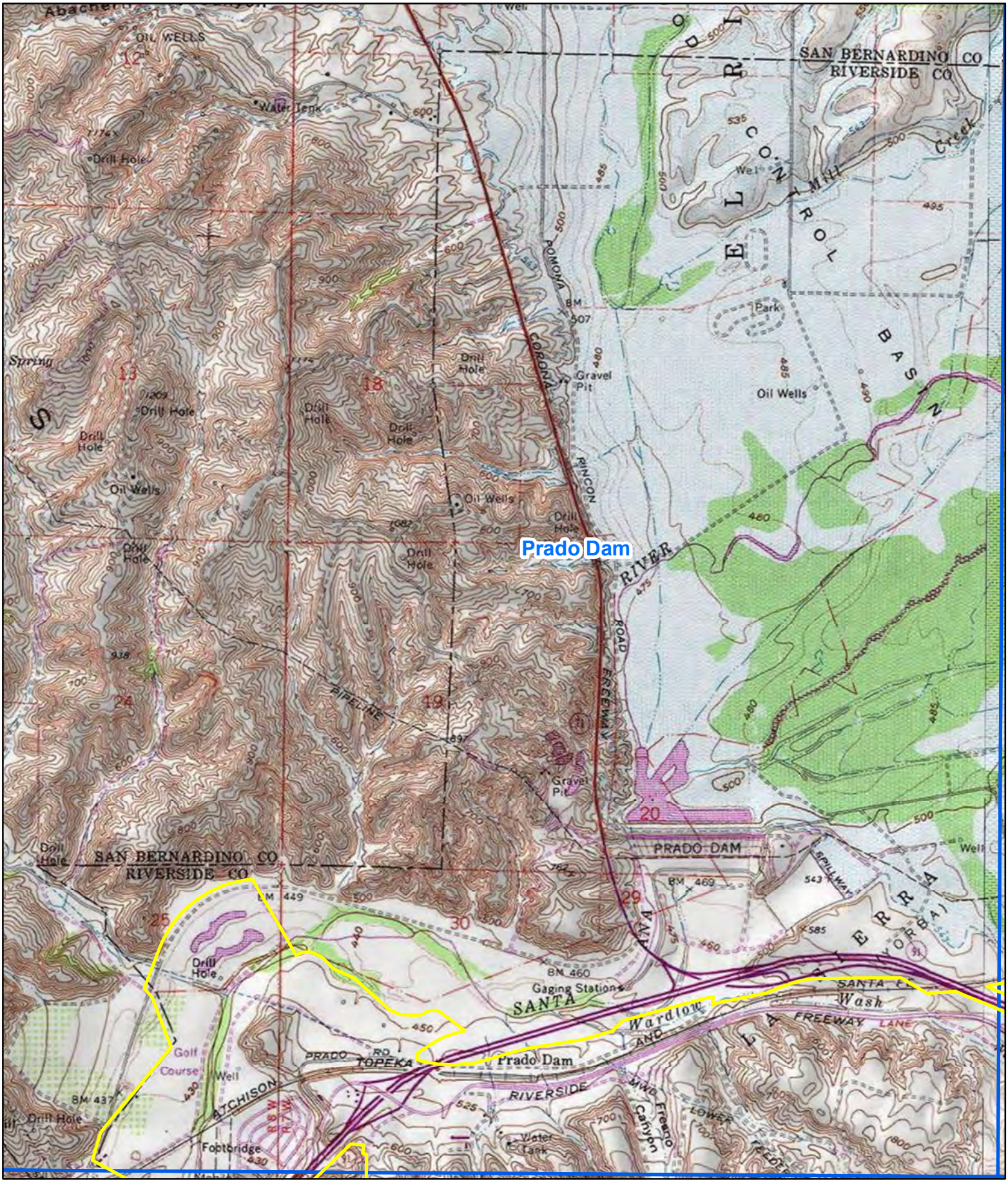


Figure 1. Project Area

RED TAIL ENVIRONMENTAL



Figure 1. Project Area



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Legend

- Project Area
- 7.5' USGS Quads

RED TAIL ENVIRONMENTAL



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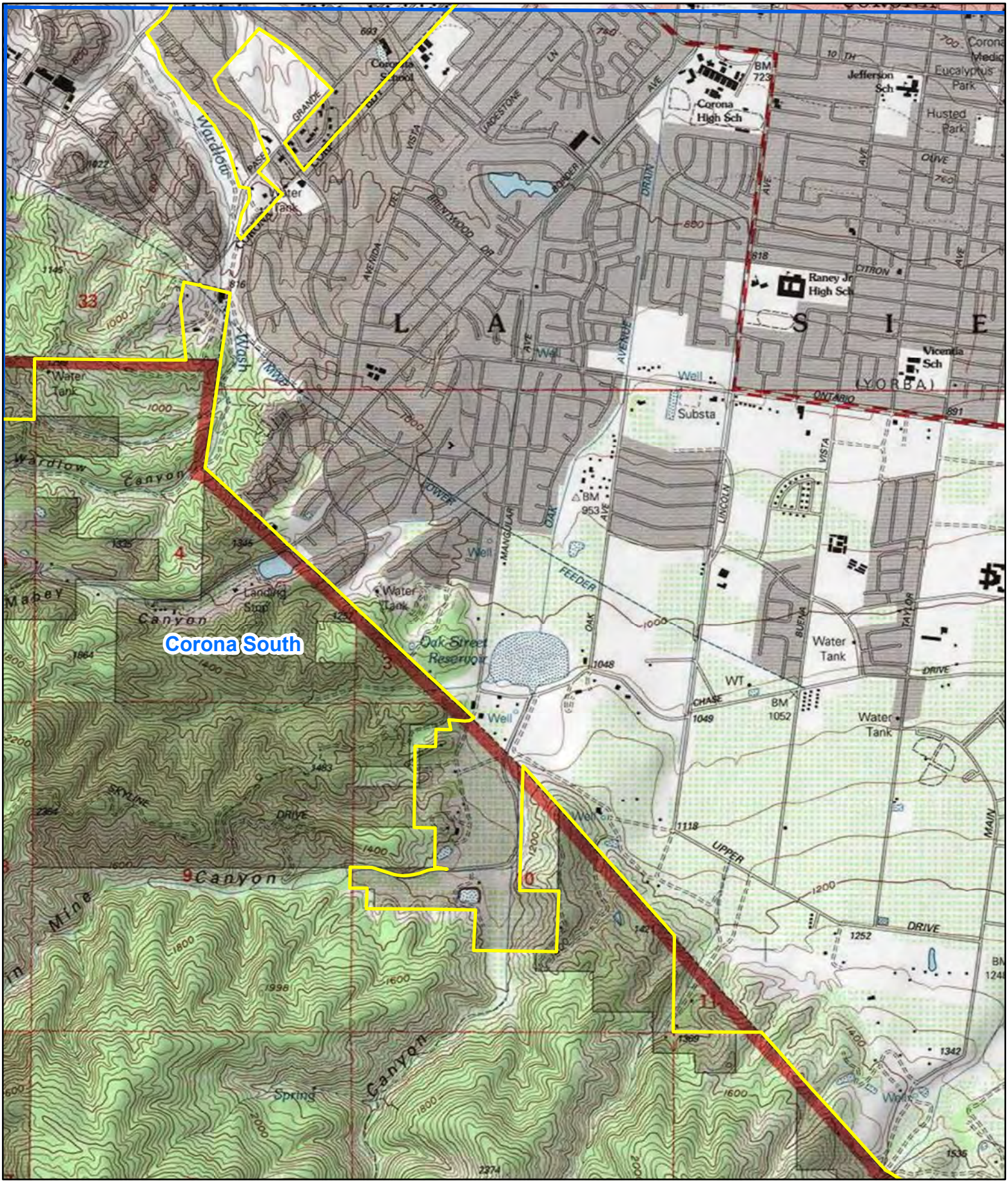


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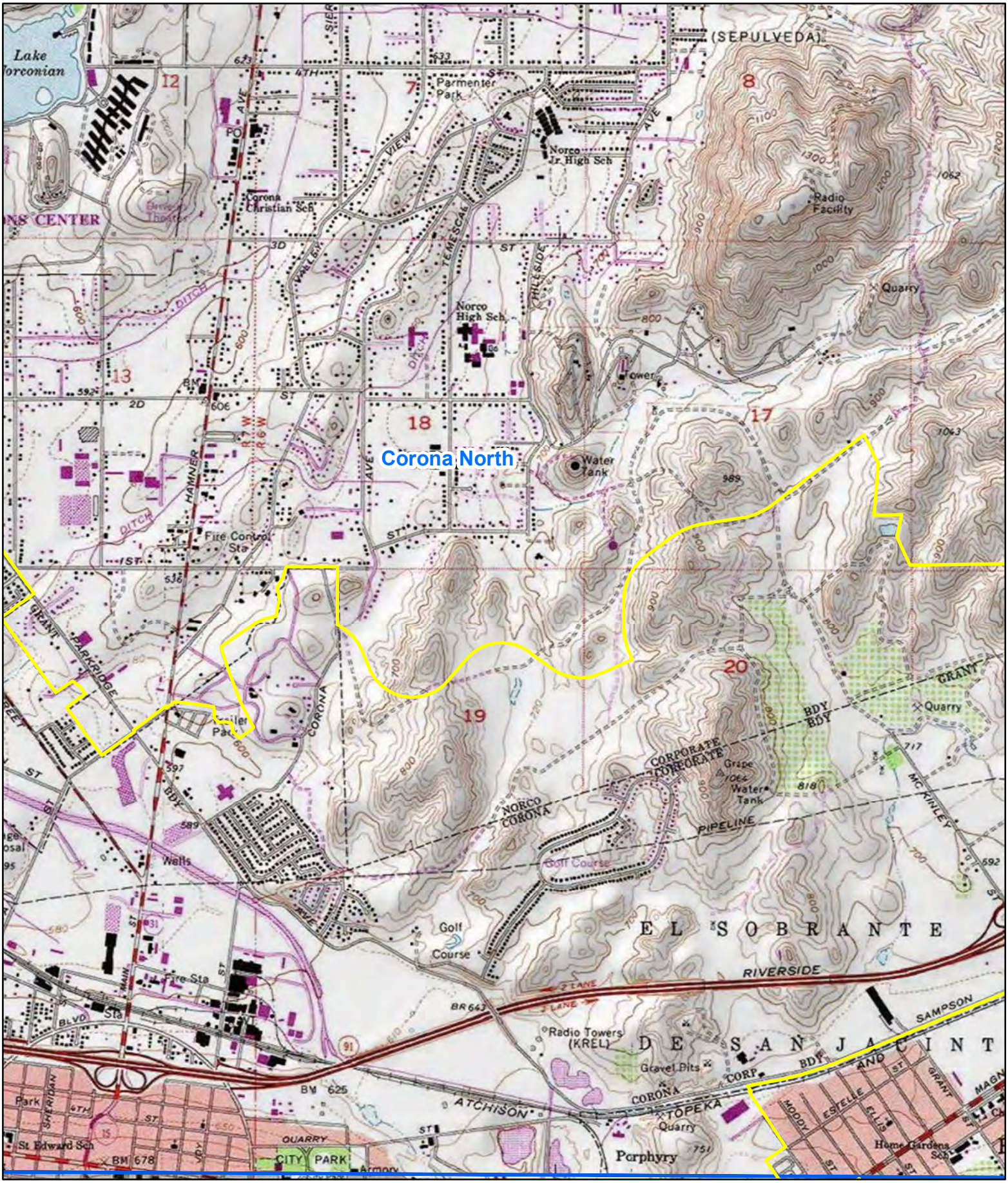
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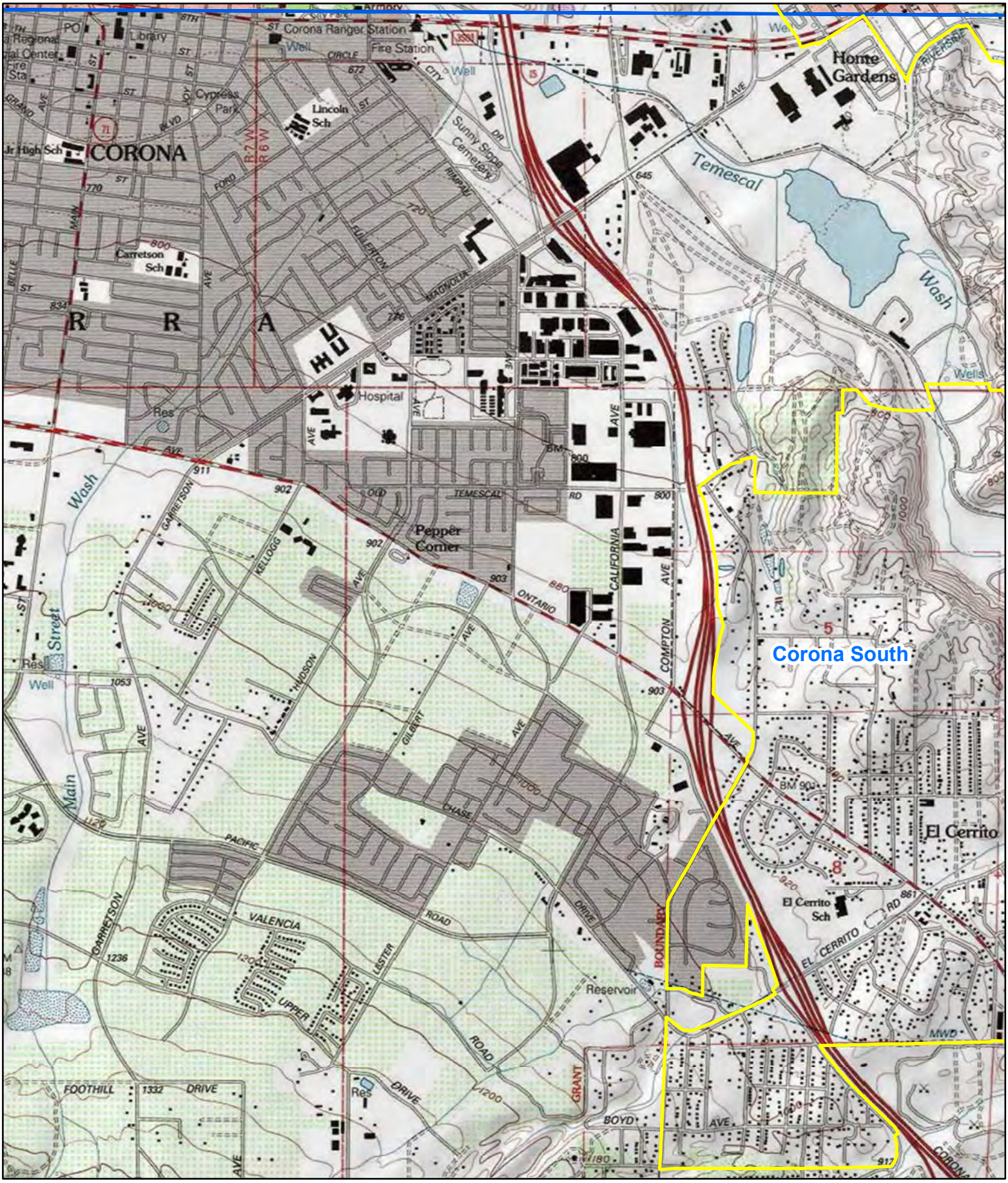


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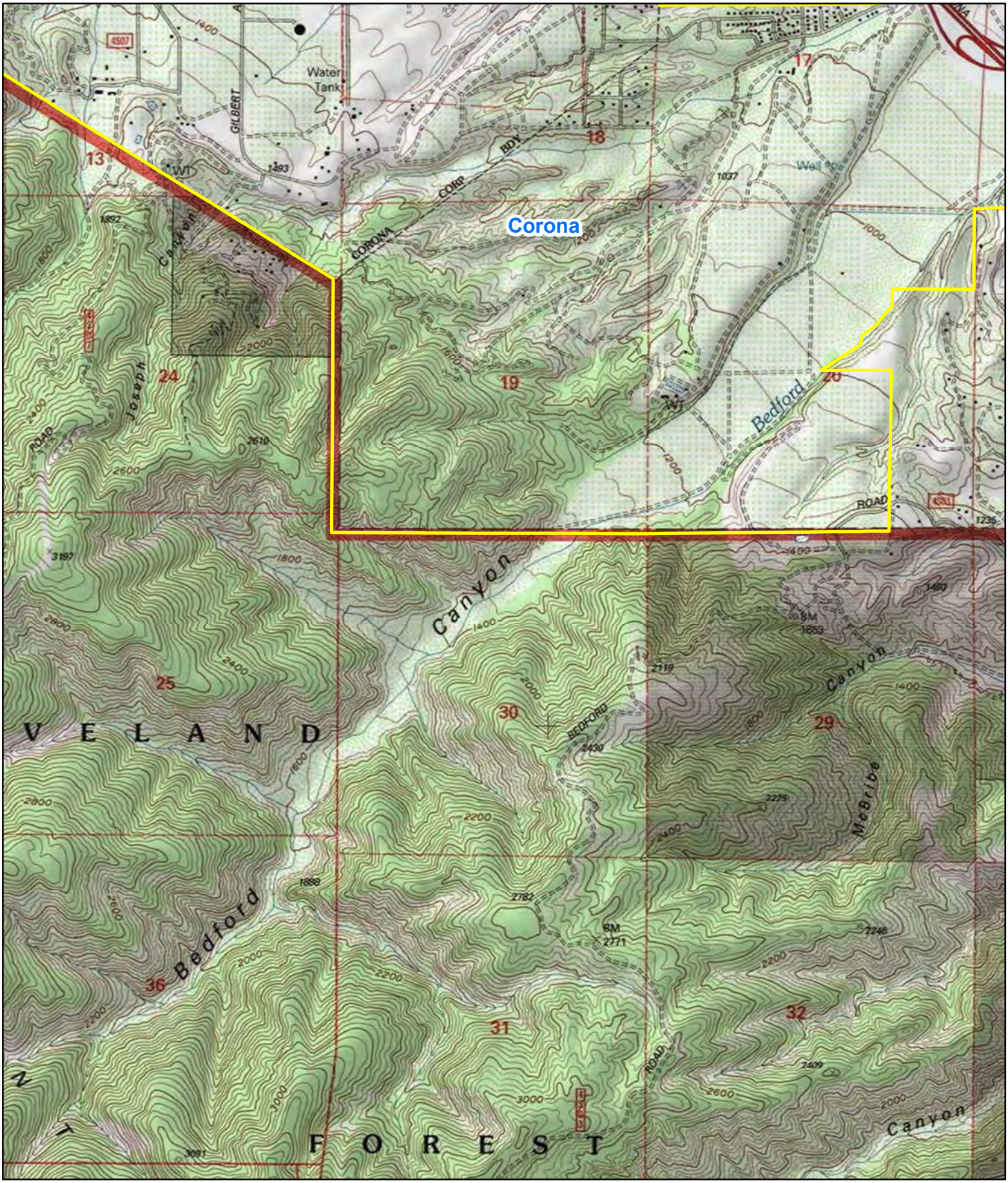
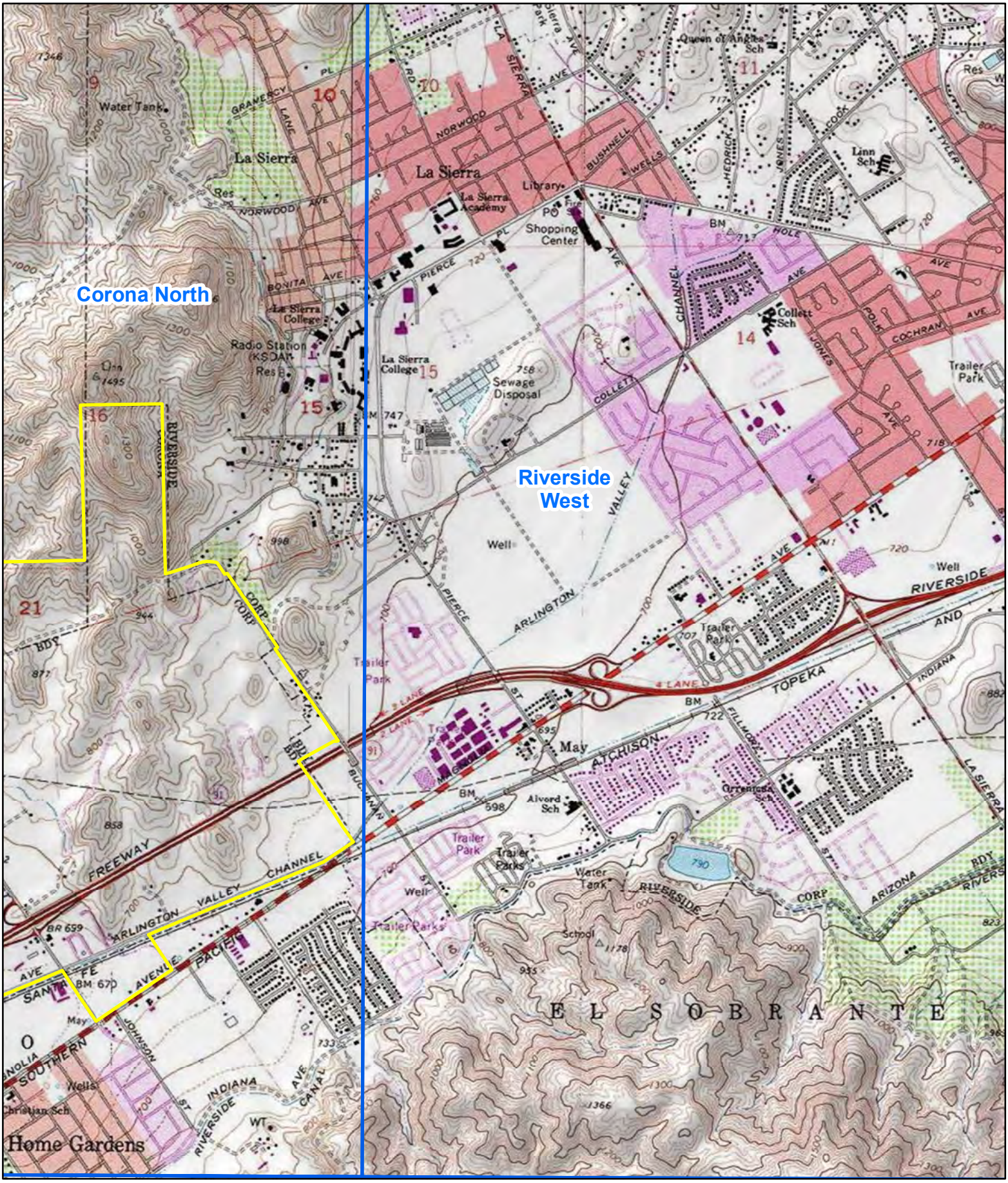


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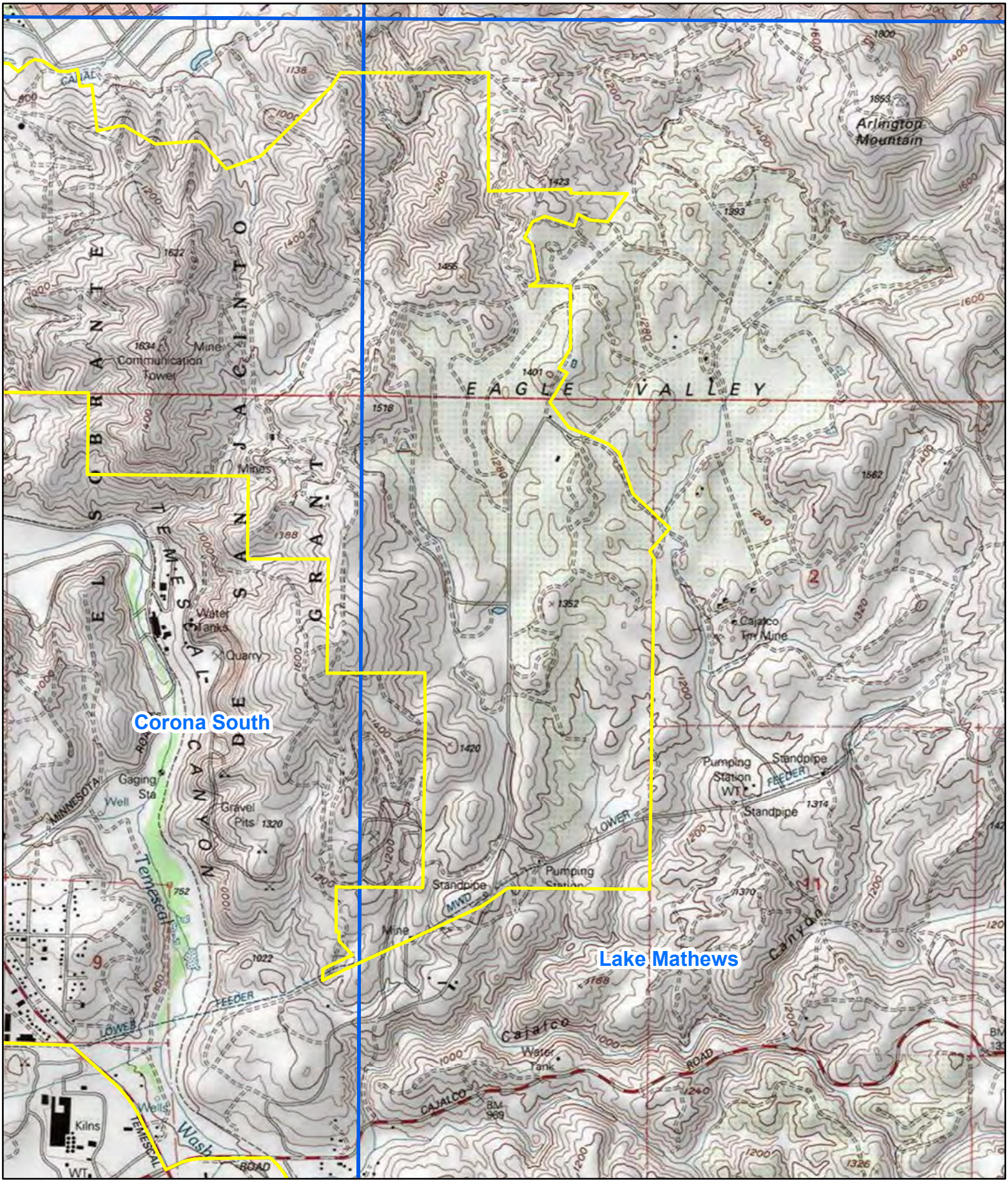
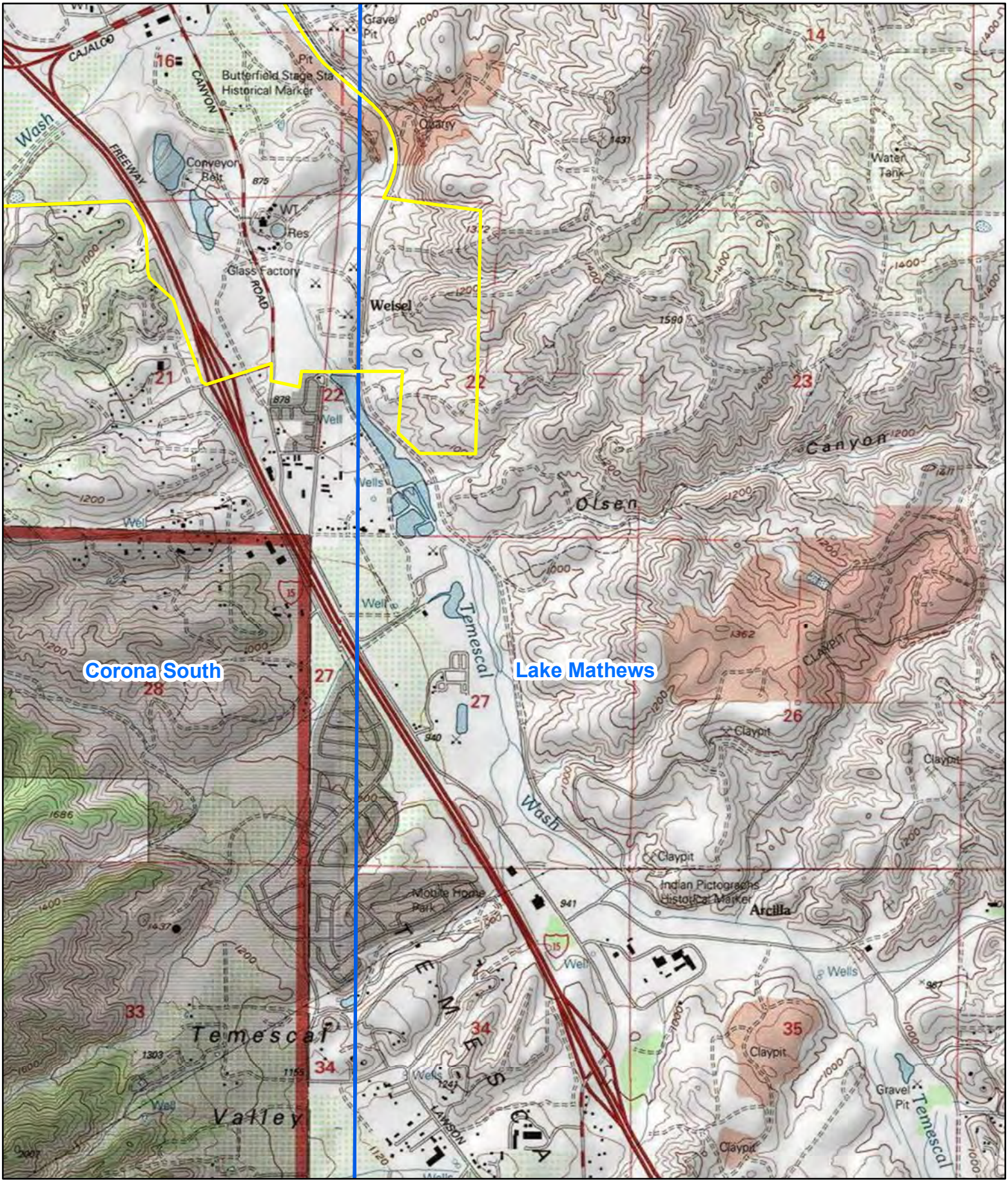


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RED TAIL ENVIRONMENTAL

RED TAIL ENVIRONMENTAL

April 6, 2020

Sandonne Goad
Chairperson
Gabrielino/Tongva Nation
106 1/2 Judge John Aiso St. #231, Los Angeles, CA, 90012
951-807-0479
sgoad@gabrielino-tongva.com

Re: City of Corona Reclaimed Water Project, Riverside County, California

Dear Ms. Goad,

Red Tail Environmental (Red Tail) is conducting an archaeological study for the City of Corona Reclaimed Water Project (project), located within the City of Corona, Riverside County, California. The project area includes the entire City of Corona and the city's sphere of influence. The project is subject to the California Environmental Quality Act (CEQA) and will assess the environmental impact of the City of Corona's Reclaimed Water Master Plan. The City of Corona is the lead agency. The project area is shown on the following USGS 7.5' Quad Maps:

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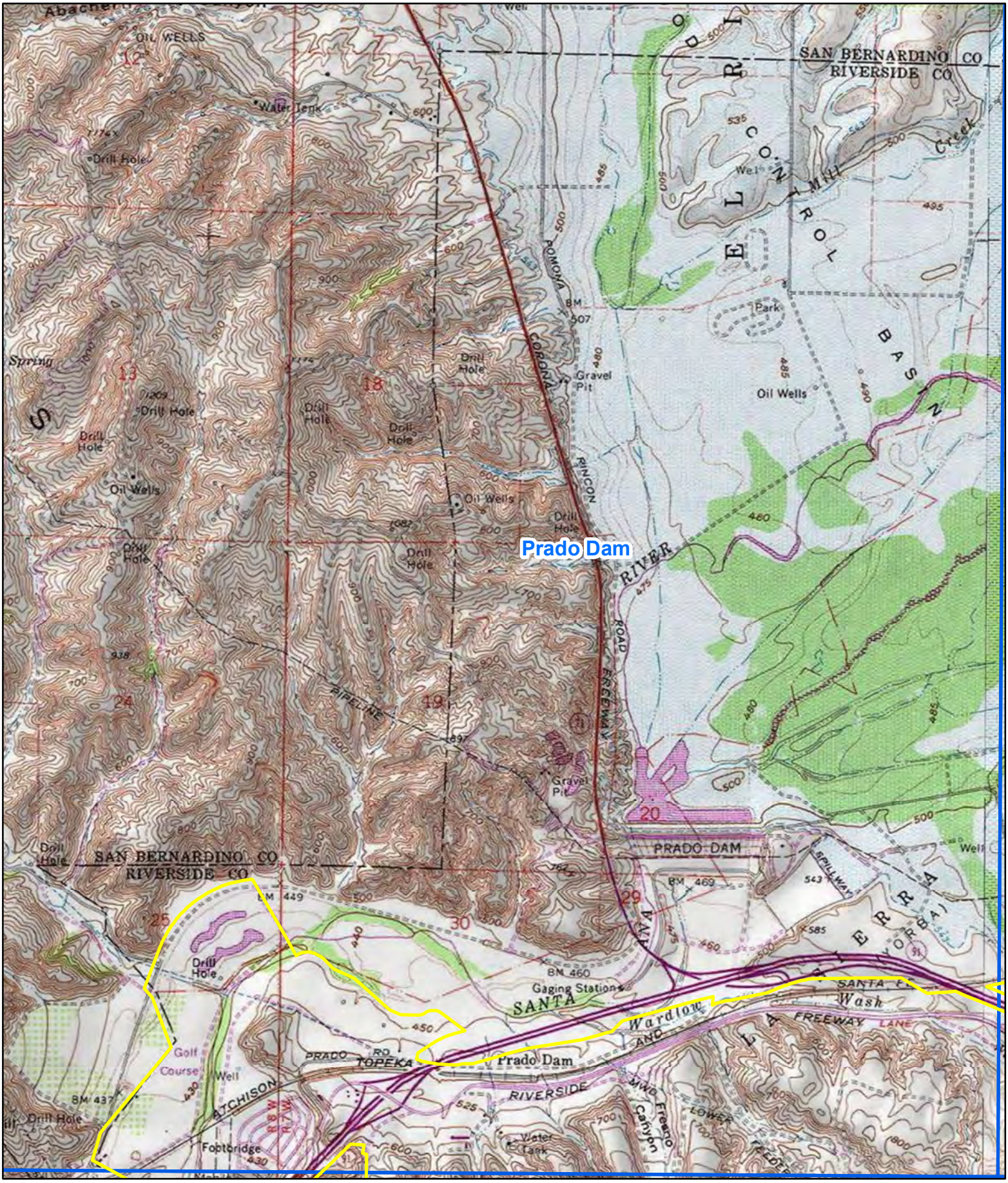


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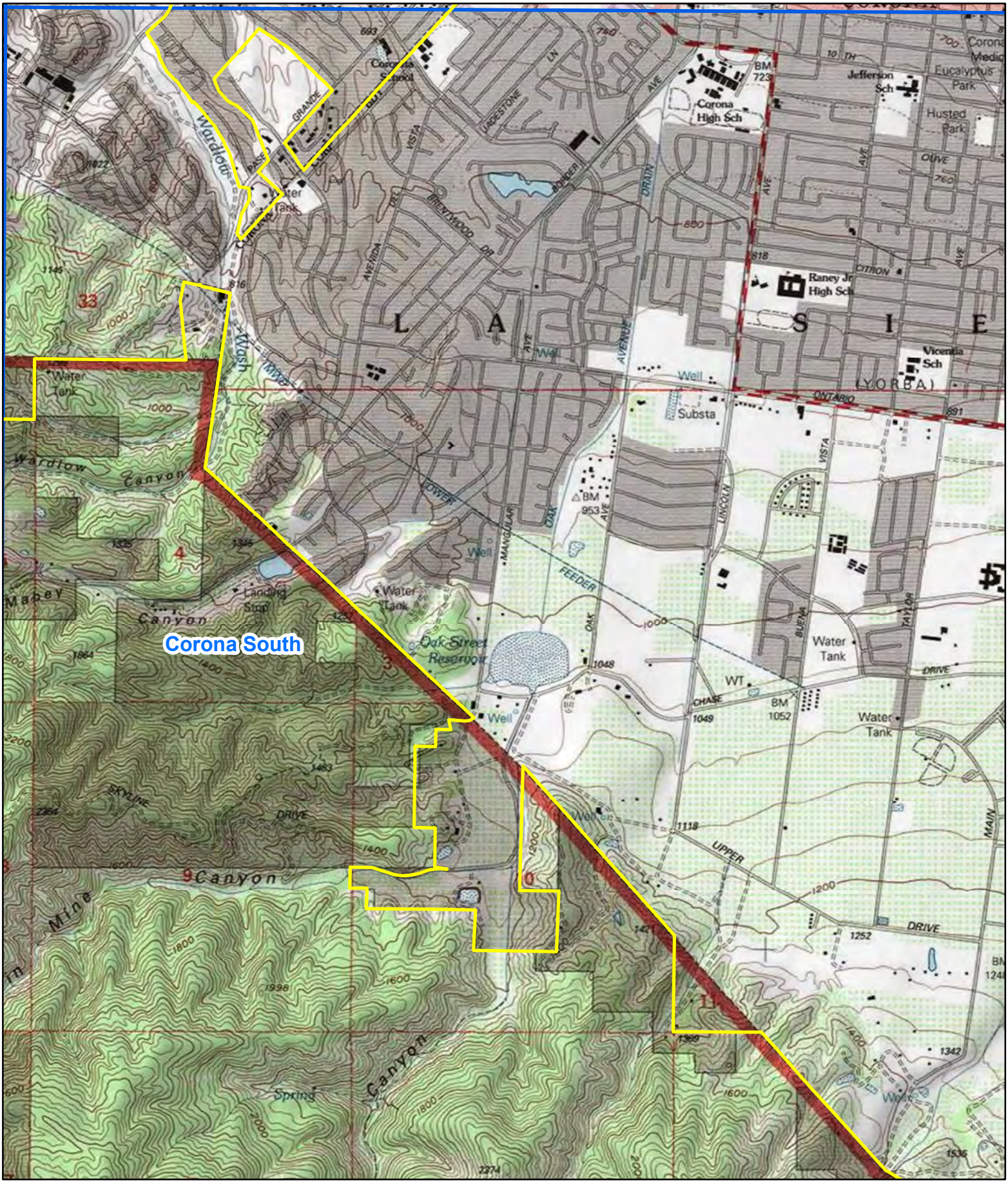


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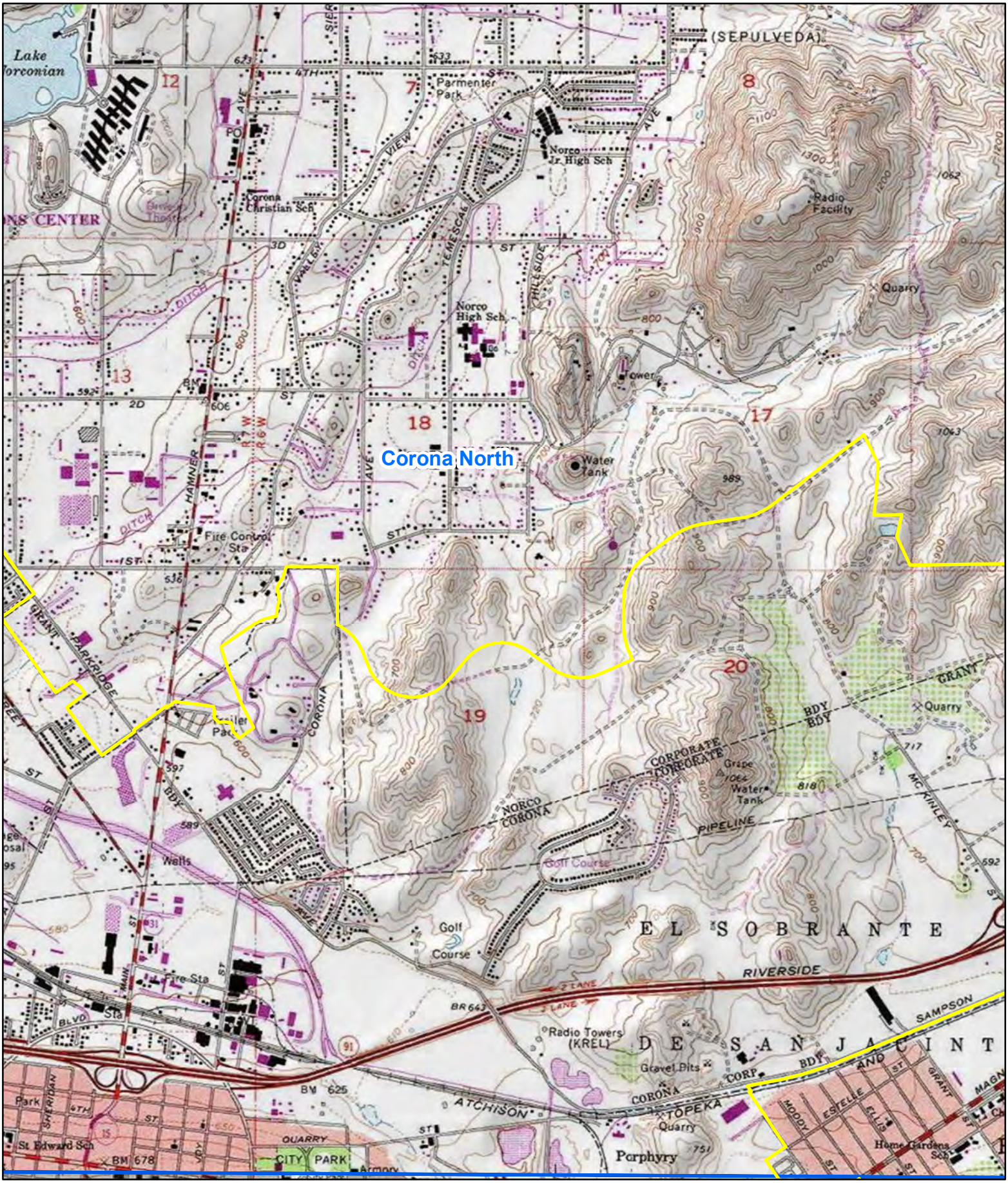
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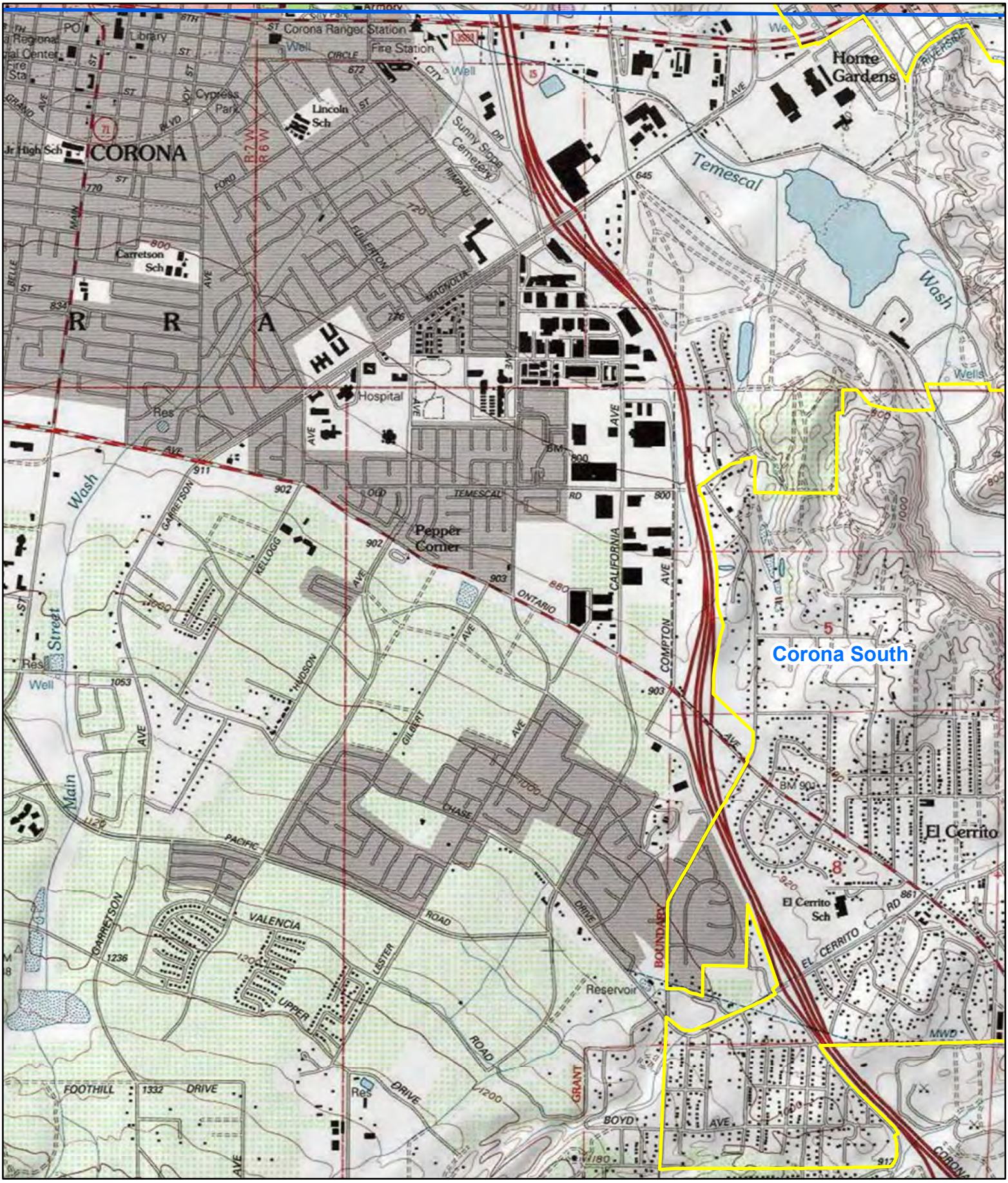


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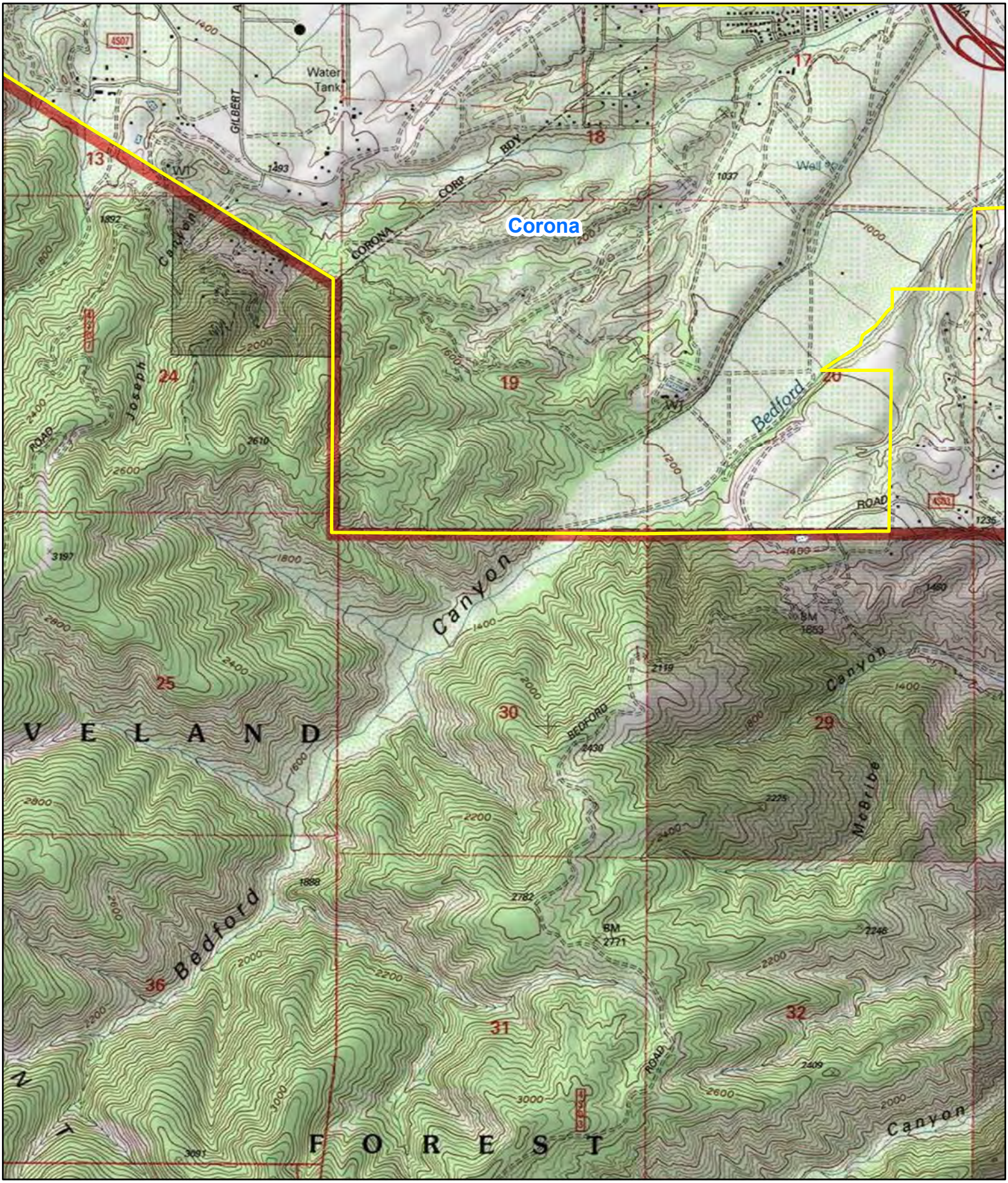
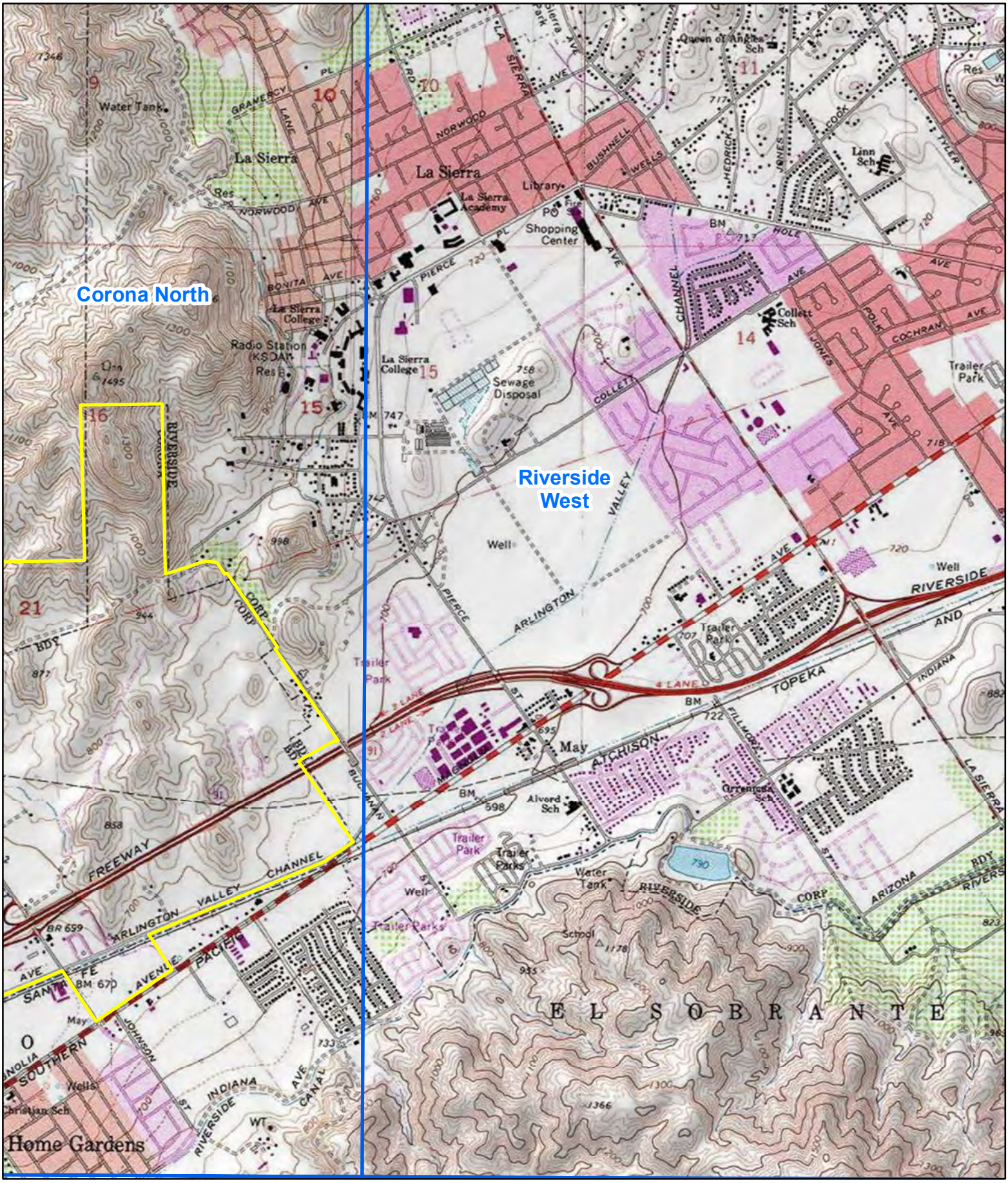


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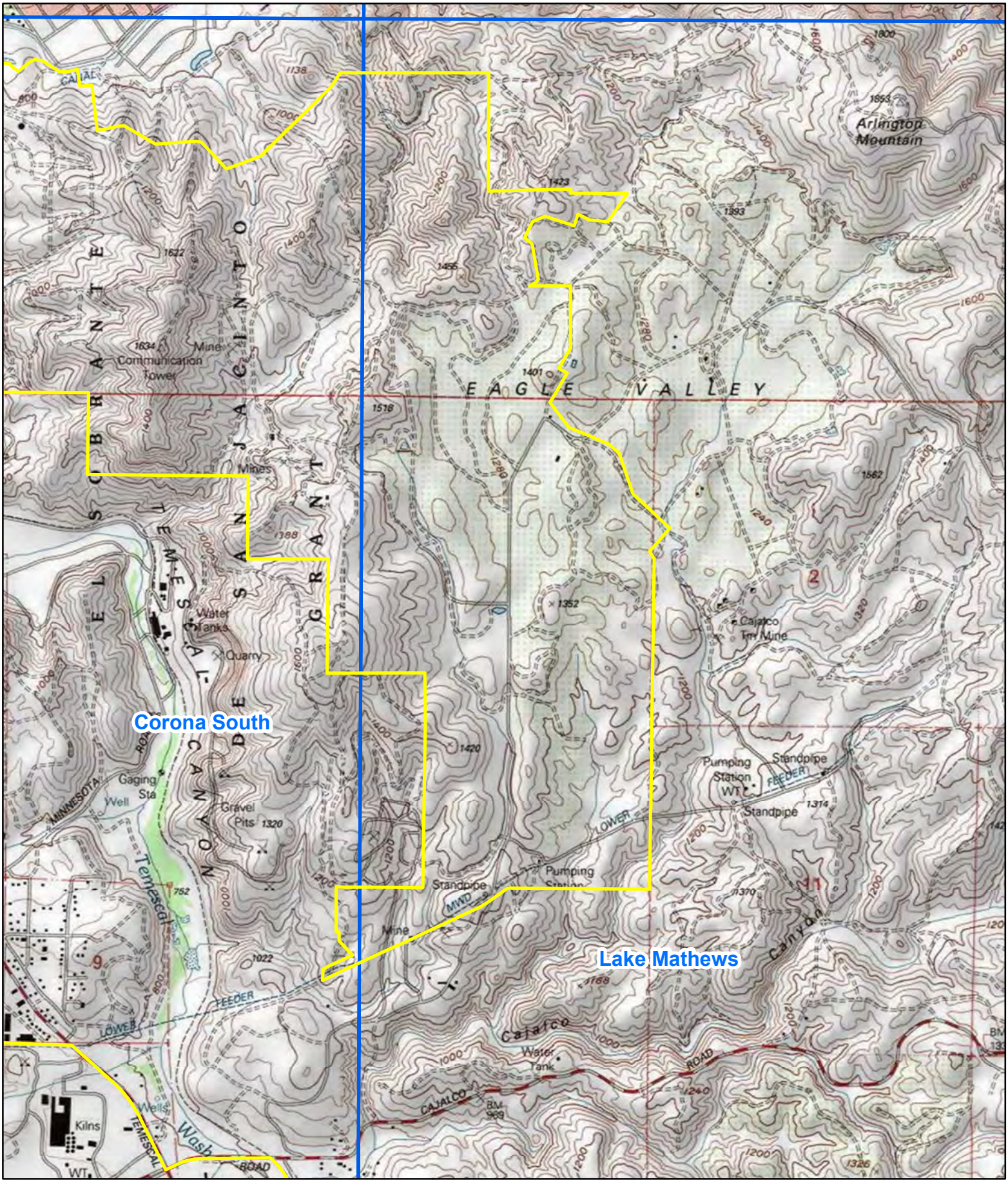
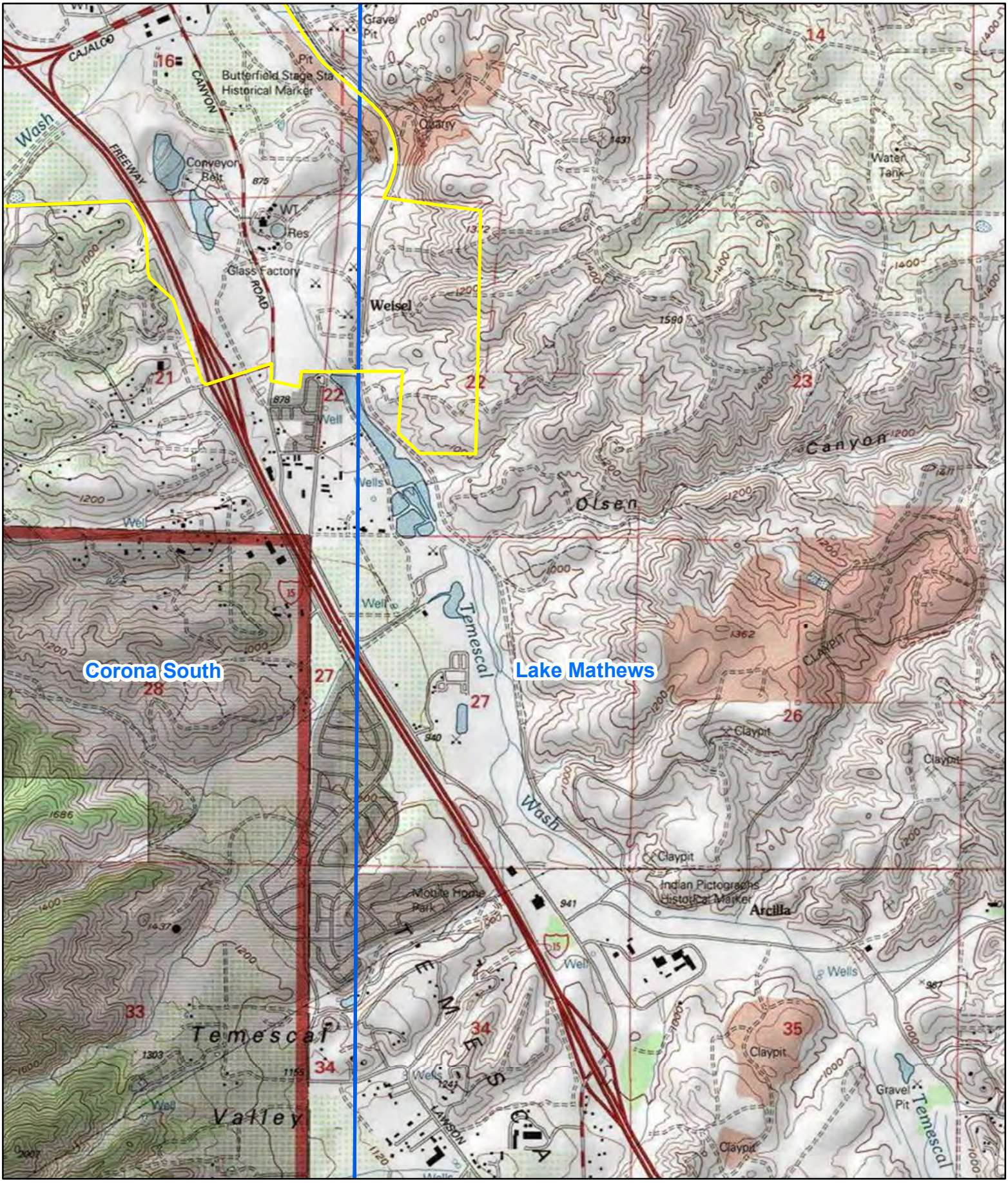


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RED TAIL ENVIRONMENTAL

RED TAIL ENVIRONMENTAL

April 6, 2020

San Luis Rey Tribal Council
San Luis Rey Band of Mission Indians
1889 Sunset Drive, Vista, CA, 92081
760-724-8505
cjmojado@slrmissionindians.org

Re: City of Corona Reclaimed Water Project, Riverside County, California

To Whom It May Concern,

Red Tail Environmental (Red Tail) is conducting an archaeological study for the City of Corona Reclaimed Water Project (project), located within the City of Corona, Riverside County, California. The project area includes the entire City of Corona and the city's sphere of influence. The project is subject to the California Environmental Quality Act (CEQA) and will assess the environmental impact of the City of Corona's Reclaimed Water Master Plan. The City of Corona is the lead agency. The project area is shown on the following USGS 7.5' Quad Maps:

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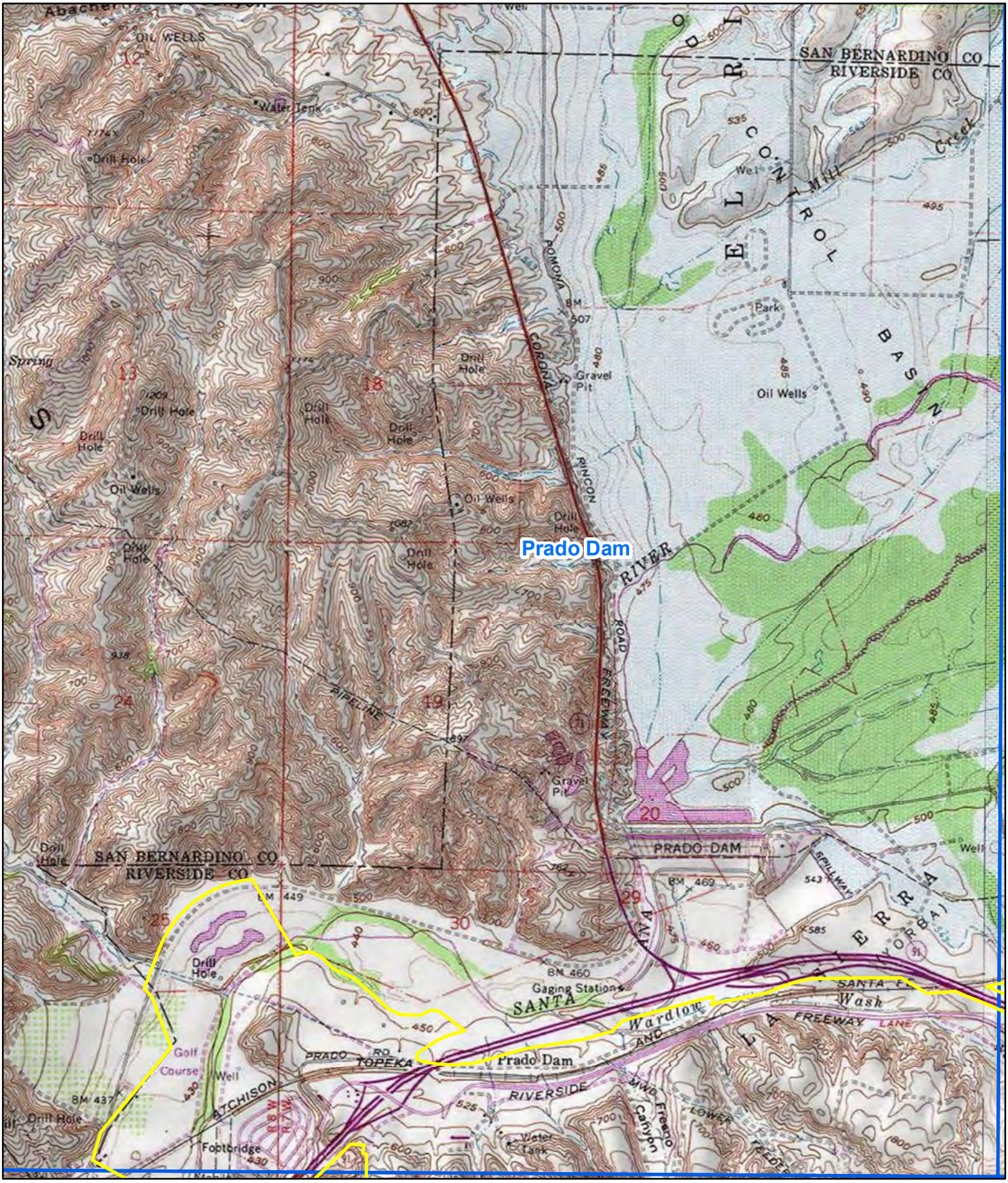


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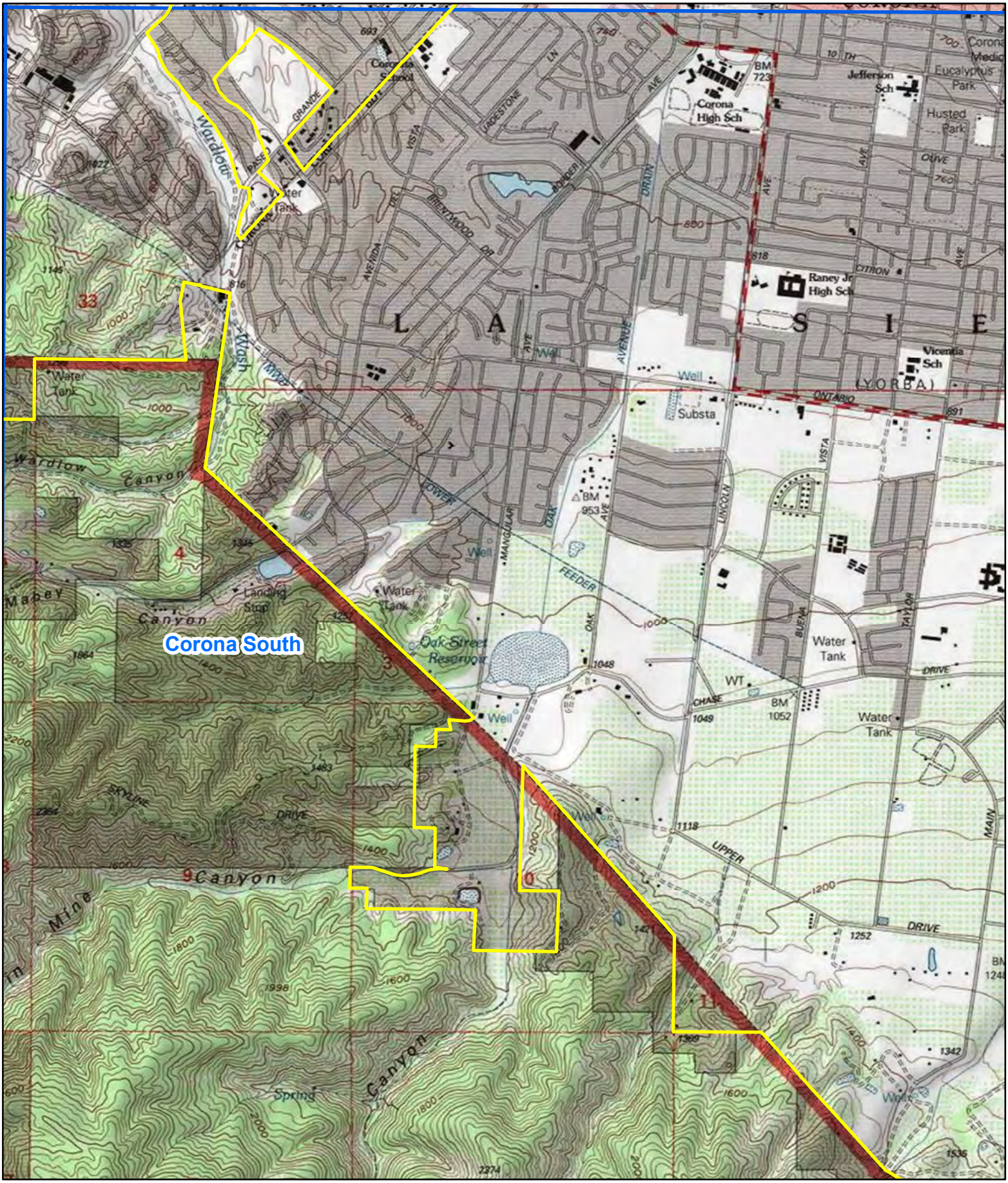


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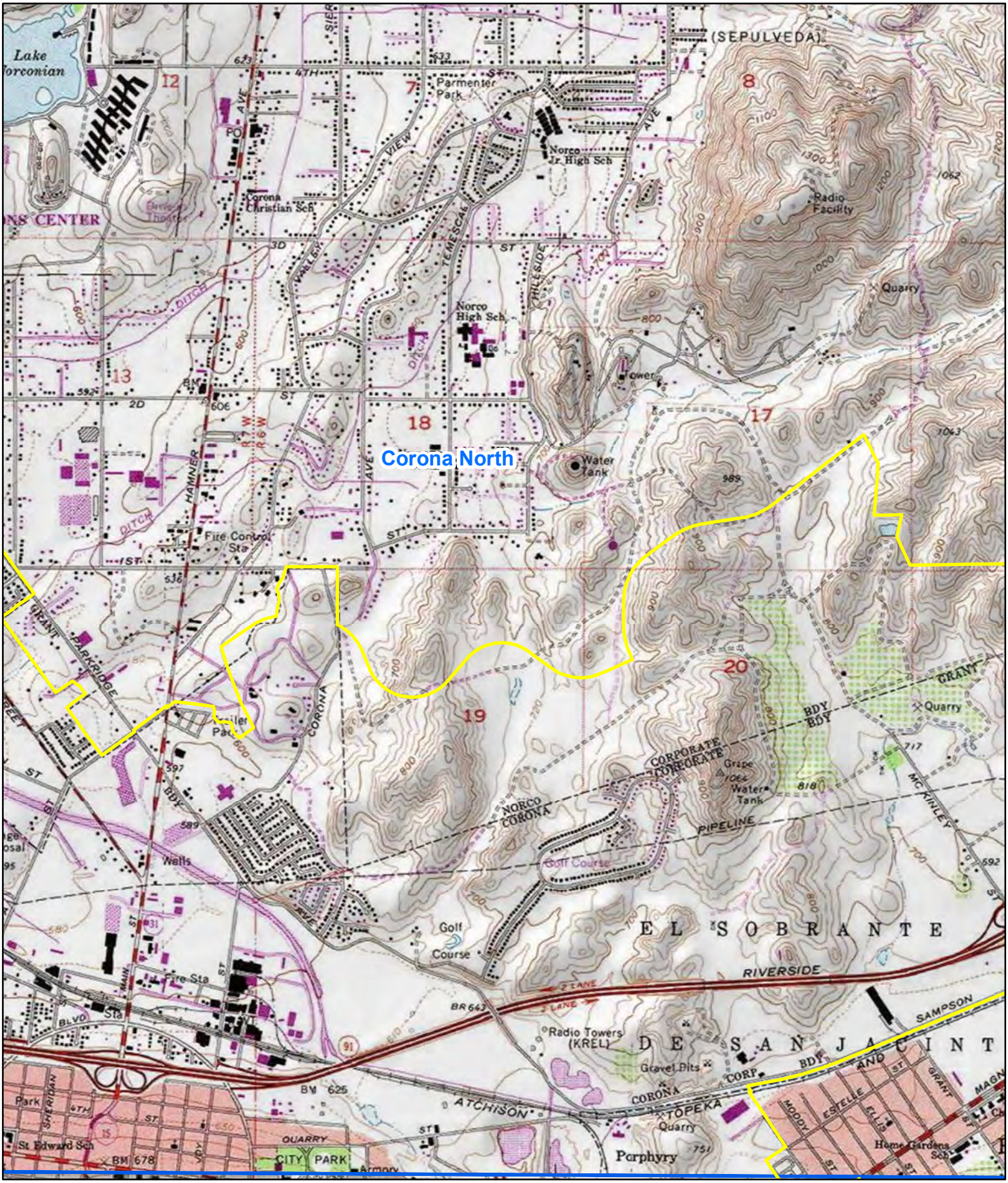
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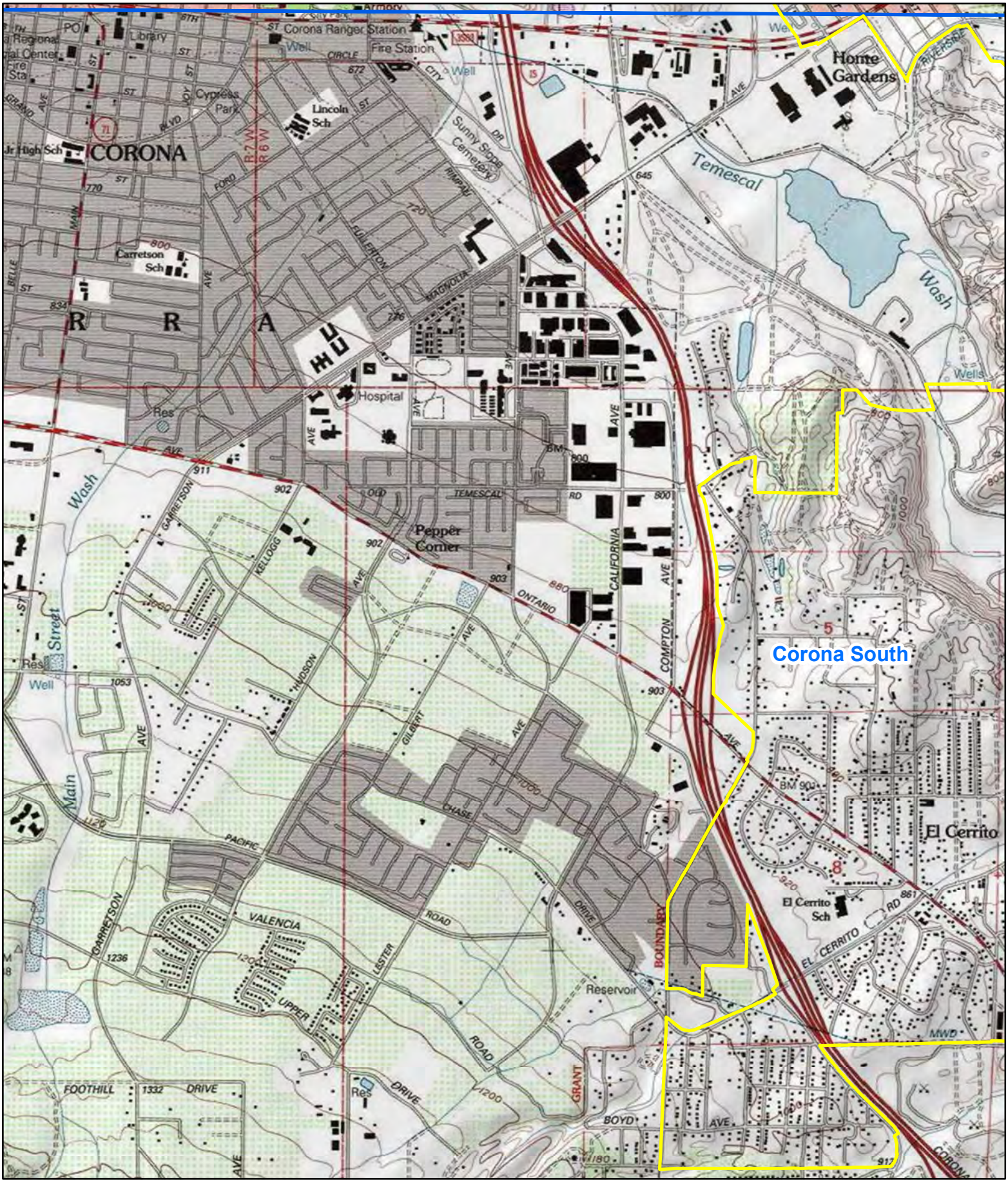


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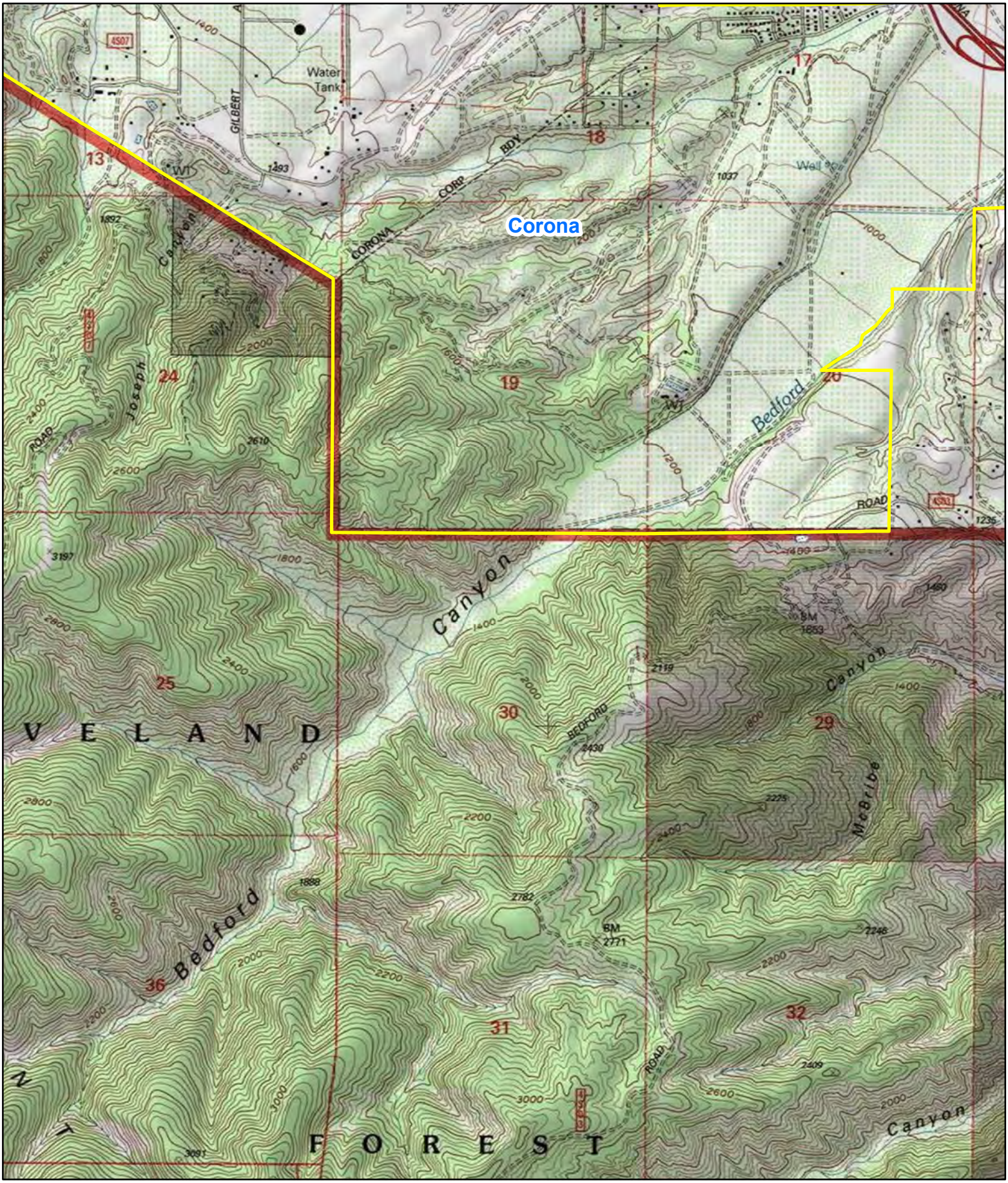


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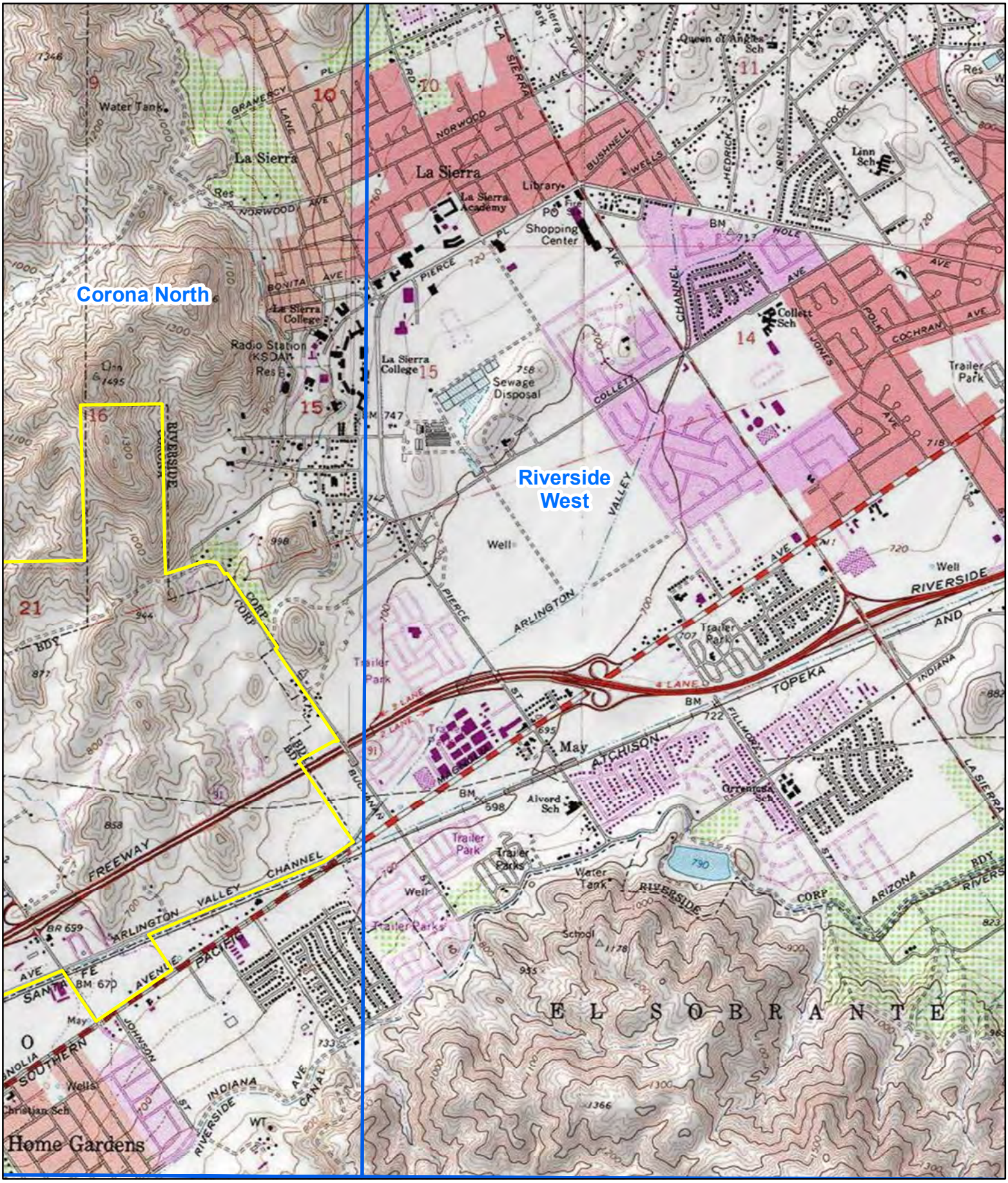


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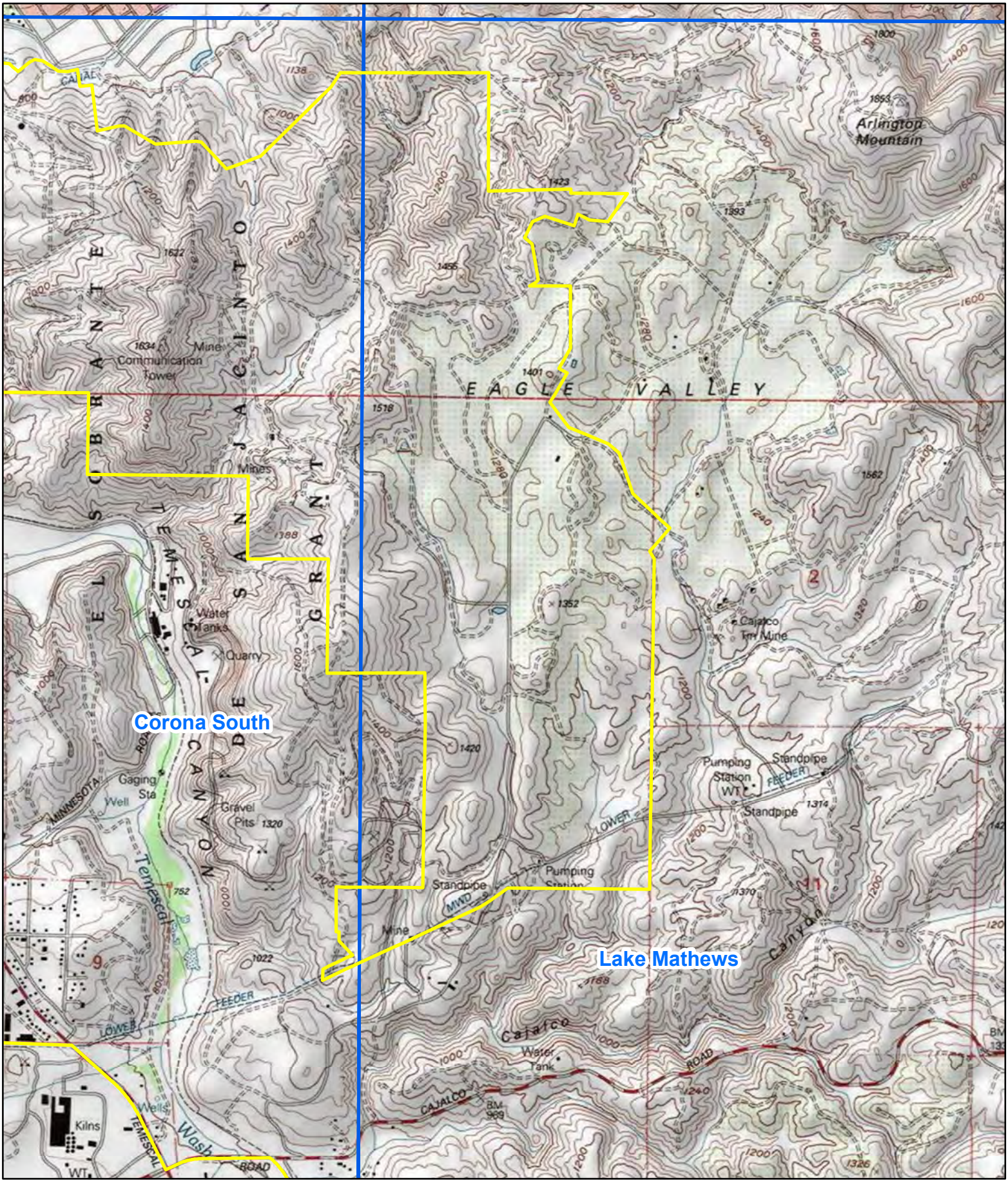
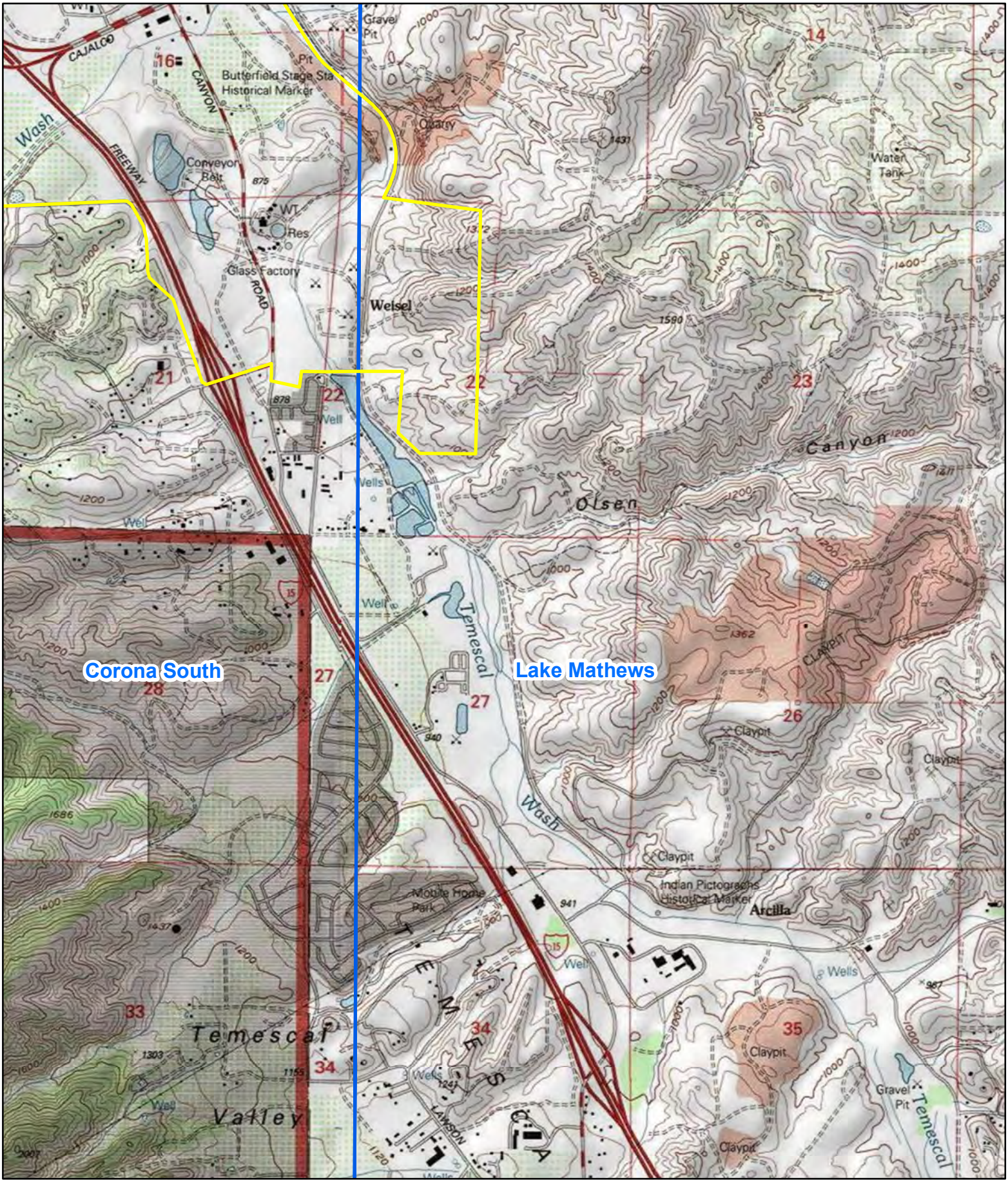


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RED TAIL ENVIRONMENTAL

RED TAIL ENVIRONMENTAL

April 6, 2020

Temet Aguilar
Chairperson
Pauma Band of Luiseno Indians
PO Box 369, Pauma Valley, CA, 92061
760-742-1289
bennaecalac@aol.com

Re: City of Corona Reclaimed Water Project, Riverside County, California

Dear Mr. Aguilar,

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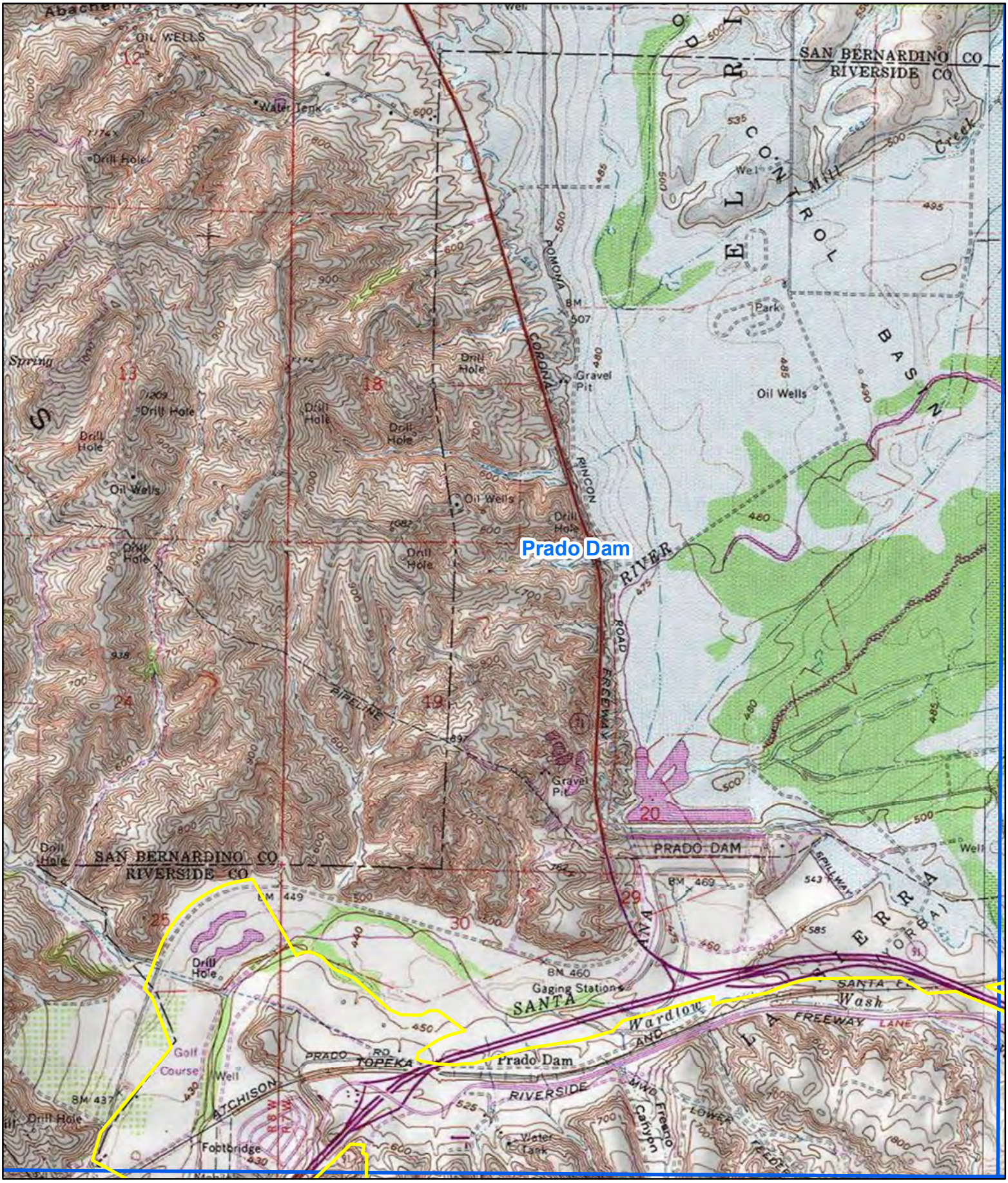


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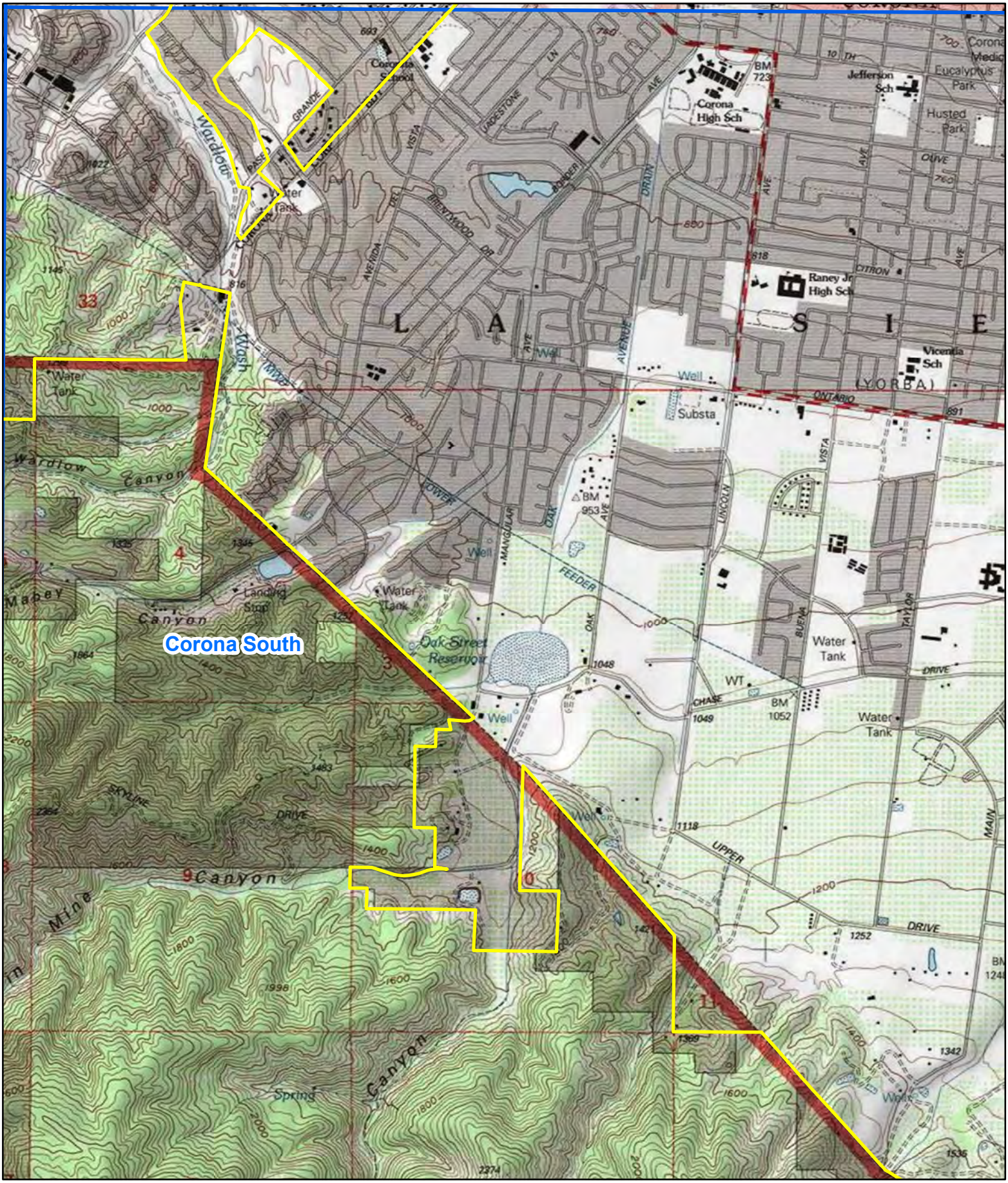


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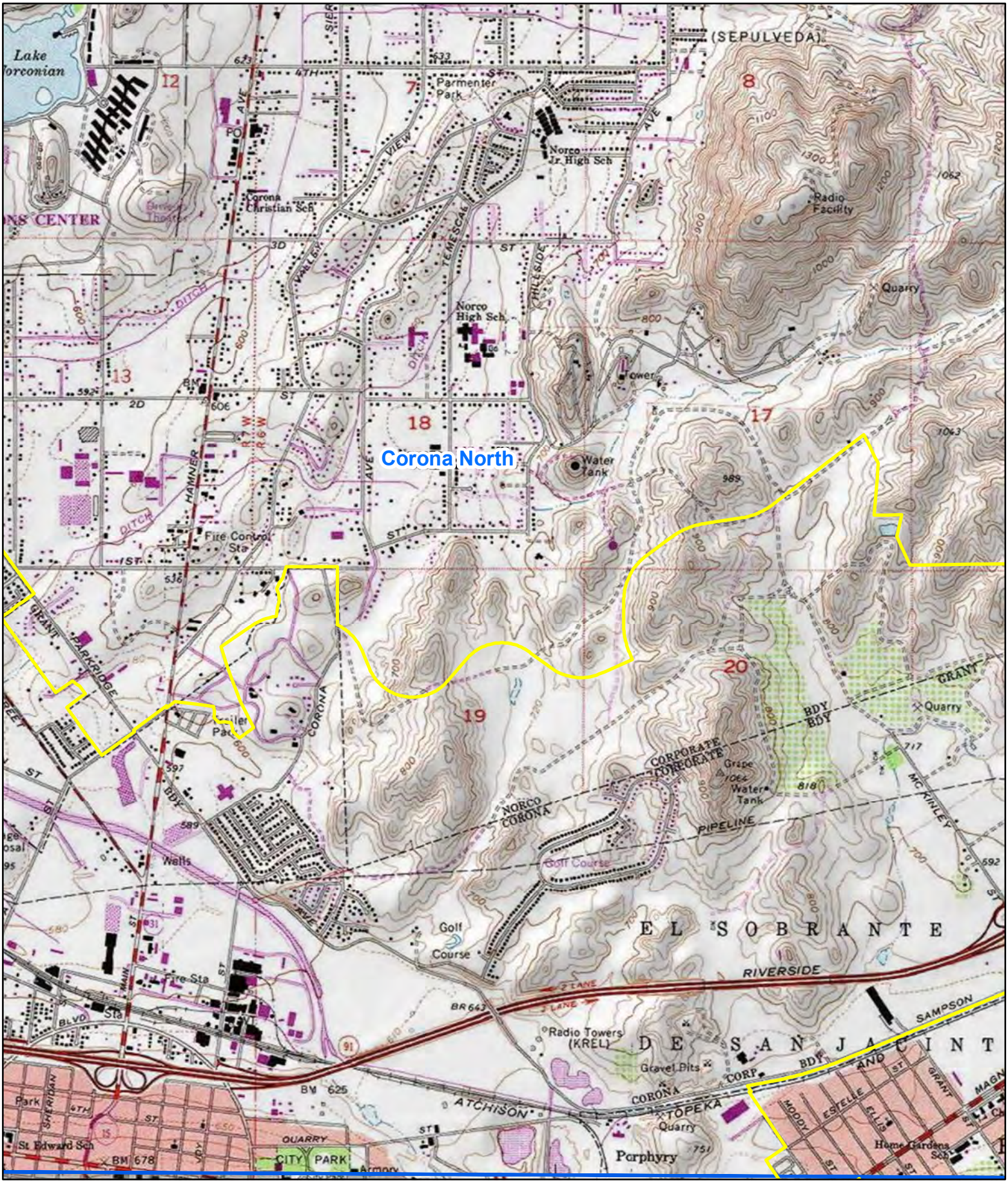
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RED TAIL ENVIRONMENTAL

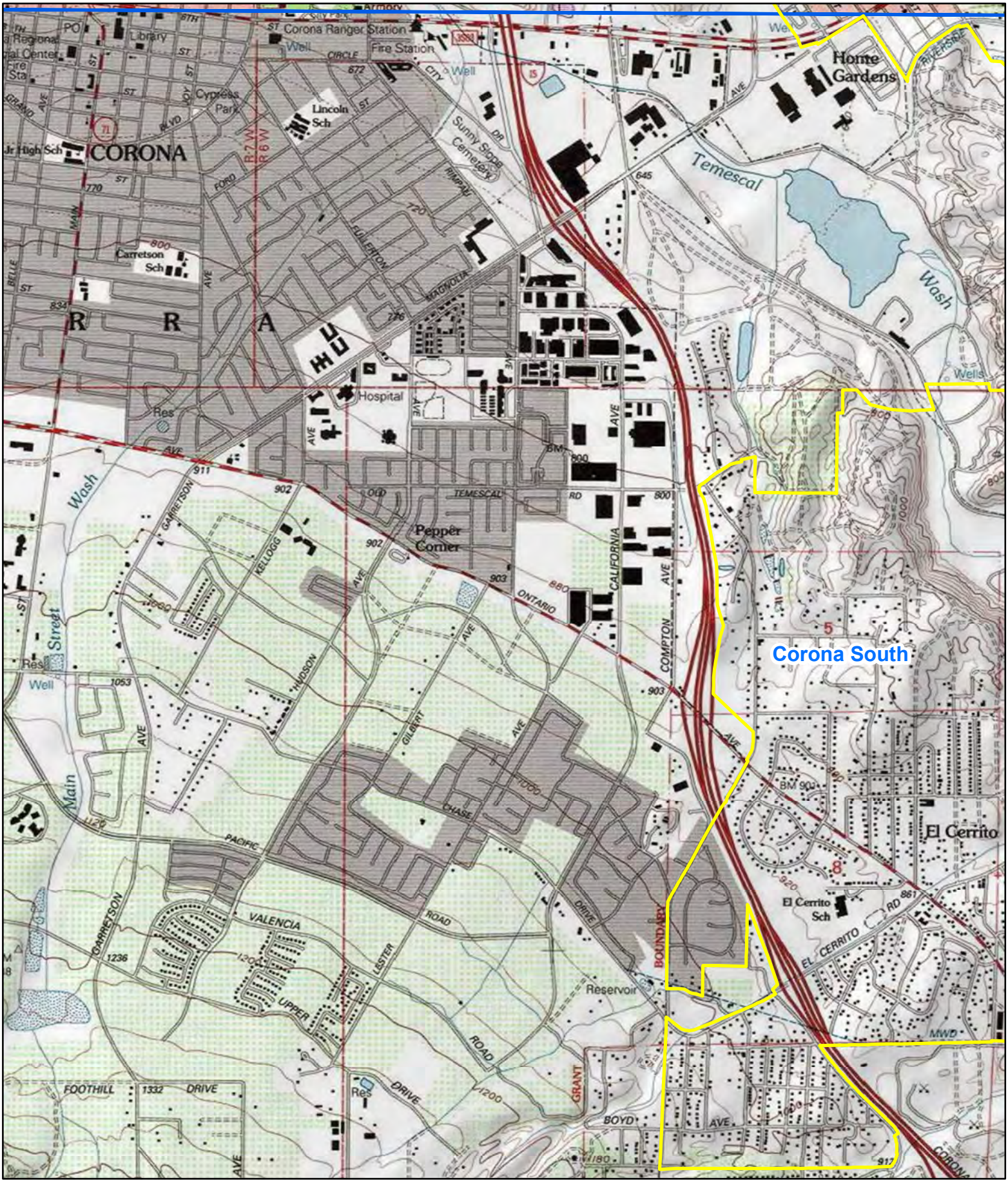


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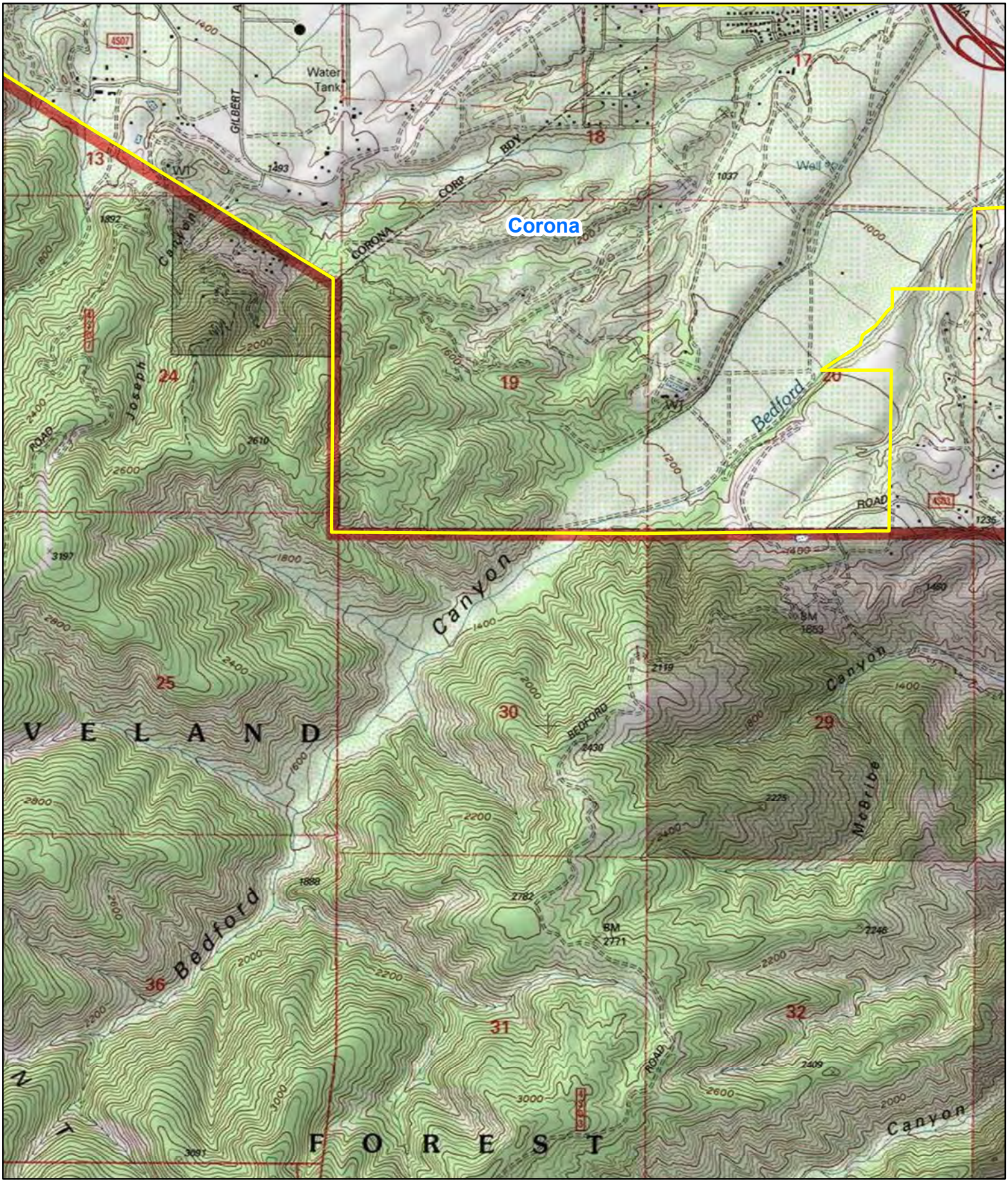
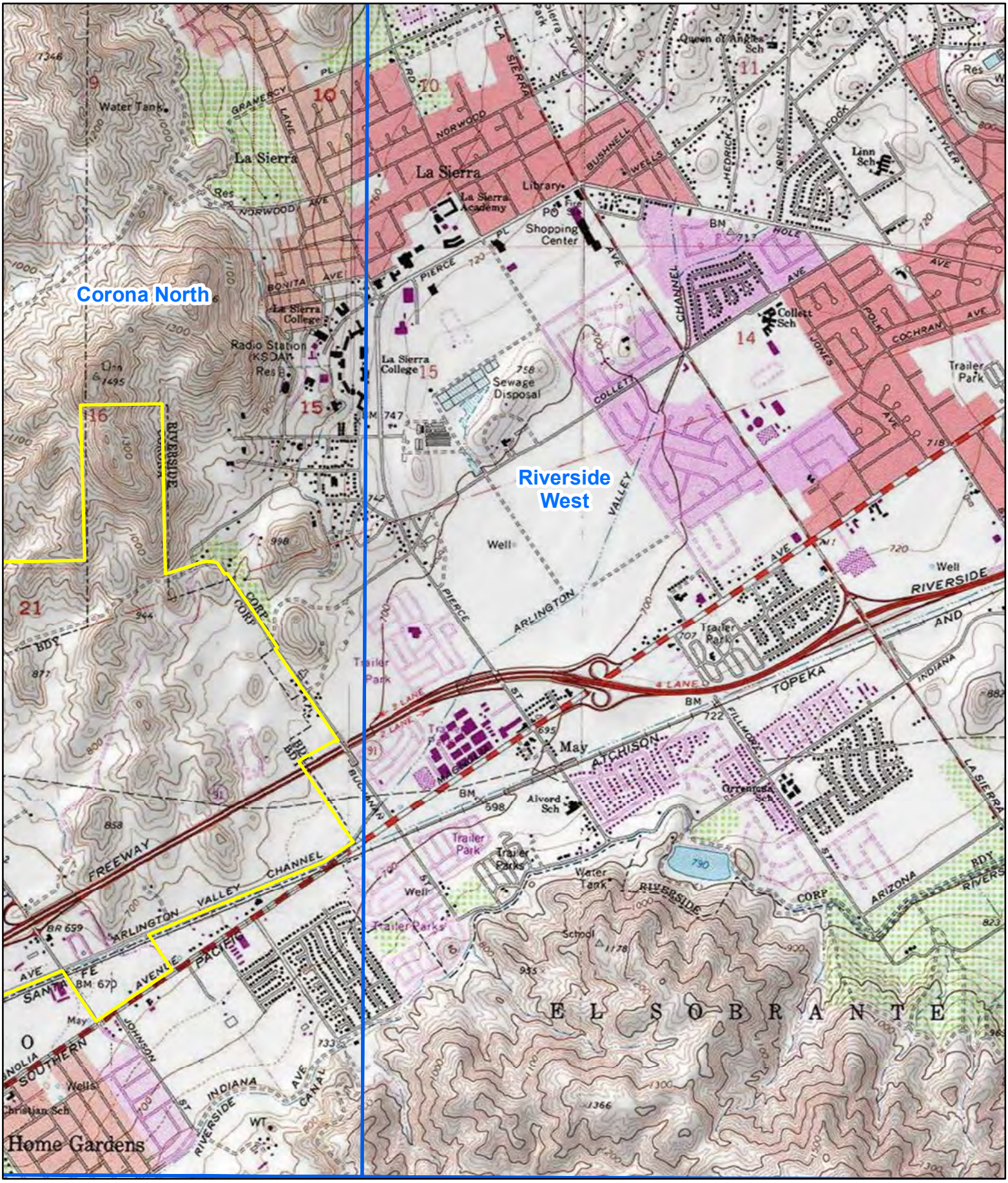


Figure 1. Project Area

RED TAIL ENVIRONMENTAL



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Legend

- Project Area
- 7.5' USGS Quads

Figure 1. Project Area

RED TAIL ENVIRONMENTAL

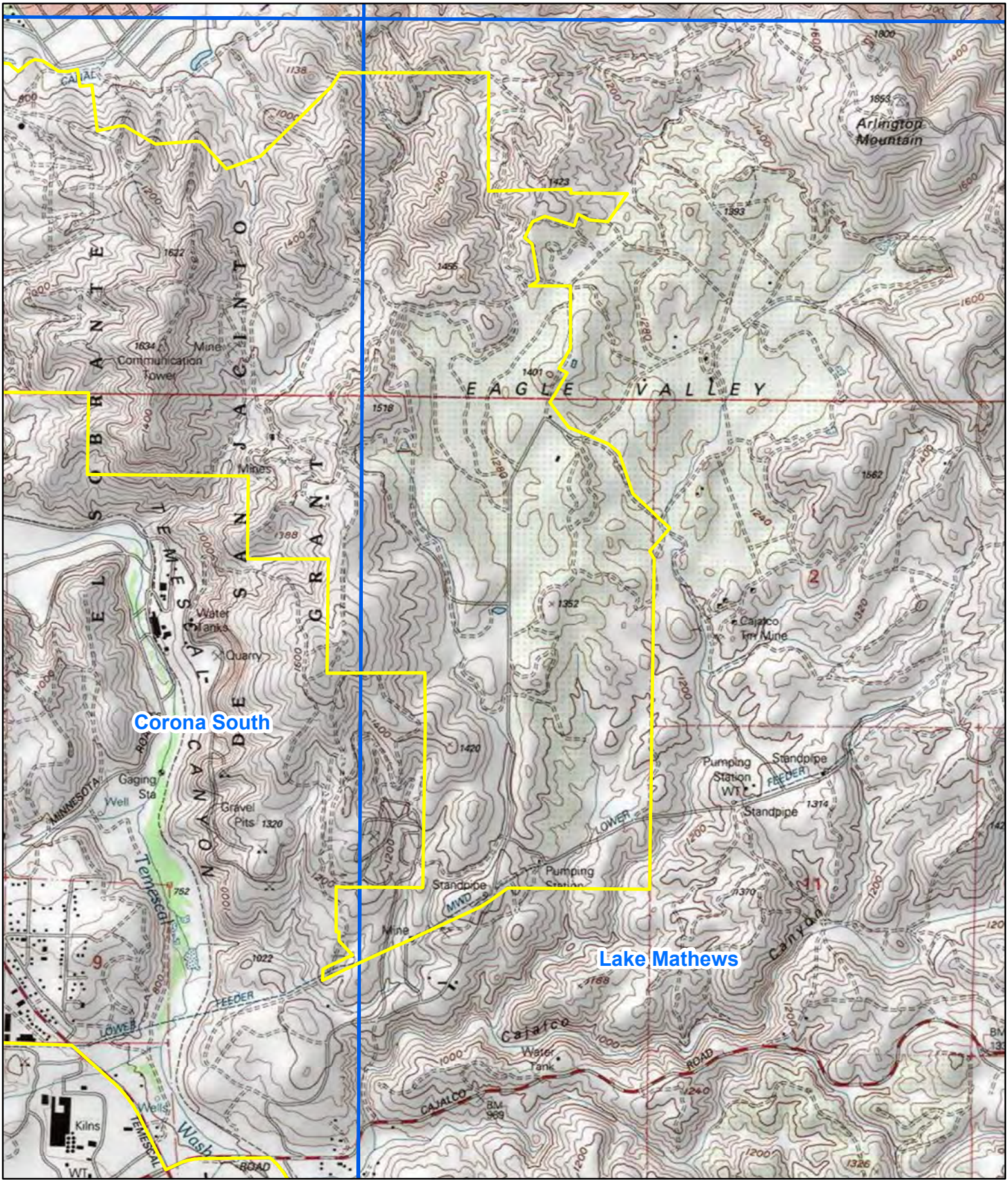
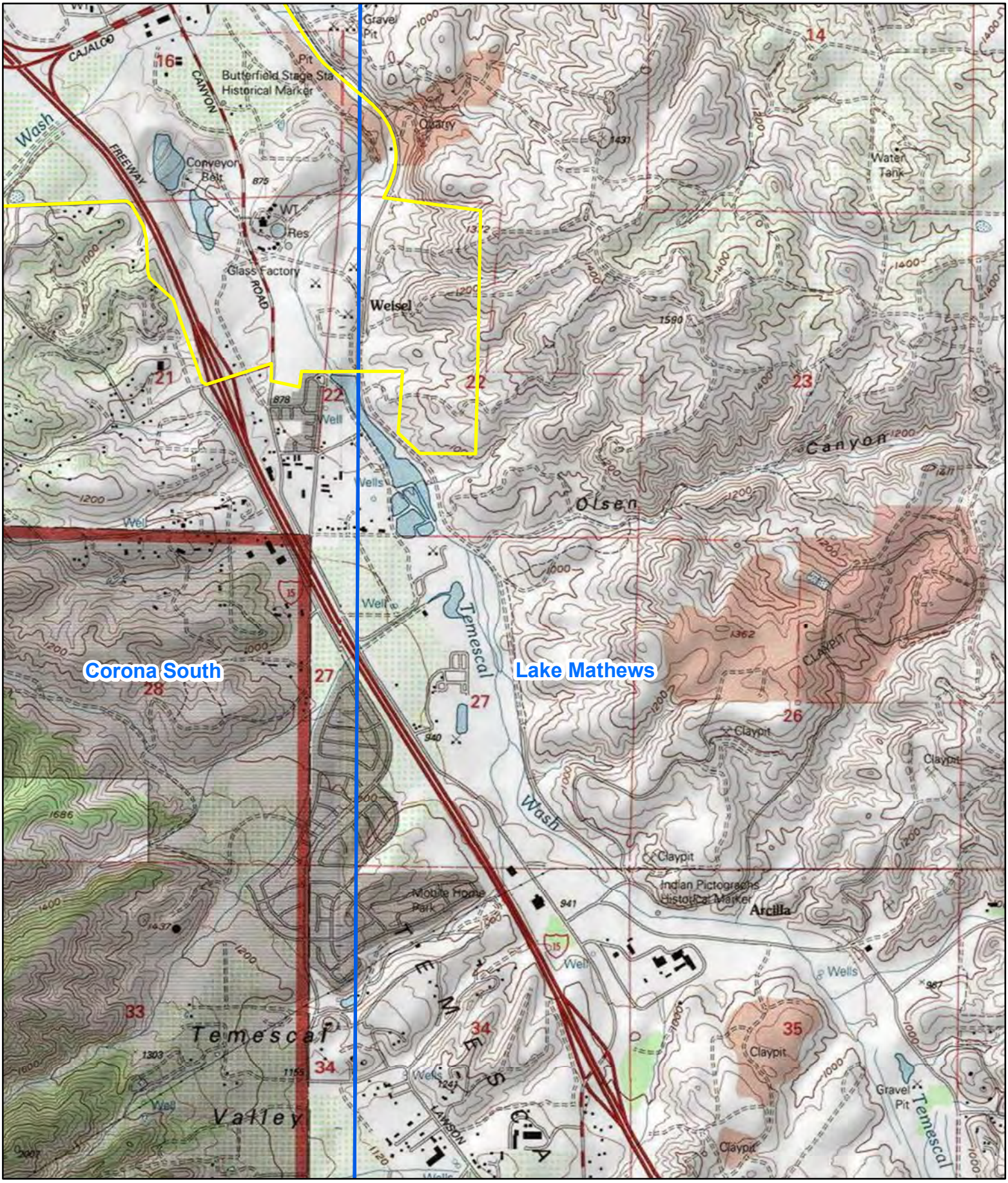


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Figure 1. Project Area

RED TAIL ENVIRONMENTAL

RED TAIL ENVIRONMENTAL

April 6, 2020

Thomas Tortez
Chairperson
Torres-Martinez Desert Cahuilla Indians
PO Box 1160, Thermal, CA, 92274
760-397-0300
tmchair@torresmartinez.org

Re: City of Corona Reclaimed Water Project, Riverside County, California

Dear Mr. Tortez,

Red Tail Environmental (Red Tail) is conducting an archaeological study for the City of Corona Reclaimed Water Project (project), located within the City of Corona, Riverside County, California. The project area includes the entire City of Corona and the city's sphere of influence. The project is subject to the California Environmental Quality Act (CEQA) and will assess the environmental impact of the City of Corona's Reclaimed Water Master Plan. The City of Corona is the lead agency. The project area is shown on the following USGS 7.5' Quad Maps:

- USGS 7.5' Prado Dam Quad map within:
  - Township 3 South Range 7 West Section 30,
  - Township 3 South Range 8 West Section 25,
  - Unsectioned portions of the La Sierra Yorba Land Grant.
- USGS 7.5' Black Star Canyon Quad map within:
  - Township 3 South Range 7 West Sections 32 and 33,
  - Township 3 South Range 8 West Section 36,
  - Township 4 South Range 7 West Section 5,
  - Unsectioned portions of the La Sierra Yorba Land Grant.
- USGS 7.5' Corona South Quad map within:
  - Township 3 South Range 7 West Section 33,
  - Township 4 South Range 6 West Sections 5, 8, 16, 17, 18, 19, 20, 21, and 22,
  - Township 4 South Range 7 West Sections 5, 9, and 10,
  - Unsectioned portions of the La Sierra Yorba Land Grant,
  - Unsectioned portions of the Sobrante De San Jacinto Land Grant.
- USGS 7.5' Lake Matthews Quad map within:
  - Township 4 South Range 6 West Section 22,
  - Unsectioned portions of the Sobrante De Sa Jacinto Land Grant.
- USGS 7.5' Corona North Quad map within:
  - Unsectioned portions of the La Sierra Yorba Land Grant,
  - Unsectioned portions of the Sobrante De San Jacinto Land Grant.

A record search of the Sacred Lands File with the California Native American Heritage Commission was positive. Red Tail also conducted a record search at the Eastern Information Center.

We are contacting you to request additional information regarding the Project area, if you are aware of any issues of cultural concern regarding the area shown on the enclosed map. In particular, we would like to know if you have knowledge of any Traditional Cultural Properties, Sacred Sites, Tribal Cultural Resources, resource collecting areas, or any other areas of concern of which you would wish us to be aware. If you have any questions or concerns regarding the proposed Project, please contact me at the address or phone number listed below, or via email at Shelby@redtailenvironmental.com. We appreciate any input you may have on this project.

Sincerely,



Shelby Castells, M.A., RPA
Director of Archaeology
Attachments: Project Area Maps (1-10)

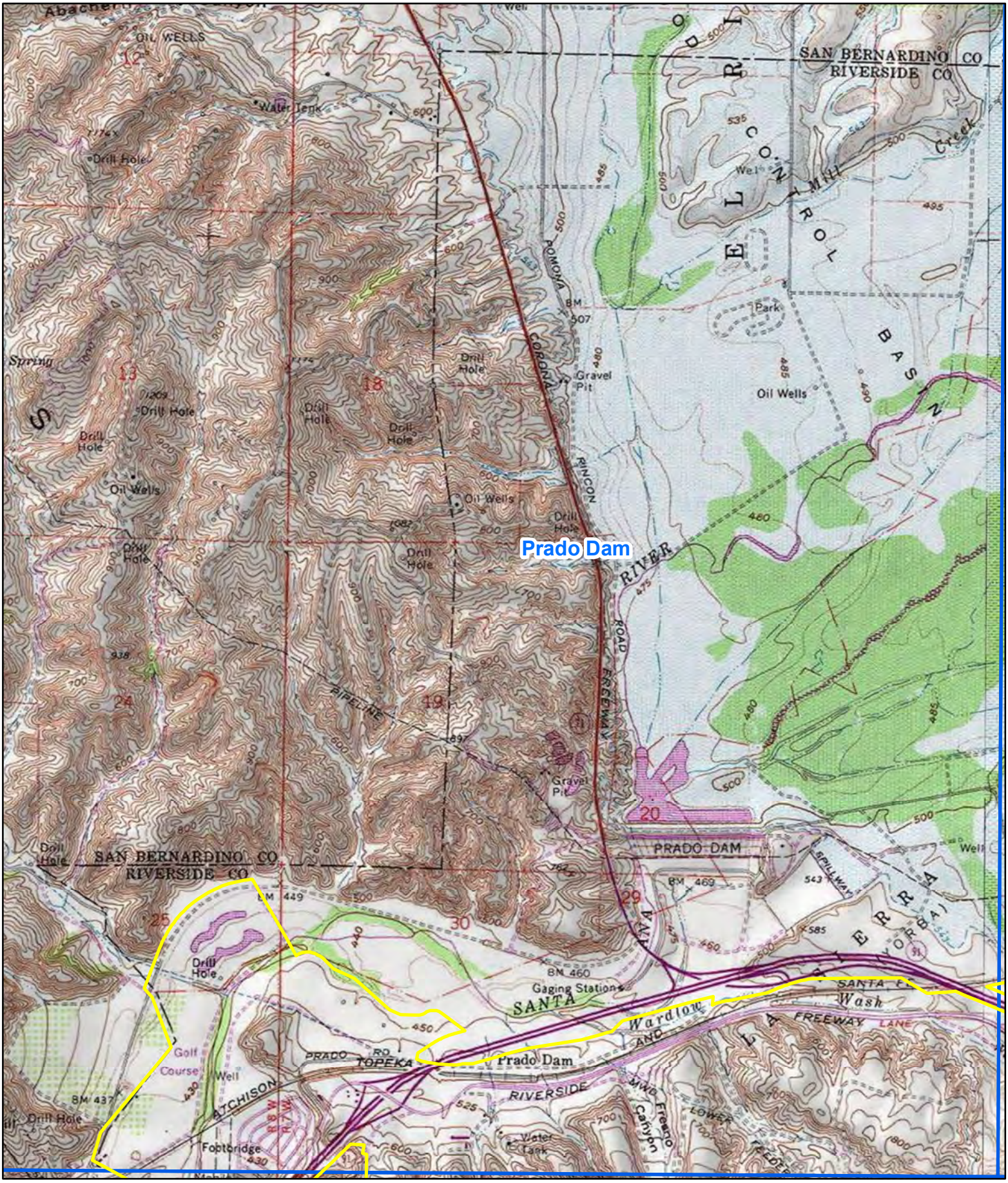


Figure 1. Project Area

RED TAIL ENVIRONMENTAL



Figure 1. Project Area



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- 7.5' USGS Quads

RED TAIL ENVIRONMENTAL



Figure 1. Project Area

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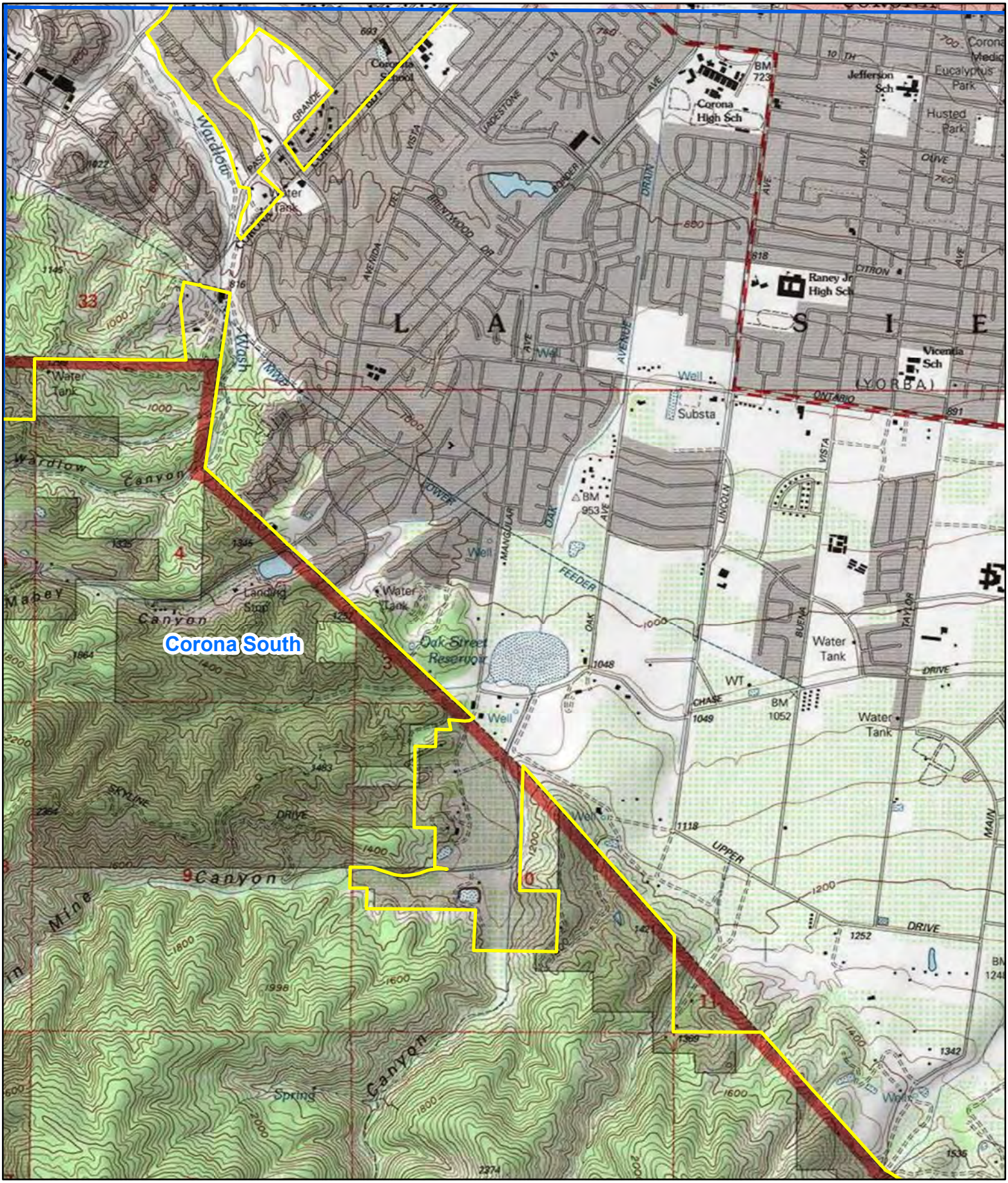


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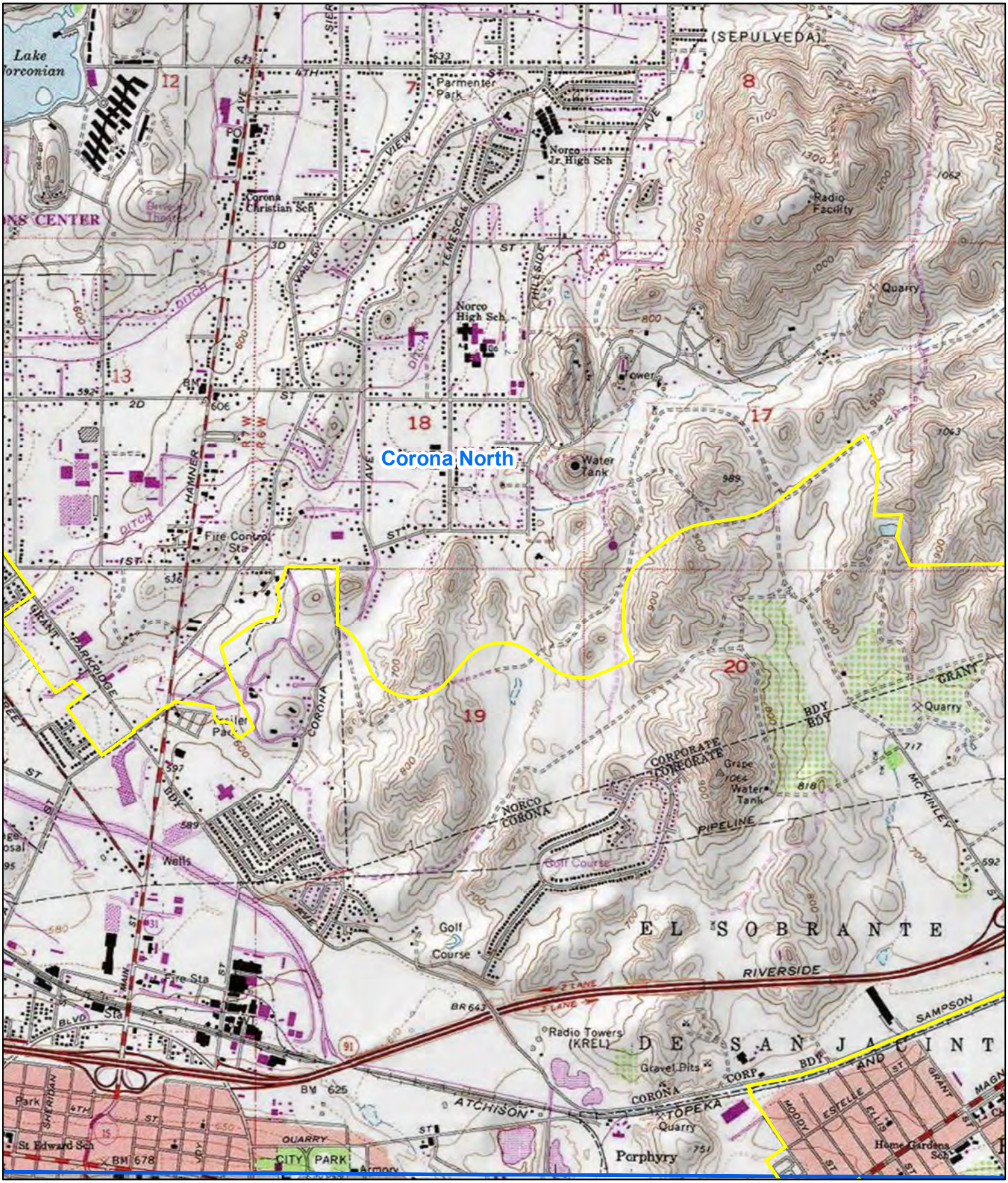
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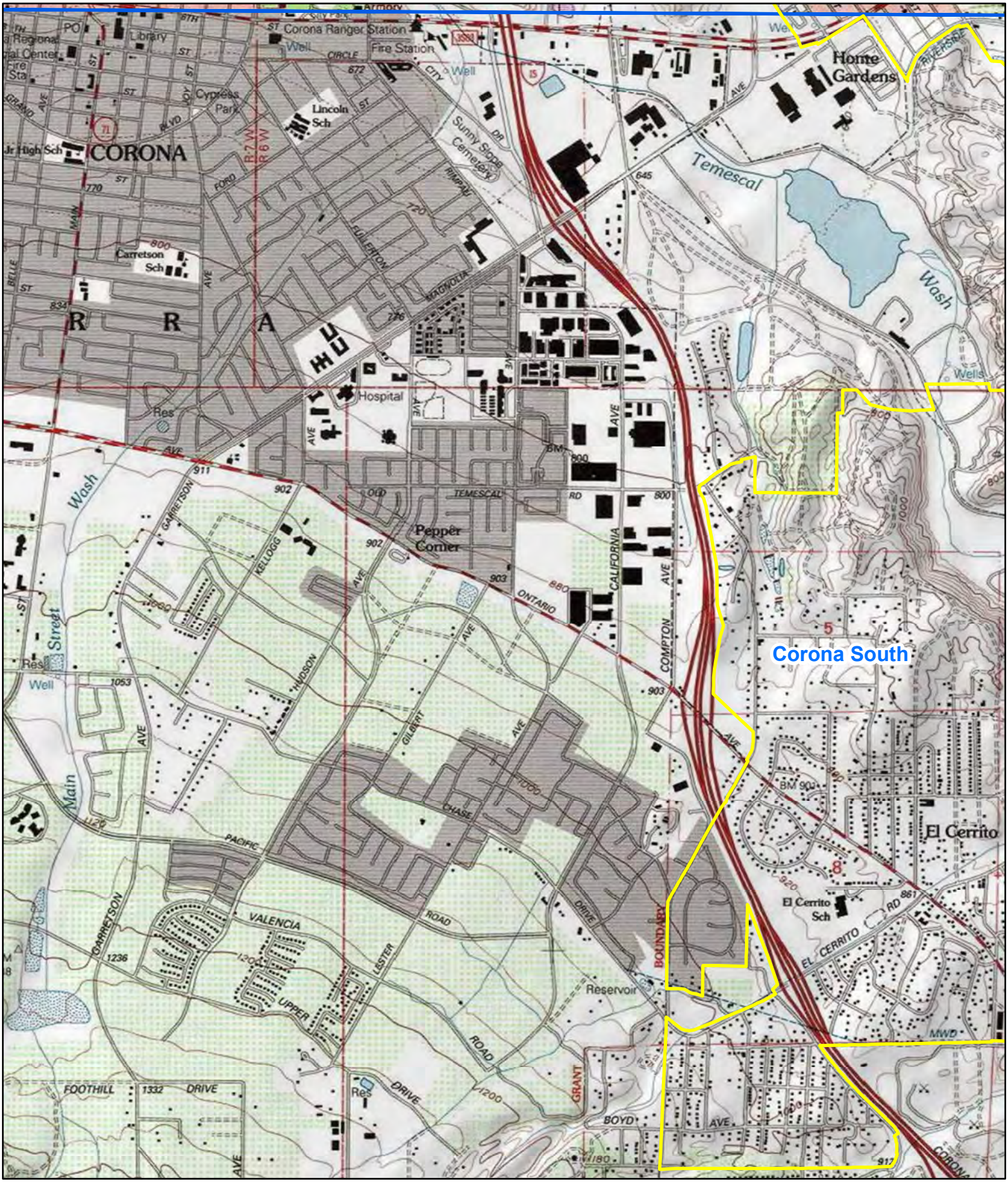


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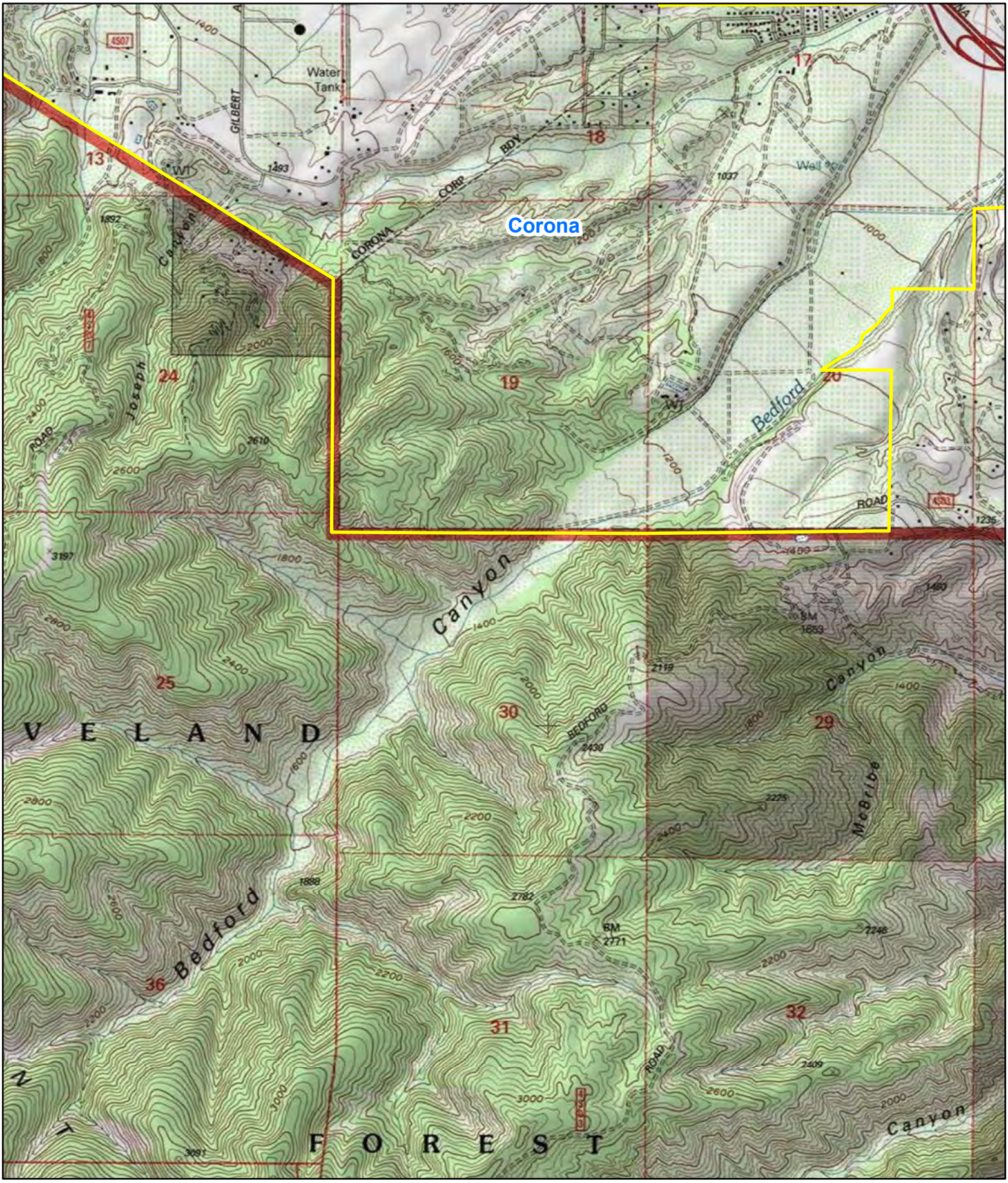


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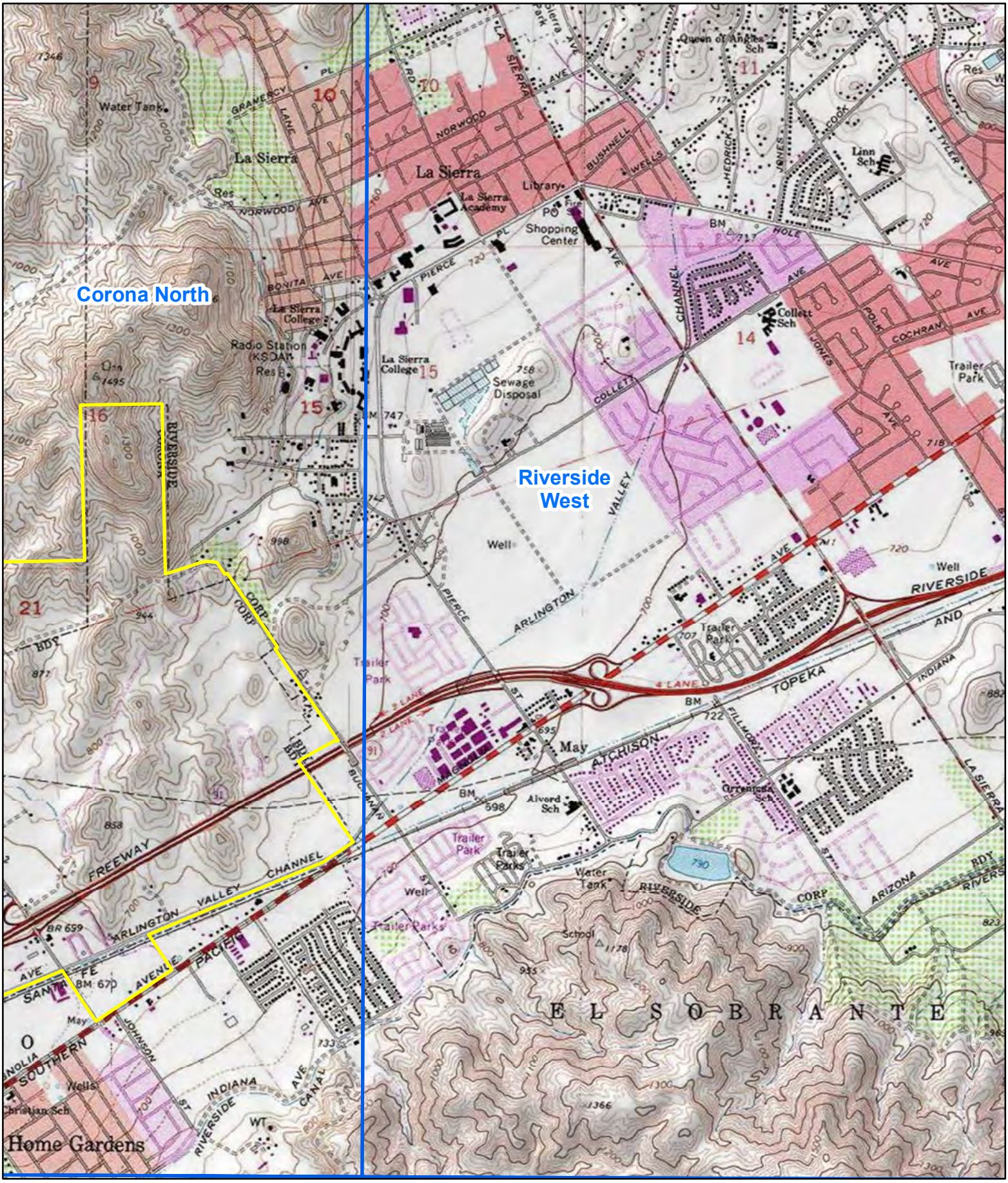


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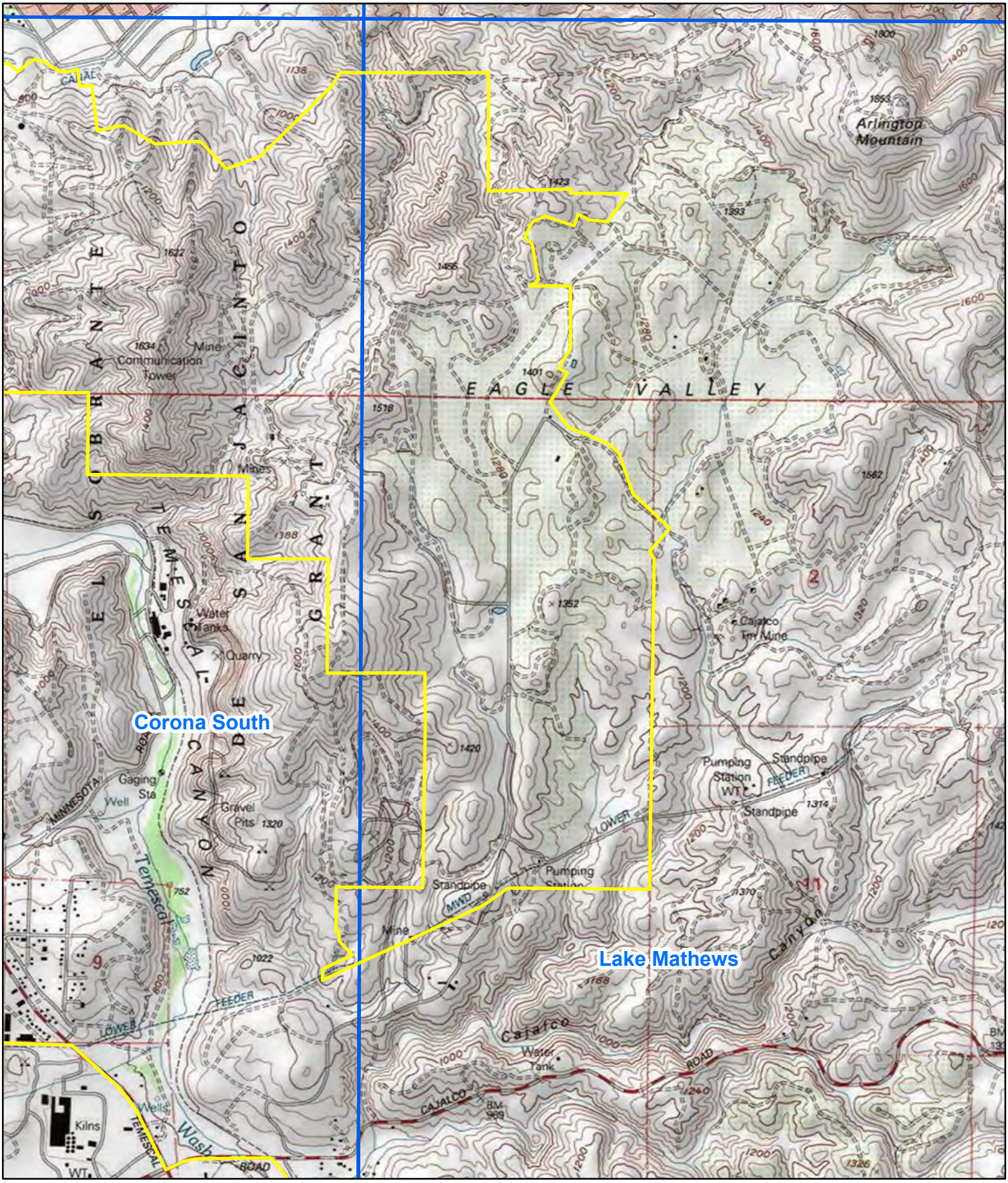
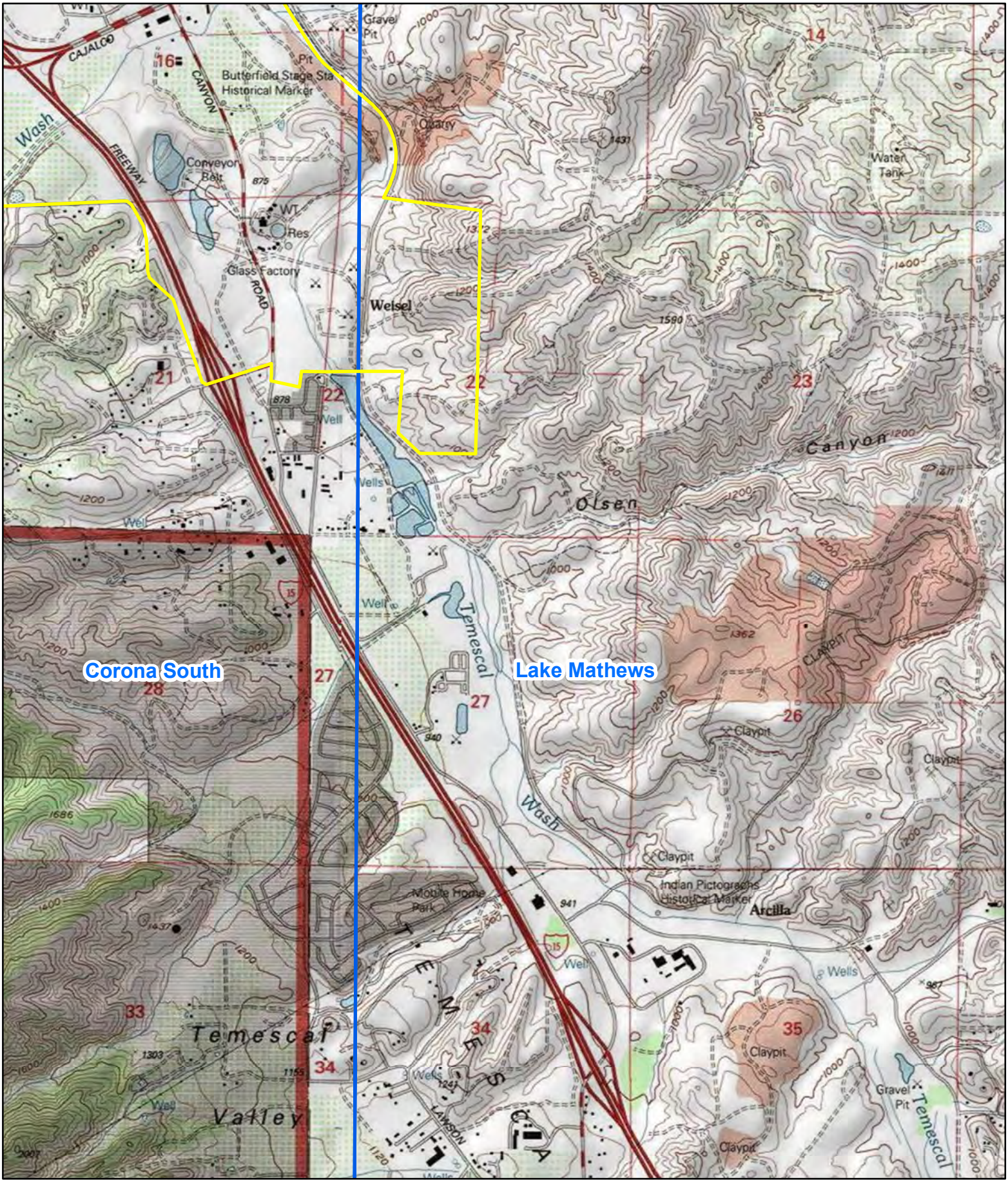


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RED TAIL ENVIRONMENTAL

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Shelby Castells <shelby@redtailenvironmental.com>

City of Corona Reclaimed Water Project, Riverside County, California

1 message

Quechan Historic Preservation <historicpreservation@quechantribe.com> Tue, Apr 14, 2020 at 2:39 PM
To: Shelby@redtailenvironmental.com

This email serves to inform you that we wish to make no comments on this project.

H. Jill McCormick, M.A.

Historic Preservation Officer

Ft. Yuma Quechan Tribe

350 Picacho Road

Yuma, AZ 85366

Office: 760-572-2423

Cell: 928-261-0254

Virus-free. www.avast.com

Rincon Band of Luiseño Indians
CULTURAL RESOURCES DEPARTMENT

One Government Center Lane | Valley Center | CA 92082
(760) 749-1051 | Fax: (760) 749-8901 | rincon-nsn.gov

April 20, 2020

Sent via email: Shelby@redtailenvironmental.com
Shelby Castells
Redtail Environmental
328 State Place
Escondido, CA 92029

Re: City of Corona Reclaimed Water Project, Riverside County, California

Dear Ms. Castells,

This letter is written on behalf of the Rincon Band of Luiseño Indians ("Rincon Band" or "Band"), a federally recognized Indian Tribe and sovereign government in response to your request for additional information on the above referenced project.

The Rincon Band wishes to inform Redtail Environmental that the location identified in the transmitted project documents is situated within the Territory of the Luiseño people and within the Band's specific Area of Historic Interest (AHI). As such, Rincon is traditionally and culturally affiliated to the project area.

After review of the provided documents and our internal information, we have identified Luiseño place names within the proposed project area but no known Tribal Cultural Resources (TCRs) or Traditional Cultural Properties (TCPs) have been recorded within or surrounding the project area. However, the Band believes that the potential exists for cultural resources to be identified during further research and survey work. Therefore, the following is recommended:

- An archaeological/cultural resources study be conducted by a Secretary of the Interior qualified archaeologist for this project, to include an archeological record search and complete intensive survey of the property;
- A final copy of the study to be provided to the Rincon Band for our review and comment

It is important to note that the Band is not opposed to development projects per se, but is opposed to direct, indirect, and cumulative impacts that projects may have to TCRs, TCPs, and sovereign lands, and requests that the Redtail Environmental also clearly address these types of impacts to cultural resources in the final environmental report.

Furthermore, Rincon requests from Redtail Environmental inclusion of appropriate provisions for inadvertent discoveries as required by every major Federal and state law (See CEQA (Cal. Pub. Resources Code §21083.2(i); 14 CCR §15064.5(f)); Section 106 (36 CFR §800.13); NAGPRA (43 CFR §10.4)). Please also include language outlining the formal State process for the discovery of human remains and grave goods for the final report (CA Health and Safety Code §7050.5; Cal. Pub Resources Code §5097.98).

Bo Mazzetti, Chairman | Tishmall Turner, Vice Chair | Laurie E. Gonzalez, Council Member | Alfonso Kolb, Sr., Council Member | John Constantino, Council Member

The Rincon Band reserves its right to fully participate in the environmental review process and to review and submit additional information after the above documentation has been received during our consultation meeting(s) with the lead agency. The Band thanks Redtail Environmental for submitting this project for Tribal review and thoughtfully addressing the Band's requests and recommendations in the final cultural resources report.

If you have additional questions or concerns, please do not hesitate to contact our office at your convenience at (760) 297-2635 or via electronic mail at cmadrigal@rincon-nsn.gov. We look forward to working together to protect and preserve our cultural assets.

Sincerely,



Cheryl Madrigal
Tribal Historic Preservation Officer
Cultural Resources Manager

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Shelby Castells <shelby@redtailenvironmental.com>

City of Corona Water Project

1 message

Croft, Katherine (TRBL) <kcroft@aguacaliente.net> Tue, Jun 9, 2020 at 2:04 PM
To: "Shelby@redtailenvironmental.com" <Shelby@redtailenvironmental.com>

Greetings,

A records check of the Tribal Historic Preservation Office's cultural registry revealed that this project is not located within the Tribe's Traditional Use Area. Therefore, we defer to the other tribes in the area. This letter shall conclude our consultation efforts.

Thank you,

Patricia Garcia Plotkin

Agua Caliente Band of Cahuilla Indians

Director of Historic Preservation

**Due to COVID-19 the THPO is operating remotely with a reduced staff. Please send all correspondence to our department email address ACBCI-THPO@aguacaliente.net*

APPENDIX C: CONFIDENTIAL MAPS, CULTURAL RESOURCE LOCATIONS (provided separately)

Appendix E. Greenhouse Gas Emissions Impact Analysis

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Harris & Associates

TECHNICAL MEMORANDUM

To: Mohammed Ibrahim, PE, Senior Engineer, City of Corona, Department of Water and Power
From: Sharon Toland, Project Manager, Harris & Associates
Subject: City of Corona 2018 Reclaimed Water Master Plan – Greenhouse Gas Emissions Impact Analysis
Date: July 15, 2020
CC: Kristin Blackson, Senior Project Manager, Harris & Associates

---

Dear Mr. Ibrahim,

The following presents the results of Harris & Associates' analysis of potential greenhouse gas (GHG) impacts from construction and operation of the City of Corona 2018 Reclaimed Water Master Plan (2018 RWMP or project). The projects included in the 2018 RWMP include sources of supply projects and distribution pipeline projects as listed in Table 1. In total, 29 projects are to be completed over the next 10 years before the buildout year (2030); 7 short-term projects are scheduled within the next 5 years, and 22 long-term projects do not have a specified implementation year.

Table 1. 2018 Reclaimed Water Master Plan Projects

Project Name	Location	Description	Construction Time Frame
WRCRWA Booster Pump Station	WRCRWA	The booster pumping stations would pump WRCRWA supply to the 833 Subzone.	2021/22
WRCRWA Transmission Pipeline	Between WRCRWA and River FCS-833 Subzone	The transmission pipeline would connect the WRCRWA booster pumping station to the 833 Subzone.	2020/21
WRCRWA Flow Control Improvements	Between Butterfield and WRF1 Tank	These control stations would direct WRCRWA supply to the Lincoln-Cota Ponds and the WRF1 Tank.	2020/21
Rimpau California Pipeline	Between Central Park and Chase Park	This transmission pipeline would provide the additional capacity needed to move WRCRWA supply to demands south of the water service area between City Park and Chase Park.	Long-term
Chase Tank	Chase Park	The storage facility at Chase Park would be an operational component of the Rimpau California Pipeline.	Long-term
Chase Booster Pump Station	Chase Park	The booster pumping facility at Chase Park is an operational component of the Rimpau California Pipeline.	Long-term
Buena Vista Tenth Pipeline	Railroad Street and Rimpau Avenue via Buena Vista Avenue and Tenth Street	This pipeline would reinforce the primary loop between WRF1 at the 1380 Zone following construction of the Rimpau California Pipeline.	Long-term

Table 1. 2018 Reclaimed Water Master Plan Projects

Project Name	Location	Description	Construction Time Frame
Ontario Slipline	Compton Avenue and Lincoln Avenue	This sliplined pipeline would form a secondary loop along the length of the 1175 Subzone.	Long-term
Sampson Pipeline	Central Park and McKinley Street	This pipeline would form a secondary loop in the 1008.5 Zone to improve performance and eliminate the need for additional local storage.	Long-term
River Pipeline	River Rd. from Corydon Avenue through Main Street	This pipeline would expand the 833 Subzone north of Temescal Creek and west of Interstate 15.	Long-term
Old Temescal Pipeline	Fullerton Avenue and Interstate 15 Freeway	This pipeline would convert 15.1 gpm of potable water demand for irrigation to reclaimed water demand.	2021/22
Lincoln Foothill Pipeline	Lincoln Avenue between Highgrove Street and Foothill Parkway	This pipeline would convert 12.5 gpm of potable water demand for irrigation to reclaimed water demand at one church and six existing LMD meters.	Long-term
Avenida Del Vista Pipeline	Via Del Rio and MFR demands north of Via Santiago	This pipeline would convert 19.8 gpm of potable water demand for irrigation to reclaimed water demand at three MFR complexes.	Long-term
Border Pipeline	Brentwood Drive and MFR demands north of Tenth Street	This pipeline would convert 36.4 gpm of potable water demand for irrigation to reclaimed water demand at numerous MFR and CII complexes.	Long-term
Promenade Pipeline	McKinley Avenue and Cresta Verde Park	This pipeline would convert 26.9 gpm of potable water demand for irrigation to reclaimed water demand at 2 MFR complexes and 15 existing landscaping irrigation meters.	Long-term
Research Pipeline	CII demands west of Auto Center Drive	This pipeline would convert 9 gpm of potable water demand for irrigation to reclaimed water demand.	Long-term
Smith Pipeline	Railroad Street and Pomona Road	This pipeline would convert 13.6 gpm of potable water demand for irrigation and car washing to reclaimed water demand.	Long-term
Via Pacifica Pipeline	MFR and LMD demand north of Ontario Avenue	This pipeline would convert 21.3 gpm of potable water demand for irrigation to reclaimed water demand at two LMD meters and one MFR complex.	Long-term
Tehachapi Pipeline	McKinley Avenue and Tehachapi Park	This pipeline would convert 6.2 gpm of potable water demand for irrigation to reclaimed water demand.	Long-term
Jenks Pipeline	North and south of Railroad Street	The pipeline would convert 5.8 gpm of potable water demand for irrigation to reclaimed water demand.	Long-term
Airport Circle Pipeline	South of Railroad Street	The pipeline would convert 4.1 gpm of potable water demand for irrigation to reclaimed water demand.	Long-term
Helicopter Pipeline	South of Railroad Street	This pipeline would convert 3.9 gpm of potable water demand for irrigation to reclaimed water demand.	Long-term
Glider Pipeline	South of Railroad Street	The pipeline would convert 1.3 gpm of potable water demand for irrigation to reclaimed water demand.	Long-term
Citation Pipeline	South of Railroad Street	This pipeline would convert 1.2 gpm of potable water demand for irrigation to reclaimed water demand.	Long-term

Table 1. 2018 Reclaimed Water Master Plan Projects

Project Name	Location	Description	Construction Time Frame
Klug Pipeline	North and south of Railroad Street	This pipeline would convert 3.9 gpm of potable water demand for irrigation to reclaimed water demand.	Long-term
Monica Pipeline	North of Railroad Street	The pipeline would convert 3.2 gpm of potable water demand for irrigation to reclaimed water demand.	Long-term
Chase Hudson Pipeline	LMD demands at Chase Drive and Hudson Avenue	This pipeline would convert 4.7 gpm at two LMD meters from potable water demand for irrigation to reclaimed water demand.	Long-term
Cessna Pipeline	North of Railroad Street	This pipeline would convert 3 gpm of potable water demand for irrigation to reclaimed water demand.	Long-term
Main Citrus Pipeline	Main Street at Citrus Avenue and four CII customers at Main Street and Magnolia Avenue	This pipeline would convert 21.4 gpm of potable water demand for irrigation to reclaimed water demand for CII customers.	Long-term

Notes: CII = commercial, industrial, and institutional; gpm = gallons per minute; LMD = landscape maintenance district; MFR = multi-family residential; WRCRWA = Western Riverside County Regional Wastewater Authority; WRF = water reclamation facility

Background

A GHG is any gas that absorbs infrared radiation and traps heat in the atmosphere. GHGs are produced from natural processes and human activities. The accumulation of GHGs in the atmosphere influences the long-term atmospheric temperatures and contributes to global climate change. In California, per Assembly Bill 32 (2016), GHGs are defined to include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, plus chlorofluorocarbons and other chlorine or bromine-containing gases. Hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride are synthetic, powerful GHGs that are emitted from a variety of industrial processes and the production of chlorodifluoromethane. Construction or operation of the project would not include any industrial processes, and chlorodifluoromethane has been mostly phased out of use in the United States, with the exception of feedstock production (USEPA 2020); therefore, these GHGs are not discussed further in this memorandum. Carbon dioxide accounts for the largest amount of GHG emissions, and collectively, CO_2, CH_4, and N_2O amount to 80 percent of the total radiative forcing from well-mixed GHGs (CARB 2014).

For each GHG, a global warming potential has been calculated to reflect how long emissions remain in the atmosphere and how strongly each GHG absorbs energy on a per-kilogram basis relative to CO_2. For example, 1 pound of methane has 25 times more heat capturing potential than 1 pound of CO_2. To simplify reporting and analysis, GHG emissions are typically reported in metric tons of carbon dioxide equivalent ($MTCO_2e$) units. Global warming potential is a metric that indicates the relative climate forcing of a kilogram of emissions when averaged over the period of interest. Table 2 identifies the CO_2 equivalent and atmospheric lifetimes of basic GHGs.

Table 2. Global Warming Potential for Select Greenhouse Gases

Pollutant	Atmospheric Lifetime (years)	Global Warming Potential (100-year)[1]
CH_4	12	28
CO_2	~100[a]	1
N_2O	121	265

Source: CAPCOA 2017. Consistent with CalEEMod, Version 2016.3.2.

Notes: CH_4 = methane; CO_2 = carbon dioxide; N_2O = nitrous oxide

1 The warming effects over a 100-year period relative to other GHGs.

Regulatory Setting

Federal

The U.S. Environmental Protection Agency is responsible for implementing federal policy to address global climate change. In 2009, the U.S. Environmental Protection Agency issued a Final Rule for mandatory reporting of GHG emissions, which applies to fossil fuel and industrial gas suppliers, direct GHG emitters, and manufacturers of heavy-duty and off-road vehicles, and requires annual reporting of emissions. This rule does not regulate the emission of GHGs; it only requires the monitoring and reporting of GHGs for those sources above certain thresholds.

State

California has enacted a variety of legislation relating to climate change, much of which has set aggressive goals for GHG emissions reductions throughout the state. California Executive Order S-03-05 (2005) establishes the goal of reducing GHG emissions to 2000 levels by 2010, to 1990 levels by 2020, and to 80 percent below 1990 levels by 2050. In September 2006, Governor Schwarzenegger signed California's Global Warming Solutions Act of 2006 (Assembly Bill 32), requiring the California Air Resources Board to establish a statewide GHG emissions cap for 2020 based on 1990 emissions and adopt mandatory reporting rules for significant sources of GHG emissions. In April 2015, Governor Brown signed Executive Order B-30-15, which established the goal of reducing GHG emissions to 40 percent below 1990 levels by 2030.

Regional

The City of Corona (City) is in the South Coast Air Basin, and the South Coast Air Quality Management District (SCAQMD) is the agency primarily responsible for comprehensive air pollution control in the basin. To provide GHG emission guidance to the local jurisdictions within the South Coast Air Basin, the SCAQMD organized a working group to develop GHG emission analysis guidance and thresholds. In 2008, the SCAQMD's governing board adopted a tiered interim approach for determining GHG emission significance, whereby the level of detail and refinement needed to determine significance increases with a project's total GHG emissions. The approach defines projects that are exempt under the California Environmental Quality Act (CEQA) (Tier 1) and projects that are within a GHG Reduction Plan (Tier 2) as less than significant. Tier 3 provides numerical GHG significance threshold of 3,000 $MTCO_2e$ per year for all land use types (City of Corona 2019).

Local

In June 2020, the City adopted the 2019 Climate Action Plan (CAP) Update, which includes an interim goal of reducing GHG emission to 49 percent below 2008 levels by the year 2030 and a longer-term GHG reduction goal of 66 percent below 2008 levels by 2040. The interim and longer-term goals put the City on a path toward the state's long-term goal to reduce emissions 80 percent below 1990 levels by 2050. The 2019 CAP Update (establishes goals and policies that encourage energy efficiency, water conservation, alternative transportation, solid waste reduction, and clean energy (City of Corona 2019).

Significance Thresholds

The City's 2019 CAP Update provides a method consistent with the 2012 CAP for determining the significance of GHG emissions from new development in the City but reflects updated emission reduction targets (City of Corona 2019). A project that is consistent with the 2019 CAP Update would contribute its fair share to the City's emissions reduction targets and would result in a less than significant impact. Consistency with the 2019 CAP Update is demonstrated through the CAP Screening Tables, which provide a menu of emission reduction options with associated points based on development type. If a project can garnish 100 points from the screening table, the project is considered less than significant. The 2019 CAP Update includes Screening Tables for residential, commercial, industrial, or mixed-use projects. The Screening Tables do not include measures applicable to municipal infrastructure projects as proposed in the 2018 RWMP; therefore, this impact analysis relies on the SCAQMD's interim GHG significance threshold for Tier 3 projects to screen for potentially significant GHG emissions. The Tier 3 screening level threshold of 3,000 $MTCO_2e$ per year is intended to achieve a regional emission capture rate of 90 percent. That is, most future projects would be required to implement GHG reduction measures while excluding small projects that would contribute a relatively small fraction of the cumulative

statewide GHG emissions. Consistent with SCAQMD methods, construction emissions should be amortized over a 30-year project life and added to operational emissions. Therefore, the project would result in significant GHG emissions if annual operation and amortized construction emissions would exceed 3,000 $MTCO_2e$.

Impact Analysis

Construction

Project construction emissions were estimated using the CalEEMod Model, version 2016.3.2, based on construction information provided by the City. To estimate maximum daily criteria pollutants from implementation of the project, Harris & Associates modeled a construction scenario that is intended to represent the maximum construction that may occur simultaneously and in a given 12-month period. Detailed assumptions and modeling data sheets are provided in Attachment 1. Construction is anticipated to begin in 2020. It was assumed that an average of three projects would occur in any given year based on the number of projects included in the 2018 RWMP and the time frame until buildout (29 projects in 10 years). The Sampson Pipeline Project was selected from the 2018 RWMP project list to represent the worst-case GHG emissions that could occur from any project. The Sampson Pipeline Project is calculated to require the greatest total amount of soil import and export; therefore, it would require the greatest number of truck trips. Therefore, assuming annual construction of three projects with the construction intensity of the Sampson Pipeline Project represents a conservative worst-case scenario. For comparison, cut quantities are anticipated to vary between 37 cubic yards (CY) and 24,200 CY for the remaining projects proposed in the 2018 RWMP compared to 27,852 CY for the Sampson Pipeline Project. The Sampson Pipeline Project would require 22,281 CY of fill compared to 30 CY to 15,644 CY for the remaining projects.

Construction activities associated with the 2018 RWMP projects would result in short-term GHG emissions from heavy equipment and construction worker vehicles. Total GHG emissions associated with construction of the Sampson Pipeline Project would be approximately 411 $MTCO_2e$. Assuming annual construction of three projects, maximum annual emissions would be approximately 1,233 $MTCO_2e$. Maximum annual emissions are conservative because less intense construction is anticipated to occur within each 12-month period, and segments that would be completed in later years are anticipated to benefit from more stringent emissions standards. Because buildout of the project would take place of 29 years, the worst-case annual emission of 1,233 $MTCO_2e$ are conservatively assumed to be the amortized construction emissions for the project. The significance of the amortized construction emissions is addressed with operational emissions below.

Operation

Most of the projects associated with the 2018 RWMP would be passive, new, or upgraded pipelines and storage projects, which would not result in any new sources of GHG emissions. Following construction, operation of the pipelines and water storage would be passive and would not result in an increase in GHG emissions. Landscape equipment would occasionally be used for maintenance. However, once new landscaping is established, only periodic brush clearing, tree trimming, and weed abatement would be required. Due to the limited amount of equipment and time required for maintenance at each facility, landscape equipment use would not substantially increase compared to existing conditions. Night-time safety lighting installed at some project sites would require minimal additional energy consumption The new pump stations would have daily maintenance checks, and tanks would have weekly maintenance checks; however, maintenance for new and improved facilities would be incorporated into the existing maintenance schedule. Therefore, the net increase in new vehicle trips would be minimal, and the vehicle emissions associated with project implementation would not be significant.

However, GHG emissions would potentially result from a net increase in energy use from operation two new pump stations. The City currently has six active reclaimed water booster pump stations, and it is assumed that operation of the two new pump stations would be similar to existing pump stations. GHG emissions, presented in Table 3, are calculated based on the 2001 Draft Program Environmental Impact Report for the City of Corona RWMP Project assumption that the electrical consumption for a newly constructed pump station would be approximately 1.7 million Kwh per year (City of Corona 2001) and the GHG intensity factor for energy consumption from Southern California Edison (EEI 2018).

Table 3. Estimated Annual Operational Emissions from Electrical Consumption

Project	$MTCO_2e$
Amortized Construction Emissions	1,233
Pump Station Emissions	789
Total Calculated Annual Emissions	**2,022**
SCAQMD Threshold	3,000
Significant Impact?	*No*

Source: EEI 2018.

Notes: $MTCO_2e$ = metric tons of carbon dioxide equivalent; SCAQMD = South Coast Air Quality Management District

Southern California Edison CO_2e Intensity Factor (2017) = 0.232 MT/MWH

As shown in Table 3, GHG emissions from the project's ongoing electrical consumption and amortized construction would be well below the SCAQMD significance threshold. These emissions would not exceed the 3,000 $MTCO_2e$ threshold for GHG emissions. In addition, the project would support the City's 2019 CAP Update goals (5.2.C and 5.2.F) to increase residential, commercial, and industrial reclaimed water use (City of Corona 2020). This impact would be less than significant.

Summary

Implementation of the project would not result in a significant impact related to GHG emissions. No mitigation measures are necessary.

References

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Attachment 1. CalEEMod Results

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Sampson Pipeline

South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	3.45	Acre	3.45	150,282.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - 8.7 months *21 working days per month

Off-road Equipment -

Grading -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	8.00	183.00
tblConstructionPhase	PhaseEndDate	2/17/2021	10/20/2021
tblGrading	MaterialExported	0.00	27,852.00
tblGrading	MaterialImported	0.00	22,281.00
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	OffRoadEquipmentType		Paving Equipment

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.2422	2.8536	1.7766	4.4900e-003	0.6504	0.1141	0.7645	0.3216	0.1051	0.4266	0.0000	408.3542	408.3542	0.0943	0.0000	410.7106
Maximum	**0.2422**	**2.8536**	**1.7766**	**4.4900e-003**	**0.6504**	**0.1141**	**0.7645**	**0.3216**	**0.1051**	**0.4266**	**0.0000**	**408.3542**	**408.3542**	**0.0943**	**0.0000**	**410.7106**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.2422	2.8536	1.7766	4.4900e-003	0.6504	0.1141	0.7645	0.3216	0.1051	0.4266	0.0000	408.3539	408.3539	0.0943	0.0000	410.7103
Maximum	**0.2422**	**2.8536**	**1.7766**	**4.4900e-003**	**0.6504**	**0.1141**	**0.7645**	**0.3216**	**0.1051**	**0.4266**	**0.0000**	**408.3539**	**408.3539**	**0.0943**	**0.0000**	**410.7103**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-4-2021	4-3-2021	0.6871	0.6871
2	4-4-2021	7-3-2021	1.0946	1.0946
3	7-4-2021	9-30-2021	1.0706	1.0706
		Highest	1.0946	1.0946

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0118	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	9.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	16.7591	16.7591	6.9000e-004	1.4000e-004	16.8190
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0118**	**0.0000**	**4.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**16.7592**	**16.7592**	**6.9000e-004**	**1.4000e-004**	**16.8191**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0118	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	9.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	16.7591	16.7591	6.9000e-004	1.4000e-004	16.8190
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0118**	**0.0000**	**4.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**16.7592**	**16.7592**	**6.9000e-004**	**1.4000e-004**	**16.8191**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	2/6/2021	10/20/2021	5	183	Includes piping, trenching and backfilling, asphalt restoration, and striping

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 91.5

Acres of Paving: 3.45

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Paving Equipment	1	6.00	132	0.36
Grading	Excavators	1	8.00	158	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	7	18.00	0.00	3,482.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.6024	0.0000	0.6024	0.3086	0.0000	0.3086	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2226	2.3947	1.6230	2.9900e-003		0.1126	0.1126		0.1036	0.1036	0.0000	262.6141	262.6141	0.0849	0.0000	264.7375
Total	**0.2226**	**2.3947**	**1.6230**	**2.9900e-003**	**0.6024**	**0.1126**	**0.7150**	**0.3086**	**0.1036**	**0.4122**	**0.0000**	**262.6141**	**262.6141**	**0.0849**	**0.0000**	**264.7375**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0128	0.4537	0.0962	1.3200e-003	0.0299	1.3700e-003	0.0313	8.2200e-003	1.3100e-003	9.5300e-003	0.0000	130.0003	130.0003	8.9000e-003	0.0000	130.2229
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.8600e-003	5.0700e-003	0.0574	1.7000e-004	0.0181	1.4000e-004	0.0182	4.8000e-003	1.2000e-004	4.9200e-003	0.0000	15.7397	15.7397	4.2000e-004	0.0000	15.7503
Total	**0.0197**	**0.4588**	**0.1536**	**1.4900e-003**	**0.0480**	**1.5100e-003**	**0.0495**	**0.0130**	**1.4300e-003**	**0.0145**	**0.0000**	**145.7401**	**145.7401**	**9.3200e-003**	**0.0000**	**145.9731**

3.2 Grading - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.6024	0.0000	0.6024	0.3086	0.0000	0.3086	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2226	2.3947	1.6230	2.9900e-003		0.1126	0.1126		0.1036	0.1036	0.0000	262.6138	262.6138	0.0849	0.0000	264.7372
Total	**0.2226**	**2.3947**	**1.6230**	**2.9900e-003**	**0.6024**	**0.1126**	**0.7150**	**0.3086**	**0.1036**	**0.4122**	**0.0000**	**262.6138**	**262.6138**	**0.0849**	**0.0000**	**264.7372**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0128	0.4537	0.0962	1.3200e-003	0.0299	1.3700e-003	0.0313	8.2200e-003	1.3100e-003	9.5300e-003	0.0000	130.0003	130.0003	8.9000e-003	0.0000	130.2229
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.8600e-003	5.0700e-003	0.0574	1.7000e-004	0.0181	1.4000e-004	0.0182	4.8000e-003	1.2000e-004	4.9200e-003	0.0000	15.7397	15.7397	4.2000e-004	0.0000	15.7503
Total	**0.0197**	**0.4588**	**0.1536**	**1.4900e-003**	**0.0480**	**1.5100e-003**	**0.0495**	**0.0130**	**1.4300e-003**	**0.0145**	**0.0000**	**145.7401**	**145.7401**	**9.3200e-003**	**0.0000**	**145.9731**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Parking Lot	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Parking Lot	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	16.7591	16.7591	6.9000e-004	1.4000e-004	16.8190
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	16.7591	16.7591	6.9000e-004	1.4000e-004	16.8190
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Parking Lot	52598.7	16.7591	6.9000e-004	1.4000e-004	16.8190
Total		**16.7591**	**6.9000e-004**	**1.4000e-004**	**16.8190**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Parking Lot	52598.7	16.7591	6.9000e-004	1.4000e-004	16.8190
Total		**16.7591**	**6.9000e-004**	**1.4000e-004**	**16.8190**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0118	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	9.0000e-005
Unmitigated	0.0118	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	9.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.0900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	9.7100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	9.0000e-005
Total	**0.0118**	**0.0000**	**4.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**9.0000e-005**	**9.0000e-005**	**0.0000**	**0.0000**	**9.0000e-005**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.0900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	9.7100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	9.0000e-005
Total	**0.0118**	**0.0000**	**4.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**9.0000e-005**	**9.0000e-005**	**0.0000**	**0.0000**	**9.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix F. Noise Impact Analysis

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Harris & Associates

MEMORANDUM

To: Mohammed Ibrahim, PE, Senior Engineer, City of Corona, Department of Water and Power
From: Sharon Toland, Project Manager, Harris & Associates
RE: City of Corona 2018 Reclaimed Water Master Plan – Noise Impact Analysis
Date: July 20, 2020
CC: Kristin Blackson, Senior Project Manager, Harris & Associates

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Dear Mr. Ibrahim,

The following presents the results of Harris & Associates' analysis of the potential noise impacts from implementation of the City of Corona 2018 Reclaimed Water Master Plan (2018 RWMP or project). The projects proposed in the 2018 RWMP include sources of supply projects and distribution pipeline projects as listed in Table 1. In total, 29 projects are to be completed over the next 10 years before the buildout year (2030); 7 short-term projects are scheduled within the next 5 years, and 22 long-term projects do not have a specified implementation year.

Table 1. 2018 Reclaimed Water Master Plan Projects

Project Name	Location	Description	Construction Time Frame
WRCRWA Booster Pump Station	WRCRWA	The booster pumping stations would pump WRCRWA supply to the 833 Subzone.	2021/22
WRCRWA Transmission Pipeline	Between WRCRWA and River FCS-833 Subzone	The transmission pipeline would connect the WRCRWA booster pumping station to the 833 Subzone.	2020/21
WRCRWA Flow Control Improvements	Between Butterfield and WRF1 Tank	These control stations would direct WRCRWA supply to the Lincoln-Cota Ponds and the WRF1 Tank.	2020/21
Rimpau California Pipeline	Between Central Park and Chase Park	This transmission pipeline would provide the additional capacity needed to move WRCRWA supply to demands south of the water service area between City Park and Chase Park.	Long-term
Chase Tank	Chase Park	The storage facility at Chase Park would be an operational component of the Rimpau California Pipeline.	Long-term
Chase Booster Pump Station	Chase Park	The booster pumping facility at Chase Park is an operational component of the Rimpau California Pipeline.	Long-term
Buena Vista Tenth Pipeline	Railroad Street and Rimpau Avenue via Buena Vista Avenue and Tenth Street	This pipeline would reinforce the primary loop between WRF1 at the 1380 Zone following construction of the Rimpau California Pipeline.	Long-term
Ontario Slipline	Compton Avenue and Lincoln Avenue	This sliplined pipeline would form a secondary loop along the length of the 1175 Subzone.	Long-term

Table 1. 2018 Reclaimed Water Master Plan Projects

Project Name	Location	Description	Construction Time Frame
Sampson Pipeline	Central Park and McKinley Street	This pipeline would form a secondary loop in the 1008.5 Zone to improve performance and eliminate the need for additional local storage.	Long-term
River Pipeline	River Rd. from Corydon Avenue through Main Street	This pipeline would expand the 833 Subzone north of Temescal Creek and west of Interstate 15.	Long-term
Old Temescal Pipeline	Fullerton Avenue and Interstate 15 Freeway	This pipeline would convert 15.1 gpm of potable water demand for irrigation to reclaimed water demand.	2021/22
Lincoln Foothill Pipeline	Lincoln Avenue between Highgrove Street and Foothill Parkway	This pipeline would convert 12.5 gpm of potable water demand for irrigation to reclaimed water demand at one church and six existing LMD meters.	Long-term
Avenida Del Vista Pipeline	Via Del Rio and MFR demands north of Via Santiago	This pipeline would convert 19.8 gpm of potable water demand for irrigation to reclaimed water demand at three MFR complexes.	Long-term
Border Pipeline	Brentwood Drive and MFR demands north of Tenth Street	This pipeline would convert 36.4 gpm of potable water demand for irrigation to reclaimed water demand at numerous MFR and CII complexes.	Long-term
Promenade Pipeline	McKinley Avenue and Cresta Verde Park	This pipeline would convert 26.9 gpm of potable water demand for irrigation to reclaimed water demand at 2 MFR complexes and 15 existing landscaping irrigation meters.	Long-term
Research Pipeline	CII demands west of Auto Center Drive	This pipeline would convert 9 gpm of potable water demand for irrigation to reclaimed water demand.	Long-term
Smith Pipeline	Railroad Street and Pomona Road	This pipeline would convert 13.6 gpm of potable water demand for irrigation and car washing to reclaimed water demand.	Long-term
Via Pacifica Pipeline	MFR and LMD demand north of Ontario Avenue	This pipeline would convert 21.3 gpm of potable water demand for irrigation to reclaimed water demand at two LMD meters and one MFR complex.	Long-term
Tehachapi Pipeline	McKinley Avenue and Tehachapi Park	This pipeline would convert 6.2 gpm of potable water demand for irrigation to reclaimed water demand.	Long-term
Jenks Pipeline	North and south of Railroad Street	The pipeline would convert 5.8 gpm of potable water demand for irrigation to reclaimed water demand.	Long-term
Airport Circle Pipeline	South of Railroad Street	The pipeline would convert 4.1 gpm of potable water demand for irrigation to reclaimed water demand.	Long-term
Helicopter Pipeline	South of Railroad Street	This pipeline would convert 3.9 gpm of potable water demand for irrigation to reclaimed water demand.	Long-term
Glider Pipeline	South of Railroad Street	The pipeline would convert 1.3 gpm of potable water demand for irrigation to reclaimed water demand.	Long-term
Citation Pipeline	South of Railroad Street	This pipeline would convert 1.2 gpm of potable water demand for irrigation to reclaimed water demand.	Long-term
Klug Pipeline	North and south of Railroad Street	This pipeline would convert 3.9 gpm of potable water demand for irrigation to reclaimed water demand.	Long-term

Table 1. 2018 Reclaimed Water Master Plan Projects

Project Name	Location	Description	Construction Time Frame
Monica Pipeline	North of Railroad Street	The pipeline would convert 3.2 gpm of potable water demand for irrigation to reclaimed water demand.	Long-term
Chase Hudson Pipeline	LMD demands at Chase Drive and Hudson Avenue	This pipeline would convert 4.7 gpm at two LMD meters from potable water demand for irrigation to reclaimed water demand.	Long-term
Cessna Pipeline	North of Railroad Street	This pipeline would convert 3 gpm of potable water demand for irrigation to reclaimed water demand.	Long-term
Main Citrus Pipeline	Main Street at Citrus Avenue and four CII customers at Main Street and Magnolia Avenue	This pipeline would convert 21.4 gpm of potable water demand for irrigation to reclaimed water demand for CII customers.	Long-term

Notes: CII = commercial, industrial, and institutional; gpm = gallons per minute; LMD = landscape maintenance district; MFR = multi-family residential; WRCRWA = Western Riverside County Regional Wastewater Authority; WRF = water reclamation facility

Background

Noise

The California Department of Transportation defines noise as sound that is loud, unpleasant, unexpected, or undesired. Sound pressure levels are quantified using a logarithmic ratio of actual sound pressures to a reference pressure squared, called "bels." A bel is typically divided into tenths, or decibels (dB). Sound pressure alone is not a reliable indicator of loudness because frequency (or pitch) also affects how receptors respond to the sound. To account for the pitch of sounds and the corresponding sensitivity of human hearing to them, the raw sound pressure level is adjusted with a frequency-dependent A-weighting scale that is stated in units of decibels (dBA) (Caltrans 2013).

A receptor's response to a given noise may vary depending on the sound level, duration of exposure, character of the noise sources, the time of day during which the noise is experienced, and the activity affected by the noise. Activities most affected by noise include rest, relaxation, recreation, study, and communications. In consideration of these factors, different measures of noise exposure have been developed to quantify the extent of the effects from a variety of noise levels. The Leq, or Equivalent Energy Level, provides an average acoustical or sound energy content of noise, measured during a prescribed period, such as 1 minute, 15 minutes, 1 hour, or 8 hours. The sound level may not be constant over the measured time period, but the average dB sound level, given as dBA Leq, contains an equal amount of energy as the fluctuating sound level (Caltrans 2013). Community noise equivalent level (CNEL) is an average sound level during a 24-hour day that considers the 24-hour day divided into three periods. CNEL is obtained by adding an additional 5 dBA to sound levels in the evening between 7:00 p.m. and 10:00 p.m., and an additional 10 dBA to noise levels in the nighttime hours between 10:00 p.m. to 7:00 a.m. (City of Corona 2020a).

The dB level of a sound decreases (or attenuates) as the distance from the source of that sound increases. For a single point source, such as a piece of mechanical equipment, the sound level normally decreases by approximately 6 dBA for each doubling of distance from the source. Sound that originates from a linear, or "line" source, such as vehicular traffic, attenuates by approximately 3 dBA per doubling of distance. Other contributing factors that affect sound reception include ground absorption, natural topography that provides a natural barrier, meteorological conditions, or the presence of human-made obstacles such as buildings and sound barriers (Caltrans 2013).

Noise in the City is primarily characterized by traffic noise, particularly near Interstate 15 and Interstate 91. Other noise sources in the City include commercial operations, property maintenance, and other typical urban activity noise. Average noise levels range from 45 to 65 dBA Leq depending on proximity to major freeways.

Rail noise is a major noise source in limited areas of the City. Land uses adjacent to rail operations experience noise levels that typically range from 65 to 75 CNEL, with periodic exposure to train signals at railroad crossings. The City is also subject to occasional overflights from Corona Municipal Airport, but the airport does not represent a major noise source in the City. The airport's 65 dBA CNEL noise contour is contained in the airport and surrounding undeveloped area (City of Corona 2020a).

Noise-sensitive land uses include noise receptors (receivers) where an excessive amount of noise would interfere with normal activities. Sensitive receptors in the City include residences, senior housing, schools, places of worship, and recreational areas. Commercial and industrial uses are not considered particularly sensitive to noise or vibration (City of Corona 2020a).

Groundborne Vibration

The Federal Transit Administration (FTA) describes groundborne vibration as vibration that can cause buildings to shake and rumbling sounds to be heard. In contrast to airborne noise, groundborne vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. Common sources of groundborne vibration are trains, buses on rough roads, and construction activities such as blasting, pile driving, and operation of heavy earthmoving equipment. The effects of groundborne vibration include feel-able movement of the building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. In extreme cases, the vibration can cause damage to buildings. Building damage is typically only a factor in the case of blasting and pile driving during construction. Groundborne vibration related to potential building damage effects is generally related to the peak particle velocity (PPV) in inches per second (FTA 2018).

Regulatory Setting

City of Corona Noise Ordinance

The City's Noise Ordinance is included in Section 17.84.040 of the Corona Municipal Code. This section is referred to as the "Noise Control Ordinance." It includes standards for stationary noise, transportation noise, and construction noise, as summarized below (City of Corona 2020a).

Stationary noise sources, such as mechanical equipment, are subject to noise source standards identified in Section 17.84.040(C)(2) and summarized in Table 2. The standards in Table 2 may not be exceeded for a cumulative period of more than 30 minutes in any hour. The noise standards in Table 2 are increased incrementally as time of exposure decreases. The noise standards in Table 2 plus 20 dB may not be exceed for any period of time.

Table 2. Stationary Noise Standards

Type of Land Use	Maximum Allowable Noise Levels			
	Exterior Noise Level		Interior Noise Level	
	7:00 a.m. to 10:00 p.m.	10:00 p.m. to 7:00 a.m.	7:00 a.m. to 10:00 p.m.	10:00 p.m. to 7:00 a.m.
Single-, Double- and Multi- Family Residential	55 dBA	50 dBA	45 dBA	35 dBA
Other Sensitive Land Uses	55 dBA	50 dBA	45 dBA	35 dBA
Commercial Uses	65 dBA	60 dBA	Not applicable	Not applicable
Industrial, Manufacturing or Agricultural	75 dBA	70 dBA	Not applicable	Not applicable

Source: City of Corona 2020b.

Notes: dBA = A-weighted decibel

Section 17.84.040(C)(3)(a), Roadway Noise, requires a Noise Study to be prepared before the construction of new master planned roads, roadway improvements, and rail lines or before the construction of residential or sensitive land uses adjacent to existing or master planned roads or railways. The Noise Study must identify the existing and future noise contours for the roadway and propose mitigation measures to reduce the noise impacts to a maximum of 65 dBA CNEL in the private outdoor living area of residences and to a maximum interior noise level of 45 dBA CNEL for residential and sensitive land uses.

Section 17.84.040(D)(2), Construction Noise, prohibits construction noise between the hours of 8:00 p.m. and 7:00 a.m., Monday through Saturday, and 6:00 p.m. to 10:00 a.m. on Sundays and federal holidays. Construction noise is defined by the Corona Municipal Code as noise that is disturbing, excessive, or offensive and constitutes a nuisance involving discomfort or annoyance to people of normal sensitivity residing in the area that is generated by the use of any tools, machinery, or equipment used in connection with construction operations.

City of Corona Vibration Ordinance

Section 17.84.050, Vibration, of the Corona Municipal Code, states that it is unlawful for any person to create, maintain, or cause any ground vibration that is perceptible without instruments at any point on any affected property adjoining the property on which the vibration source is located. For the purposes of the Corona Municipal Code, the perception threshold is presumed to be more than 0.05 inch per second root mean square (RMS) vertical velocity. This is equivalent to 94 VdB (City of Corona 2020a).

City of Corona Noise Element

The Noise Element of the City of Corona 2020–2040 General Plan contains goals and policies related to environmental noise. The Noise Element includes a Noise Land Use Compatibility Matrix that presents the Noise Element guidelines for determining acceptable and unacceptable community noise exposure limits for various land use categories. Noise levels up to 60 dBA CNEL are considered clearly compatible with residences and other sensitive uses. Noise levels up to 65 dBA CNEL are considered clearly compatible with office and recreational uses. Noise levels up to 70 dBA CNEL are considered clearly compatible with active commercial, industrial, and open space. Additionally, the City of Corona 2020–2040 General Plan includes interior noise standards of 45 dBA CNEL for sensitive land uses up to 65 dBA CNEL for some industrial uses. Additionally, it includes Policy N-2.7 to limit noise exposure during construction by requiring construction activities that occur in proximity to existing “noise-sensitive” uses, including schools, libraries, health care facilities, and residential uses, to limit the hours and days of operation in accordance with the City’s Noise Ordinance. Additionally, Policy N-3.2 requires sound barriers around outdoor mechanical equipment (City of Corona 2020c).

Standards of Significance

Construction noise impacts are evaluated based on the qualitative criteria outlined in Section 17.84.040(D)(2), Construction Noise, of the Corona Municipal Code. The City has not established a quantitative screening level for construction noise. In general, construction noise impacts are based on the volume of the noise, intensity of the noise, the volume and intensity of the background noise, whether the noise can be heard from a distance of 50 feet or more from the noise source, the nature and zoning of the area within which the noise emanates, the density of inhabitation of the area within which the noise emanates, the time of the day or night the noise occurs, the duration of the noise, and whether the noise is recurrent, intermittent or constant (City of Corona 2020c).

Operational noise impacts from stationary sources are evaluated based on the noise standards identified in Section 17.84.040(C)(2), Stationary Noise Source Standards, and provided in Table 2. A permanent increase in traffic noise levels would be considered significant if it would increase noise level by greater than 3 dBA on any roadway segment and cause roadway noise levels to exceed the General Plan noise compatibility criteria.

Impacts related to vibration are evaluated based on FTA criteria and Section 17.84.050 of the Corona Municipal Code. The City does not have established vibration damage criteria; therefore, the FTA criteria for acceptable levels of groundborne vibration for various types of buildings is used for this analysis. The FTA identifies a standard of 0.12

PPV for buildings extremely sensitive to vibration damage and 0.2 PPV for non-engineered timber and masonry buildings, such as most residences (City of Corona 2020a). Additionally, the threshold of 94 VdB established in Section 17.84.050 of the Corona Municipal Code is applied for the evaluation of potential vibration annoyance.

Project Construction

Temporary Construction Noise

Construction of the projects proposed in the project would involve the use of heavy-duty machinery for surface preparation, excavation, surface restoration, and construction of aboveground facilities. The main pieces of equipment that may be used during construction include track-mounted excavators, backhoes, front-end loaders, a paver, forklifts, cranes, industrial saws, and welders. The transport of workers and equipment to the construction areas and import and export of material would also incrementally increase noise levels along roadways leading to and from the construction work areas.

The 2018 RWMP identifies 29 projects to be completed over the next 10 years before the buildout year (2030). Therefore, it assumed that construction of projects would overlap. However, the projects proposed in the RWMP would be throughout the water service area. For example, the Western Riverside County Regional Wastewater Authority (WRCRWA) Booster Pump Station and Old Temescal Pipeline are proposed for construction in the same fiscal year but would located several miles apart. Additionally, most projects would be linear; therefore, construction would occur in a given area for only a short duration. As such, even if implementation of several projects would occur simultaneously, it is unlikely that simultaneous construction would result in combined impacts. Impacts related to construction would be independent to each construction project.

Sound levels of individual pieces of typical construction equipment range from 70 dBA to 83 dBA at 50 feet from the source, as shown in Table 3. When multiple pieces of equipment are operating simultaneously, the combined noise levels are higher. For example, the noise from one industrial saw at a distance of 50 feet (82.6 dBA) added to an excavator (76.7 dBA) at the same distance would equal approximately 83.6 dBA. These noise levels would attenuate by 6 dBA with every doubling of distance from the source.

Table 3. Noise Levels at 50 Feet from Typical Construction Equipment

Equipment Description	Leq (dBA)
Excavator	76.7
Backhoe	73.6
Front-End Loader	75.1
Paver	74.2
Forklift	67.7
Crane	72.6
Industrial Saw	82.6
Welder	70.0

Source: FHWA 2008.

As previously described, average noise levels in the City range from 45 to 65 dBA Leq depending on proximity to major freeways. As such, construction noise would temporarily increase the ambient noise environment and would be noticeably audible to sensitive receptors in the vicinity of the active project. As previously noted, a 5 dBA change in community noise level is generally clearly noticeable. According to Corona Municipal Code, Section 17.84.040(D)(2), construction noise is prohibited between the hours of 8:00 p.m. and 7:00 a.m., Monday through Saturday, and 6:00 p.m. to 10:00 a.m. on Sundays and federal holidays. Construction outside allowable hours is not anticipated at this time for project implementation. No pile driving is anticipated for project implementation. However, because construction noise would have the potential to be heard from a distance of 50 feet or more from the construction area, and construction would occur in residential and other zones containing sensitive

receptors, construction of individual 2018 RWMP projects would have the potential to result in significant temporary nuisance noise. Mitigation Measure NOI-1 is proposed to minimize construction noise.

Construction traffic associated with the projects proposed in the 2018 RWMP is anticipated to be minimal. Based on the worst-case construction scenario assumed in the air quality analysis (Harris 2020), average construction crews would generate approximately 18 personal automobile trips per day. The Sampson Pipeline Project is projected to require the most material import and export in the least amount of time and is anticipated to result in an average of approximately 20 truck trips per day. Therefore, the worst-case scenario would result in approximately 38 total trips per day (18 worker trips plus 20 truck trips). Compared to the tens of thousands of vehicle trips that occur on major arterial, collector, and local roadways in the City every day, the noise generated by construction traffic associated with the individual projects identified in the 2018 RWMP would not be discernable.

Because noise levels produced by project-related construction activities could potentially be considered a significant nuisance under the City's Noise Ordinance criteria, a potentially significant impact would occur. Therefore, implementation of the Mitigation Measure NOI-1 is required to minimize construction noise exposure. With implementation of the Mitigation Measure NOI-1, construction would incorporate best management practices so noise levels would not be a nuisance, and noise levels would be reduced to a less than significant level.

NOI-1: **Construction Noise Reduction Measures.** Individual projects under the 2018 Reclaimed Water Master Plan shall implement construction noise reduction measures to ensure compliance with the City of Corona's Noise Ordinance. The following measures shall be included on individual project construction plans and be submitted to the City of Corona, Public Works Department, for review before approval of final design.

- Construction equipment shall be properly outfitted and maintained with manufacturer recommended noise reduction devices.
- Diesel equipment shall be operated with closed engine doors and equipped with factory recommended mufflers.
- Mobile or fixed "package" equipment (e.g., arc-welders and air compressors) shall be equipped with shrouds and noise control features that are readily available for that type of equipment.
- Electrically powered equipment shall be used instead of pneumatic or internal-combustion powered equipment, where feasible.
- Unnecessary idling of internal combustion engines (e.g., in excess of 5 minutes) shall be prohibited.
- Material stockpiles and mobile equipment staging, parking, and maintenance areas shall be located as far as practicable from noise-sensitive receptors.
- The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be limited to safety warning purposes only.
- No project-related public address or music system shall be audible at any adjacent sensitive receptor.
- The City of Corona shall notify residences within 100 feet of the construction area in writing at least 2 weeks prior to any construction activity such as concrete sawing, asphalt removal, or heavy grading operations. The notification shall describe the activities anticipated, provide dates and hours, and provide contact information with a description of a complaint and response procedure.
- In the event that a complaint is received, noise monitoring shall be conducted to determine whether hourly average noise levels during construction exceed ambient noise levels by more than 5 A-weighted decibels Equivalent Energy Level. A 1-hour noise measurements shall be taken during a normal weekday without construction activity, and a 1-hour measurement during typical construction. In the event that the above measures do not reduce noise levels to 5 A-weighted decibels or less above ambient conditions at the affected receptor, temporary sound barriers or sound blankets may be installed between construction operations and adjacent noise-sensitive receptors. Due to equipment exhaust pipes being approximately 7–8 feet above ground, a sound barrier at least 10 feet in height above grade would be required to mitigate noise to an acceptable level.

- The on-site construction supervisor shall have the responsibility and authority to receive and resolve noise complaints. A clear appeal process for the affected resident shall be established before construction begins to allow for resolution of noise problems that cannot be immediately solved by the site supervisor.
- All construction activities, including deliveries and engine warm-up, shall be prohibited between the hours of 8:00 p.m. and 7:00 a.m., Monday through Saturday, and 6:00 p.m. to 10:00 a.m. on Sundays and federal holidays.

Temporary Construction Groundborne Vibration

Conventional construction techniques, such as earth movement by trucks, have the potential to generate groundborne vibration and noise. Construction techniques that commonly result in excessive vibration, such blasting and pile driving, are not anticipated for projects identified in the 2018 RWMP. Reference vibration levels available from the FTA for typical construction equipment are provided in Table 4.

Table 4. Noise Levels at 50 Feet from Typical Construction Equipment

Equipment Description	Approximate RMS Vibration Level at 25 Feet (VdB)	Approximate PPV Vibration Level at 25 Feet (in/sec)	Approximate RMS Vibration Level at 40 Feet (VdB)
Vibratory Roller	0.21	94	0.10
Hoe Ram	0.089	87	0.044
Large bulldozer	0.089	87	0.044
Caisson drilling	0.089	87	0.044
Loaded trucks	0.076	86	0.038
Jackhammer	0.035	79	0.017
Small bulldozer	0.003	58	0.001

Source: FTA 2018.

Notes: in/sec = inches per second; ppv = peak particle velocity; RMS = root mean square; VdB = vibration decibel

As shown in Table 4, construction-related vibration levels would be below the 0.2 PPV threshold for typical building damage and the 94 VdB threshold for annoyance at a distance of approximately 25 feet. If ultimately required, vibratory rollers can generate groundborne vibration at 0.210 at a distance of 25 feet (FTA 2018); however, the vibration level would dissipate to below the threshold by adding only one additional foot of separation from the source. Therefore, impacts associated with construction equipment would be less than significant to typical buildings and receptors.

Construction would typically be below the threshold of 0.12 PPV for buildings extremely sensitive to vibration damage. However, vibration from operation of a vibratory roller, if required, would have the potential to generate vibration levels of 0.12 PPV up to approximately 40 feet from equipment operation. The Corona Heritage Inventory contains 482 properties recommended for preservation because of age or historic significance that may be considered susceptible to damage from vibration (City of Corona 2020a). Construction would generally be separated from buildings by more than 40 feet due to roadway setbacks. However, because exact future project alignments and construction fleets are unknown, construction that would involve use of vibratory equipment within 40 feet of a historic property would have the potential to result in significant vibration. Mitigation Measure NOI-2 would reduce impacts to a less than significant level.

NOI-2: **Vibratory Equipment Limitations.** Construction plans for individual projects under the 2018 Reclaimed Water Master Plan shall include a requirement that no vibratory equipment be operated within 40 feet of a structure eligible or listed on the Corona Heritage Inventory. Instead, alternative construction equipment shall be used, such as smooth wheel rollers without a vibratory component. This requirement shall be included on individual project construction plans and be submitted to the City of Corona, Public Works Department, for review before approval of final design.

Project Operation

Permanent Increase in Ambient Noise

With the exception of two new pump stations, most of the projects associated with the 2018 RWMP would be passive, new, or upgraded pipelines and storage facilities. These projects would not result in any new sources of operational noise as the flow of water through underground pipes and water storage does not generate audible noise. A nominal increase in vehicle trips is anticipated to be associated with maintenance of the projects. Consistent with the previous conclusions of the 2001 Draft Program Environmental Impact Report for the City of Corona RWMP Project, new and improved facilities would be incorporated into the existing maintenance schedule, and the net increase in new vehicle trips would be minimal (City of Corona 2001). Therefore, buildout of the 2018 RWMP would not result in a permanent increase in vehicle noise in the water service area. Emergency repair work may generate excessive noise from construction equipment; however, noise generated from such activities would be temporary and sporadic and not substantially different than existing emergency repair activities.

Operation of the two new pump stations (WRCRWA Booster Pump Station and Chase Booster Pump Station) identified in the 2018 RWMP would have the potential to result in new sources of stationary equipment noise. The typical noise range from pump station operation is between 80 and 90 dBA at the station. However, pump stations would installed in enclosures that would typically reduce noise level by 10 to 20 dBA (City of Corona 2001). Assuming the worst-case noise level of 90 dBA, attenuated to 80 dBA through enclosure, the new pump stations would individually have the potential to exceed the City's most conservative stationary noise threshold of 50 dBA during nighttime hours up to 100 feet from the pump station. The WRCRWA Booster Pump Station would be approximately 800 feet west of the nearest receptors. The Chase Booster Pump Station would be in the southeastern portion of the Chase Park, more than 100 feet from the nearest residences. The Chase Booster Pump Station would have the potential to be approximately 100 feet from an existing place of worship. However, places of worship are primarily used during daytime hours. For both proposed pump stations, noise generated at the pump station would not exceed the City's daytime noise threshold of 55 dBA beyond 55 feet from the pump station. Since both pump stations are more than 10 feet from the nearest sensitive receptors, operation of the proposed pump stations would not result in a significant permanent increase in ambient noise.

Thus, operation of the project would not generate noise in excess of established thresholds or expose sensitive receptors to excessive noise. Long-term operational noise impacts would be less than significant.

Permanent Increase in Groundborne Vibration

Once installed, the project include passive uses (pipelines, storage) and pump stations that do not generate substantial levels of vibration. Water flowing through underground pipes, mechanical equipment operating at pump stations, and light-duty trucks associated with facility maintenance are not typical sources of groundborne vibration. Therefore, long-term operational groundborne vibration impacts would be less than significant.

References

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