Appendix B-2

City of Vista Existing Conditions Report – General Plan Update







VISTA
GENERAL PLAN UPDATE 2050

City of Vista

EXISTING CONDITIONS REPORT

General Plan Update

March 2023

Table of Contents

1.0 INTRODUCTION 1
1.1 Format and Organization of the Existing Conditions Report 1
1.2 What is a General Plan? 3
1.3 Using the General Plan 3
1.4 Regional Setting and Planning Boundaries 4
2.0 MARKET CONDITIONS AND DEMOGRAPHICS 8
2.1 Population and Household Characteristics 8
2.2 Housing Conditions and Trends 13
2.3 Employment and Industry Trends 15
2.4 Supply Analysis 18
2.5 Demand Analysis 33
2.6 Reconciliation of Supply and Demand 47
2.7 Key Terms 48
2.8 References 48
3.0 LAND USE AND COMMUNITY CHARACTER 49
3.1 Introduction 49
3.2 Existing General Plan Land Use Designations 62
3.3 Existing Zoning 72
3.4 Previous Planning Efforts 78
3.5 Other Agency Plans 79
3.6 Community Character-Urban Design Patterns 80
3.7 Social Equity 90
3.8 Key Terms 95
3.9 References 96
4.0 CIRCULATION AND TRANSPORTATION 97
4.1 Introduction 97
4.2 Community Profile 101
4.3 Analysis Methodology 118
4.4 Mobility Analysis 137

4.5 Needs and Opportunities....203
5.0 NATURAL RESOURCES....210
5.1 Air Quality....210
5.2 Water Resources and Quality....231
5.3 Biological Resources....239
5.4 Open Space....260
5.5 Mineral Resources....265
5.6 Key Terms....270
5.7 References....271
6.0 HAZARDS AND SAFETY....277
6.1 Wildfire Hazards....277
6.2 Geologic and Seismic Hazards....289
6.3 Flood Hazards....295
6.4 Hazardous Materials....299
6.5 Noise and Vibration....309
6.6 Key Terms....327
6.7 References....329
7.0 CLIMATE CHANGE AND RESILIENCY....333
7.1 Greenhouse Gas Emissions....333
7.2 Climate Change Vulnerability and Adaptation....360
7.3 Key Terms....366
7.4 References....369
8.0 PUBLIC FACILITIES, SERVICES, AND INFRASTRUCTURE....371
8.1 Water Supply and Delivery....371
8.2 Wastewater Collection and Treatment....380
8.3 Stormwater Drainage....386
8.4 Solid Waste, Recycling, and Composting....393
8.5 Dry Utilities and Telecommunications – Electricity, Natural Gas, Telecommunications....397
8.6 Fire Protection....403
8.7 Law Enforcement....414

8.8 Schools and Libraries 419
8.9 Parks and Recreation....424
8.10 Key Terms 428
8.11 References 428
9.0 CULTURAL RESOURCES....430
9.1 Introduction 430
9.2 Historic Resources 437
9.3 Paleontological Resources 454
9.4 Key Terms 461
9.5 References 461

List of Figures

1.0 INTRODUCTION

Figure 1.1: Regional Location 6
Figure 1.2: Vista City Limits 7

3.0 LAND USE AND COMMUNITY CHARACTER

Figure 3.1: Scenic Resources 52
Figure 3.2: Citywide Urban Form 59
Figure 3.3: City of Vista Existing General Plan Land Use Designations, Percentage of Total Acreage 64
Figure 3.4: Vista General Plan 2030 Land Use Map 71
Figure 3.5: Existing Zoning Designations, Percentage of Total Acreage 73
Figure 3.6: City of Vista Zoning Map 77
Figure 3.7: Downtown Core – Street, Lot, and Block Patterns 81
Figure 3.8: Commercial Nodes – Street, Lot, and Block Patterns 83
Figure 3.9: Hillside Residential – Street, Lot, and Block Patterns 85
Figure 3.10: Master Planned Residential – Street, Lot, and Block Patterns 87
Figure 3.11: Industrial Business Park – Street, Lot, and Block Patterns 89
Figure 3.12: CalEnviroScreen 91
Figure 3.13: Low Income Communities 92
Figure 3.14: CDC Social Vulnerability Index 94

4.0 CIRCULATION AND TRANSPORTATION

Figure 4.1: Vista's Regional Location 102
Figure 4.2: Population Density by Census Block Group 104
Figure 4.3: Employment Density by Census Block Group 105
Figure 4.4: Youth Population by Census Block Group 106
Figure 4.5: Senior Population by Census Block Group 107
Figure 4.6: Population by Age Group – City of Vista and San Diego County 108
Figure 4.7: Median Household Income by Census Block Group 109
Figure 4.8: Zero Vehicle Households by Census Block Groups 111
Figure 4.9: Inflow/Outflow of Employees in Relation to the City of Vista 112

Figure 4.10: Percent of Commuters Who Walk to Work by Census Block Group 115
Figure 4.11: Percent of Commuters Who Bicycle to Work by Census Block Group 116
Figure 4.12: Percent of Commuters Who Take Transit to Work by Census Block Group.119
Figure 4.13: Vista Project Study Area and Key Study Intersections.....121
Figure 4.14: NEMA Phasing Diagram 133
Figure 4.15: Missing Sidewalks 139
Figure 4.16: AM Peak Period Pedestrian Counts 140
Figure 4.17: PM Peak Period Pedestrian Counts 142
Figure 4.18: AM/PM Peak Period Pedestrian Volumes – Existing Conditions 143
Figure 4.19: Active Transportation Trip Generator Submodel.....146
Figure 4.20: Active Transportation Trip Attractor Submodel 148
Figure 4.21: Active Transportation Propensity Model 149
Figure 4.22: Pedestrian Environment Score (PES) 150
Figure 4.23: Pedestrian Collisions by Year (2015 – 2019) 152
Figure 4.24: Pedestrian Involved Collisions 153
Figure 4.25: Existing Bicycle Facilities.....159
Figure 4.26: AM Peak Period Bicycle Counts 161
Figure 4.27: PM Peak Period Bicycle Counts 162
Figure 4.28: Figure 4.28 AM/PM Peak Period Bicycle Volumes – Existing Conditions.....163
Figure 4.29: Bicycle Level of Traffic Stress.....167
Figure 4.30: Bicycle Collisions by Year (2015 – 2019) 168
Figure 4.31: Bicycle-Involved Collisions 170
Figure 4.32: Existing Public Transportation Routes and Stops 172
Figure 4.33: Public Transportation Ridership by Stop 174
Figure 4.34: Pedestrian/Bicycle Collisions Near Transit Stops.....179
Figure 4.35: Existing Roadway Geometry 182
Figure 4.36: Existing Intersection Geometry 183
Figure 4.37: Roadway Daily Traffic Volumes and LOS – Existing Conditions 187
Figure 4.38: AM/PM Peak Hour Intersection Turning Movements – Existing Conditions 188

Figure 4.39: AM/PM Peak Hour Intersection Level of Service 192
Figure 4.40: Vehicular Collisions by Year (2015 – 2019) 194
Figure 4.41: Vehicular Collisions (2015-2019) 195
Figure 4.42: Existing Truck Routes 202
Figure 4.43: Pedestrian Opportunities and Constraints 204
Figure 4.44: Bicycle Opportunities and Constraints 206
Figure 4.45: Transit Opportunities and Constraints 207
Figure 4.46: Vehicular Opportunities and Constraints 209

5.0 NATURAL RESOURCES

Figure 5.1: Air Quality Sensitive Receptors 230
Figure 5.2: Hydrologic Units 237
Figure 5.3: Biological Resources Location Map 259
Figure 5.4: Open Space 264
Figure 5.5: Mineral Resources 269

6.0 HAZARDS AND SAFETY

Figure 6.1: Fire Hazard Severity Zones 288
Figure 6.2: Active Faults And Alquist Priolo Fault Zones 294
Figure 6.3: FEMA Flood Zones 298
Figure 6.4: Noise Measurement Locations 325
Figure 6.5: Noise Contours 326

8.0 PUBLIC FACILITIES, SERVICES, AND INFRASTRUCTURE

Figure 8.1: Water System and VID Boundaries 377
Figure 8.2: Wastewater System and Districts 384
Figure 8.3: Storm Drain System 392
Figure 8.4: Fire Department Stations And Fire District 413
Figure 8.5: Law Enforcement 418
Figure 8.6: Schools and Libraries 423
Figure 8.7: Parks and Recreation Facilities 427

9.0 CULTURAL RESOURCES

Figure 9.1: Previously Identified Historic Built Environment Properties 453
Figure 9.2: Paleontological Resources Sensitivity Map 459

Figure 9.3: Generalized stratigraphic column for the City of Vista and its Sphere of Influence (Reproduced from Deméré 2007) 460

List of Tables

2.0 MARKET CONDITIONS AND DEMOGRAPHICS

Table 2.1: Population Growth Trends 9

Table 2.2: City of Vista Forecasted Population Change by Age 9

Table 2.3: Population by Race and Ethnicity in City of Vista and San Diego County, 2020 10

Table 2.4: Educational Attainment in City of Vista and San Diego County, 2016–2020 (5-Year Average) 11

Table 2.5: Persons in poverty, City of Vista, and San Diego County, 2016–2020 (5-Year Average) 12

Table 2.6: Household Growth Trends, City of Vista, and County of San Diego 12

Table 2.7: Household Income, City of Vista, and San Diego County, 2016–2020 (5-Year Average) 13

Table 2.8: Housing Units by Type, City of Vista, and County of San Diego 14

Table 2.9: Residential Vacancy, City of Vista, and County of San Diego 15

Table 2.10: Industries, City of Vista, and County of San Diego 16

Table 2.11: Occupation of Civilian Population 16 years and over, City of Vista and County of San Diego 17

Table 2.12: Historical Retail Market Conditions, City of Vista 24

Table 2.13: Historical Office Market Conditions, City of Vista 27

Table 2.14: Historical Industrial Market Conditions, City of Vista 30

Table 2.15: Population Growth Distribution (2020-2040), City of Vista 34

Table 2.16: Housing Growth (Forecasted 2020 Est. – 2040), City of Vista and County of San Diego 35

Table 2.17: Household Demand Distribution (2020 Est. – 2040), City of Vista 36

Table 2.18: Demographic Overview Summary, City of Vista 37

Table 2.19: Forecasted Household Expenditure Growth, City of Vista 38

Table 2.20: Retail Expenditure Potentials by Category, City of Vista 38

Table 2.21: Retail Demand Capture, City of Vista 39

Table 2.22: San Diego County Historical Employment (Total Non-Farm 1991-2021) 40

Table 2.23: San Diego County Employment Growth (Forecasted 2021-2040) 42
Table 2.24: San Diego County Employment Growth and Office Space Demand (2020-2040) 43
Table 2.25: Annual Office Demand Capture (2020-2040), City of Vista.....44
Table 2.26: San Diego County Employment Growth and Industrial Space Demand (2020-2040) 45
Table 2.27: Annual Industrial Demand Capture (2020-2040), City of Vista 46

3.0 LAND USE AND COMMUNITY CHARACTER

Table 3.1: Existing General Plan Land Use Designations.....63
Table 3.2: Existing Zoning Designations, City of Vista 72

4.0 CIRCULATION AND TRANSPORTATION

Table 4.1: Vehicle Availability by Household 110
Table 4.2: Commute Distance for People that Live in Vista 113
Table 4.3: Commute Distance for People that Work in Vista 113
Table 4.4: Means of Transportation to Work 114
Table 4.5: Multimodal Performance Measures 118
Table 4.6: Active Transportation Trip Generator Submodel Inputs 122
Table 4.7: Attractor Submodel Inputs.....123
Table 4.8: Level of Traffic Stress Classifications and Descriptions 126
Table 4.9: Transit Stops Amenity Guidelines 129
Table 4.10: Vehicular Level of Service Definitions 131
Table 4.11: City of Vista Roadway Segment Daily Capacity (ADT) and Level of Service Standards.....132
Table 4.12: Signalized Intersection Level of Service HCM Operational Analysis Method 134
Table 4.13: Level of Service Criteria for Stop Controlled Unsignalized Intersections 135
Table 4.14: Roadway Segment Mileage and Intersection Crossing Legs by PES Rating.....147
Table 4.15: Leading Pedestrian Collision Locations (2015 – 2019).....154
Table 4.16: Leading Pedestrian Collision Violation Codes (2015 – 2019) 154

Table 4.17: Bicycle Facility Classifications....156
Table 4.18: Existing Bicycle Network Mileage by Classification....158
Table 4.19: Bicycle Level of Traffic Stress Results....168
Table 4.20: Leading Bicycle Collision Locations (2015 – 2019)....169
Table 4.21: Leading Bicycle Injury Collision Violation Codes (2015 – 2019)....169
Table 4.22: Transit Stops with Greatest Estimated Daily Ridership (FY2019)....173
Table 4.23: NCTD Recommended Transit Stop Improvements....176
Table 4.24: NCTD On-Time Performance....177
Table 4.25: Leading Vehicular Collision Locations (2015 – 2019)....196
Table 4.26: Vehicle Collisions by Crash Type (2015 – 2019)....196
Table 4.27: Leading Vehicle Collision Violation Codes (2015 – 2019)....197

5.0 NATURAL RESOURCES

Table 5.1: Federal and State Ambient Air Quality Standards....212
Table 5.2: Local Ambient Air Quality Data....224
Table 5.3: SDAB 2012 Estimated Annual Average Daily Emissions by Source....226
Table 5.4: SDAB Attainment Designation....227
Table 5.5: SDAB Estimated Annual Average Daily Diesel PM Emissions by Source....229
Table 5.6: Vegetation Communities and Land Cover Types within the City of Vista....246
Table 5.7: Special-Status Plant Species Known To Occur Or With A Potential To Occur In The City Of Vista....252
Table 5.8: Special-Status Wildlife Species Known to Occur or With a Potential to Occur in the City Of Vista....256
Table 5.9: Vegetation Communities and Land Cover Types Within City of Vista Designed Open Space....261

6.0 HAZARDS AND SAFETY

Table 6.1: City of Vista Applicable Exterior Property Line Noise Levels....312
Table 6.2: Typical Sound Levels in the Environment and Industry....314
Table 6.3: Measured Outdoor Short-Term Ambient Noise Levels....317
Table 6.4: Measured Long-Term 1 (LT1) Ambient Noise Levels....318
Table 6.5: Measured Long-Term 2 (LT2) Ambient Noise Levels....318
Table 6.6: Measured Long-Term 3 (LT3) Ambient Noise Levels....319

Table 6.7: Measured Long-Term 4 (LT4) Ambient Noise Levels....320
Table 6.8: Existing Traffic Noise Levels....322

7.0 CLIMATE CHANGE AND RESILIENCY

Table 7.1: Six Top GHG Producer Countries....356
Table 7.2: GHG Emissions Sources in California....357
Table 7.3: City of Vista Greenhouse Gas Inventory (2012)....358
Table 7.4: Greenhouse Gas Emissions Projections and Targets....359
Table 7.5: Summary of Greenhouse Gas Reduction Strategies....359

8.0 PUBLIC FACILITIES, SERVICES, AND INFRASTRUCTURE

Table 8.1: Current And Planned Water Supplies (Normal Year - AF/YR)....378
Table 8.2: Use for Potable Water - Projected....379
Table 8.3: Projected Sewer Flows....385
Table 8.4: City of Vista Waste Stream 2021....396
Table 8.5: City of Vista Waste Diversion 2021....396
Table 8.6: SDG&E Power Mix 2020....401
Table 8.7: Electric Usage City of Vista 2022 Quarter 1 in Kilowatt-hours....401
Table 8.8: Gas Usage City of Vista 2022 Quarter 1 in Therms....402
Table 8.9: Vista Fire Stations....411
Table 8.10: City of Vista Crime Statistics....416
Table 8.11: City of Vista School Enrollment (2020-2022)....420
Table 8.12: Average Classroom size per Program, LRFMP 2016....422

9.0 CULTURAL RESOURCES

Table 9.1: Previously Identified Built Environment Historical Resources....446
Table 9.2: Historic Era Properties – Significance Unknown....450
Table 9.3: Paleo Sensitivity of Formations within the City of Vista....458

1.0 INTRODUCTION

This Existing Conditions Report (Report) provides an inventory of the existing conditions and trends within the City of Vista (City). The Report analyzes and summarizes demographic characteristics, market conditions and trends, land use and community character, mobility, natural resources, community health, hazards and public safety, public infrastructure, and other conditions in Vista. The information present in each category will aid in understanding the issues and opportunities present in Vista identifying the key findings. The findings will inform the development of policy and land use recommendations in the General Plan which will guide development, reinvestment, and identify potential areas for growth of housing, employment, industry, transportation, and recreation in Vista.

Additionally, this Report is intended to facilitate a discussion amongst community stakeholders, City staff, and decision makers that will inform and shape recommendations for future development within Vista. The Report serves as the starting point for identifying possible strategies, plans, policies, and implementation tools for future programs, regulatory changes, public investments, and ultimately development projects that will be most effective in achieving the vision for the future of Vista. The next step in the General Plan update process is public participation and conversations with the community as the foundation for shaping decisions in the updated General Plan.

1.1 Format and Organization of the Existing Conditions Report

The next eight chapters will be in the following general format:

- **Introduction.** The introduction is a short description of the issues covered in each chapter.
- **Findings.** This section provides a brief summary of the key findings for the assessed topics. The findings are a collection of the key facts and preliminary issues. They are then used to identify the key issues to be addressed in the General Plan Update.
- **Existing Conditions.** This section describes the existing conditions for each resource or issue area.
- **Regulatory Setting.** This section summarizes the laws and regulations pertaining to the topics identified. This could include federal, state, and local regulations.
- **Key Terms.** This section contains a list of terms that are unique to the relevant topics within each chapter of the Existing Conditions Report.

- **References.** This section provides a list of documents and websites referenced and persons consulted in preparing the Existing Conditions Report.

The Circulation and Transportation chapter will vary from the structure/format outlined above due to the technical nature of the content.

The Existing Conditions Report has the following nine chapters:

Introduction

This chapter provides background information on the purpose of the General Plan, describes the regional setting, and outlines the organization and content of the General Plan and Existing Conditions Report.

Market Conditions and Demographics

This chapter summarizes the population, housing, and employment conditions in Vista.

Land Use and Community

This chapter summarizes the land use patterns, policies, regulations, urban form, and social equity for the City of Vista.

Circulation and Transportation

This chapter summarizes the existing circulation and transportation conditions in Vista, including roadways, active transportation, and air transportation.

Natural Resources

This chapter discusses the existing natural resources and issues in the city, including air quality, water resources, biological resources, open space, scenic resources, and mineral resources.

Hazards and Safety

This chapter analyzes the existing hazards threatening the city, including wildfire, geologic and seismic, flooding, hazardous materials, and noise and vibrations.

Climate Change and Resiliency

This chapter summarizes the impact of greenhouse gas emissions and the climate change vulnerability and adaptation of Vista.

Public Facilities, Services, and Infrastructure

This chapter covers the existing public facilities, services and infrastructure for Vista, including water supply, utilities, fire protection, law enforcement, schools and libraries, and parks and recreation.

Cultural Resources

This chapter discusses the existing cultural resources in Vista, including the natural and cultural settings, any known archaeological and architectural resources, and the

regulatory setting for the preservation and management of the identified cultural resources.

1.2 What is a General Plan?

California state law requires each city and county to adopt a General Plan "for the physical development of the county or city, and any land outside its boundaries which in the planning agency's judgment bears relation to its planning". The General Plan expresses the community's development goals and embodies public policy relative to the distribution of future land uses, both public and private. It is a local jurisdiction's "blueprint" for future decisions surrounding what they value and issues covering all areas of life in a community, such as land use, health and safety, and resource conservation.

City officials, residents, businesses, and developers alike will use the policy-framework established by the General Plan. The components of a General Plan are created to impart the long-term vision for the future growth and development of a jurisdiction. To address the wide range of social, economic, infrastructure, and natural resources issues, the General Plan must be thorough in its examination of topics. The comprehensive approach aids in framing goals, policies, and implementation programs that are true to the communities' needs and values. A General Plan with coherent and integrated policies and implementation programs enables citizens to understand how the city envisions the future development and character of a community.

According to State law, the General Plan is required to address seven topics or "elements" that relate to a city's development and/or the infrastructure necessary to support the development. Those elements are land use, circulation, housing, conservation, open space, noise, and safety. Local jurisdictions may also include additional elements that are of special or unique interest for the community.

Other regulatory documents for community and land development, such as zoning ordinances and specific plans, must be consistent with the General Plan. While the other documents have a more direct hand in the development, the General Plan is much broader in scope. For example, zoning codes provide specific development regulations per the designated land use and density including minimum lot size, setback, height limits, etc. The land uses provided in a General Plan is the broad intent to achieve the long-term outlook and the zoning is the specific intent on that piece of land for development. Any development must meet both the specific requirements of the zoning code but also the broader scope of the General Plan goals and policies.

1.3 Using the General Plan

Locally elected officials, the City Council and Planning Commission, and the City staff use the General Plan as a guide for decision-making anything that might be covered in the goals and policies of each element. In addition to the local officials referencing the General

Plan, the residents, property owners, and businesses will refer to it as it pertains to each perspectives' interests in Vista. The General Plan ultimately is the basis for communication, coordination, and decision-making in planning efforts.

As mentioned previously, the General Plan is the starting point for the creation of other more detailed regulatory measures and administrative procedures. California planning law required those measures and procedures to be consistent with the General Plan. Those measures can include, but are not limited to, zoning and subdivision ordinances, capital improvement programs, specific plans, area plans, environmental impact assessment procedures, and building codes.

As Vista grows and shifts in time, the space we see today will change, the values and ideals will be different. The General Plan is like a planning constitution in that it is a living document. It will need to be reviewed and revised to ensure the goals and policies align with the City's vision of the future. Per California law, the document will be thoroughly reviewed every five to ten years as local conditions might change and new information comes in. The City of Vista is a "Charter City" and therefore may amend its General Plan as many times as they wish, unlike general law jurisdictions, which are limited to four amendments per year.

The Existing Conditions Report serves as an objective and policy-neutral analysis of the current conditions and trends in Vista. It details the population and market trends, the built environment, and environmental resources just to name a few areas of discussion. The policy framework and implementation programs to achieve the goals of the General Plan will then be developed.

Included in the Vista 2050 General Plan Update, there will also be an Environmental Impact Report (EIR) pursuant to the requirements of the California Environmental Quality Act (CEQA) as set forth in the Public Resources Code (PRC) 21100 and 21157 and CEQA Guidelines Sections 15126, 15175, and 15176. The City Council and Planning Commission will use the EIR during the General Plan Update process to consider potential environmental implications associated with implementation of the General Plan and to identify feasible mitigation measures.

1.4 Regional Setting and Planning Boundaries

As seen in **Figure 1.1** Regional Location, the City of Vista is situated in northern San Diego County (North County), approximately 40 miles north of downtown San Diego and just seven miles inland from the Pacific Ocean. It is surrounded the cities of Oceanside, Carlsbad, and San Marcos and the unincorporated areas of Bonsall and North County Metro.

Vista was incorporated on January 28, 1963, and encompasses approximately 19 square miles. The city is characterized by the semi-rural and rolling hills with a mild Mediterranean climate many sought after. Elevations average from 200-750 feet above mean sea level in

the developed portion of the City to 1,200 feet at the highest point of the San Marcos Mountains in the eastern portion of the City's edge.

The General Plan uses a few terms to describe the city and areas surrounding it, including the following:

City Limits

The city limits is the defined boundary of the jurisdiction. The City limits include the corporate boundary and any property it owns. The City of Vista covers about 18.8 square miles. The extents of the City are shown in **Figure 1.2** Vista City Limits.

Sphere of Influence

A Sphere of Influence (SOI) is a tool created by a Local Agency Formation Commission (LAFCo) to designate the future boundary and service area for a city. The SOI for the City of Vista is comprised of approximately seven square miles of unincorporated area adjacent to the city limits. The SOI borders Vista to the north and east and a small area to the west.

Planning Area

State law requires the General Plan to address the area within the jurisdictions planning area. In the case of the City of Vista, the planning area includes both the SOI and city limits. Planning with consideration of the land outside of the city limits is important to provide continuity with the region and alignment with the County of San Diego General Plan.

Figure 1.1: Regional Location

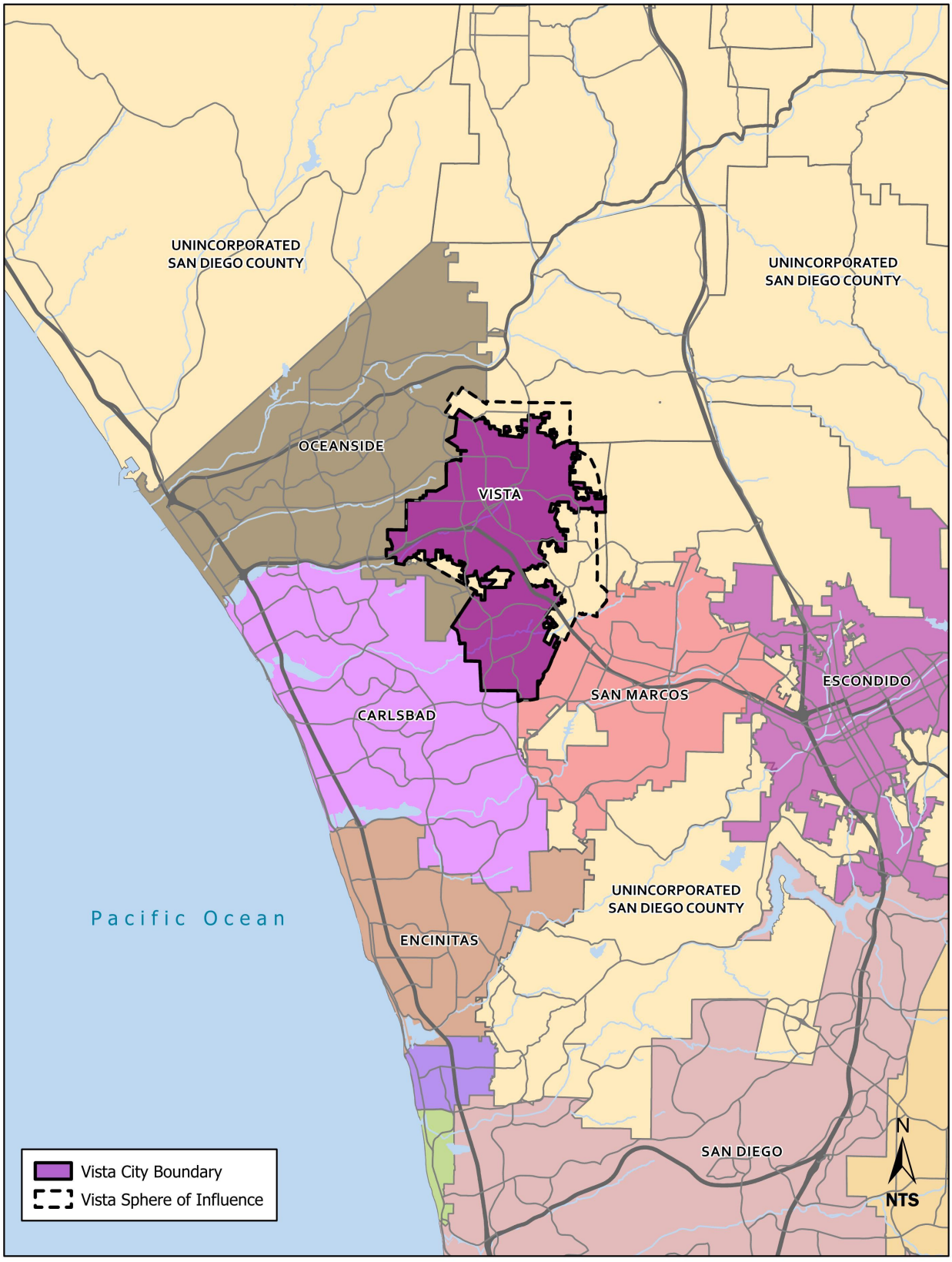
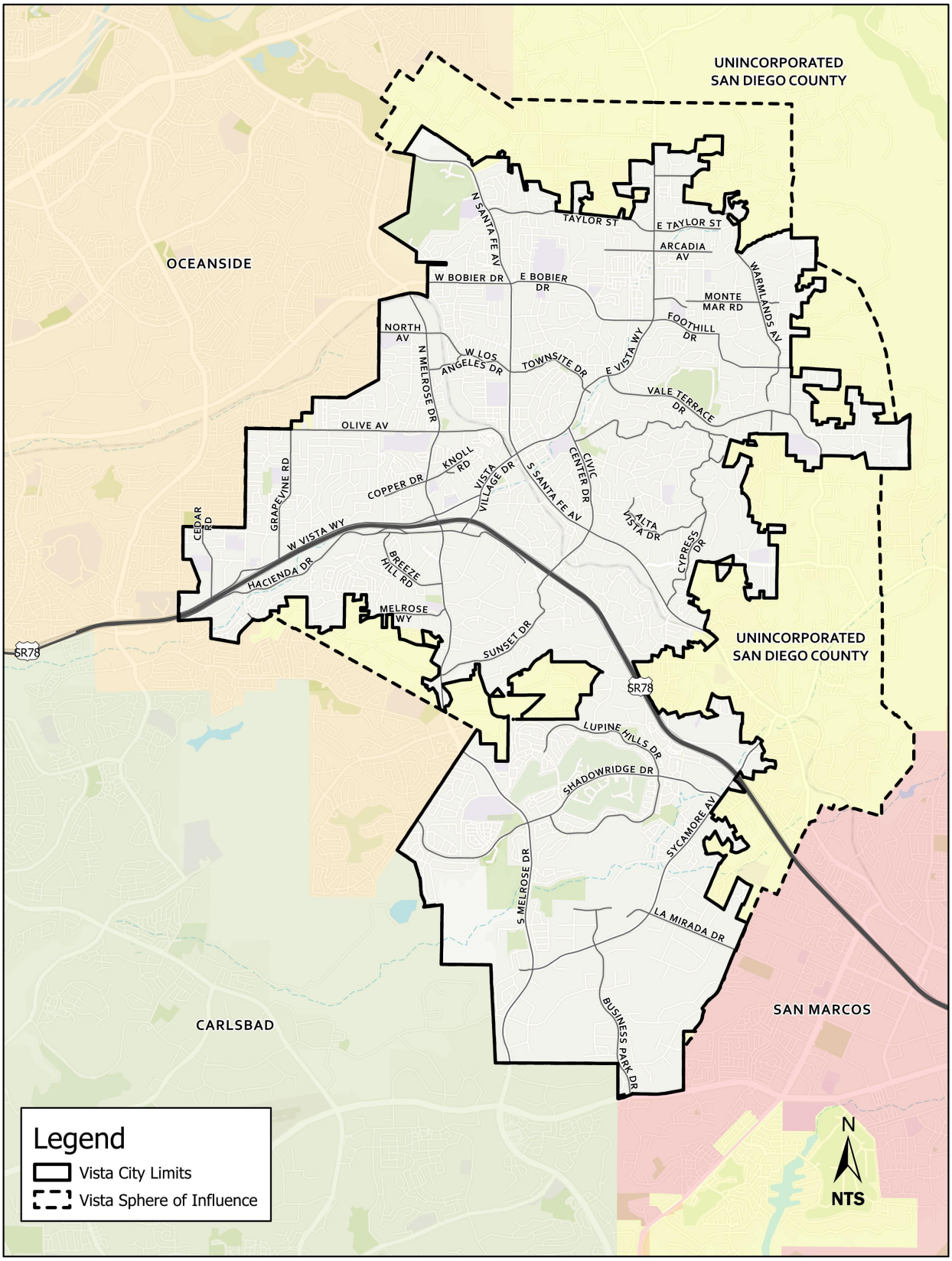


Figure 1.2: Vista City Limits



2.0 MARKET CONDITIONS AND DEMOGRAPHICS

This chapter summarizes the existing and projected market conditions and demographics for the City of Vista. Demographic, economic, and housing information is from the San Diego Association of Governments (SANDAG) Series 14 Regional Growth Forecast for the City of Vista, which pulls data from the U.S. Census Bureau, U.S. Census Bureau American Community Survey data (ACS), and various other sources. Market conditions in this chapter are analyzed using available data from SANDAG, Costar, United States Bureau of Labor Statistics (BLS), and other sources as noted. The analysis focuses on the City of Vista, and where appropriate and relevant to future growth in Vista, includes information regarding surrounding cities and unincorporated areas in the County of San Diego.

2.1 Population and Household Characteristics

This section discusses the relevant demographic and household characteristics trends for the City. It describes population and household growth, ethnicity, education, poverty rates, and household income. The most recently available data from SANDAG was used for both existing conditions and forecasts.

2.1.1 Findings

- The City of Vista's population growth is expected to remain relatively constant and based on the forecasts is not likely to experience significant growth. Between 2020 and 2050, Vista is only estimated to increase in population by slightly over 5,000 people, a modest 5.7 percent increase.
- The population of residents 70-80+ is expected to experience the most growth between 2020 and 2050. This increase is assumed to be due to existing residents in the 50-70 age group remaining in Vista as they age.
- The racial composition of the population of Vista shows that the Hispanic population is the largest ethnic group at 45 percent of the population.
- In general, the educational attainment in Vista is slightly less than the County average. The largest gap appears to be higher education. Approximately 40 percent of the County's population hold either a bachelor or more advanced degree, whereas 25 percent of the City's population holds a bachelor or more advanced degree.
- The City of Vista is expected to experience a growth of approximately 4,057 households between 2016 and 2050. Many factors could contribute to this relatively low growth trend such as: no land available for additional housing; housing and construction cost; low housing inventory; and other conditions.

- The City of Vista has a slightly lower median income than that of the County of San Diego though approximately 70 percent of the population of both Vista and the County of San Diego are earning at or above the median household income of the area.

2.1.2 Existing Conditions

Population Growth

SANDAG's Series 14 Forecast was used to determine anticipated population growth for the City of Vista. The data looks only within the City of Vista limits and does not include the SOI.

Vista is forecasted to add 5,862 residents between 2020 and 2050, with projected population increasing from 103,411 to 109,273, a 5.7 percent increase.

The forecast projects that people aged 70-80 years old and above will see the largest growth between 2020-2050, while people ages 0-29 years old will see a large decrease in population.

Table 2.1 illustrates the cumulative population growth in the City of Vista and **Table 2.2** illustrates this growth by age groups:

Table 2.1: Population Growth Trends

	2020 Population	2030 Population	2040 Population	2050 Population	2020-2050 Change	% Increase
City of Vista	103,411	107,078	109,063	109,273	5,862	5.7
County of San Diego	3,383,954	3,552,475	3,676,156	3,746,054	362,100	10.7

Source: SANDAG Series 14 Forecast

Table 2.2: City of Vista Forecasted Population Change by Age

	2020	2050	Total Change
Under 10	15,075	12,228	(2,847)
10 to 19	15,309	13,530	(1,779)
20 to 29	16,023	15,693	(330)
30 to 39	14,509	15,541	1,032
40 to 49	11,265	14,141	2,876
50 to 59	11,491	11,186	(305)
60 to 69	10,188	10,303	115
70 to 79	5,865	7,870	2,005
80+	3,686	8,781	5,095
Total	**103,411**	**109,273**	**5,862**

Source: SANDAG Series 14 Forecast

Race and Ethnicity

As shown in **Table 2.3,** the racial composition of Vista and the County of San Diego is similar. An estimated 45 percent of Vista's population identify as Hispanic, the largest of any race/ethnic group represented. The City of Vista has a slightly higher percentage of Hispanic population at 45 percent, compared to the County at 32.8 percent. An estimated 41 percent of the 2020 population in Vista identify as white, which is similar to the countywide percentage of 44 percent.

Table 2.3: Population by Race and Ethnicity in City of Vista and San Diego County, 2020

Race and Ethnicity	City of Vista		San Diego County	
	Population	% of Total*	Population	% of Total*
American Indian	643	0.6	22,212	0.7
Asian	7,347	7.1	447,318	13.2
Black	3,164	3.1	168,830	5.0
Hispanic	46,713	45.2	1,110,869	32.8
Other	210	0.2	8,073	0.2
Pacific Islander	412	0.4	14,282	0.4
Two or More	2,738	2.6	111,743	3.3
White	42,184	40.8	1,500,627	44.3
Total	**103,411**		**3,383,954**	

** Percentages are rounded to the nearest decimal place.*

Source: SANDAG Series 14 Forecast

Educational Analysis

Table 2.4 shows the educational attainment for the City of Vista and County of San Diego for residents 25 years and older. Countywide, 40 percent of the County's population hold either a bachelor or more advanced degree. In Vista, that statistic is only 25 percent. An estimated 80 percent in the City of Vista have a regular high school diploma, compared to the County where attainment of a regular high school diploma is at 88 percent of the population. In general, the educational attainment in the City is slightly less than the County average.

Table 2.4: Educational Attainment in City of Vista and San Diego County, 2016–2020 (5-Year Average)

Educational Attainment	City of Vista		San Diego County	
	Population 25 years and over	% of Total*	Population 25 years and over	% of Total*
No schooling completed	1,787	2.8	48,877	2.2
Nursery school	74	0.1	450	0.0
Kindergarten	19	0.0	917	0.0
1st grade - 9th grade	6,984	10.8	122,246	5.4
10th grade - 12th grade, no diploma	3,762	5.8	98,279	4.3
Regular high school diploma	14,344	22.1	359,744	15.9
GED or alternative credential	1,571	2.4	52,876	2.3
Some college, no degree	14,753	22.7	498,792	22.0
Associate's degree	5,353	8.2	189,078	8.3
Bachelor's degree	11,027	17.0	547,105	24.2
Master's degree	3,536	5.4	231,841	10.2
Professional school degree	1,128	1.7	65,763	2.9
Doctorate degree	595	0.9	48,939	2.2
Total	**64,933**		**2,264,907**	

** Percentages are rounded to the nearest decimal place.*

Source: U.S. Census Bureau, 5-year estimates

Poverty Rate

Table 2.5 shows the median household income, per capita income, and percentage of persons in poverty for the City of Vista and the County of San Diego during the 5-year period of 2016–2020. The persons in poverty for Vista was slightly below the statewide percentage of 12.3 percent but higher than the countywide percentage of 9.5 percent.

Table 2.5: Persons in poverty, City of Vista and San Diego County, 2016–2020 (5-Year Average)

	City of Vista	San Diego County	California
Median household income (in 2020 dollars), 2016-2020	$73,163	$82,426	$78,672
Per capita income in past 12 months (in 2020 dollars), 2016-2020	$30,781	$39,737	$38,576
Persons in poverty, %	11.3%	9.5%	12.3%

Source: U.S. Census Bureau, 5-year estimates

Household Growth

As shown in **Table 2.6** below, the City of Vista is expected to experience a growth of approximately 4,057 households between 2016 and 2050 reflecting a 13 percent increase. When comparing this to the countywide expected growth, this is significantly less. The County is expected to increase its households by approximately 21 percent during the same period. According to the U.S. Census Bureau 5-year estimates (2016-2020), the average persons per household in Vista was 3.19 compared to the County which was 2.89 during that 5-year period.

Table 2.6: Household Growth Trends, City of Vista and County of San Diego

	2016	2025	2035	2050	2016-2050 change	% Increase
City of Vista	31,430	33,177	35,092	35,487	4,057	12.9
County of San Diego	1,134,849	1,219,740	1,327,581	1,374,834	239,985	21.1

Source: SANDAG Series 14 Forecast

Income Distribution

Table 2.7 below shows that both the City of Vista and the County of San Diego have approximately 70 percent of their populations earning at or above the median household income of the area. According to the County of San Diego, persons earning 80 percent of the area median income (AMI) are considered low income. Therefore, in the City of Vista, approximately 21 percent of the population are considered low income. Similarly, the County has slightly over 21 percent at or

below 80 percent of the AMI and are therefore considered low income. While the City of Vista and County of San Diego are relatively similar in most income levels, the County of San Diego has a slightly higher percentage of the population earning over $100,000 annually, therefore raising their median household income overall higher than the City of Vista at $82,426 compared to $73,163.

Table 2.7: Household Income, City of Vista and San Diego County, 2016–2020 (5-Year Average)

	City of Vista	San Diego County
	% of total households *	
Less than $15,000	3.3	4.1
$15,000 to $29,999	1.9	3.2
$30,000 to $44,999	8.3	6.2
$45,000 to $59,999	7.2	6.8
$60,000 to $74,999	10.6	9.7
$75,000 to $99,999	20.0	15.8
$100,000 to $124,999	14.7	12.7
$125,000 to $149,999	17.1	18.4
$150,000 to $199,999	9.6	10.1
$200,000 or more	7.4	12.9
Median Household Income	$73,163	$82,426

** Percentages are rounded to the nearest decimal place.*

Source: U.S. Census Bureau, 5-year estimates

2.2 Housing Conditions and Trends

This section discusses the relevant housing unit characteristics and trends for the City. It describes housing units by type and vacancy rates. The most recently available data from SANDAG and U.S. Census Bureau was used for both existing conditions and forecasts.

2.2.1 Findings

- Between 2020 and 2050, there is estimated to be a decline in the number of single-family attached units and an increase in multifamily units.
- The City of Vista has “low” vacancy rates when compared to the normal four to six percent. This could be due to a number of reasons, including low inventory, housing cost, supply, as well as units that are vacant for occasional use such as seasonal or recreational units.

2.2.2 Existing Conditions

Housing Units by Type

As shown in **Table 2.8** below, there are approximately 32,436 housing units in the City of Vista, of which the largest housing type is single family accounting for 49 percent of the total housing units, followed by multifamily at 39 percent. Per the SANDAG Series 14 Forecast, there is estimated to be an increase in multifamily units over the next 30+ years, resulting in a much more even distribution of multifamily and single-family housing types in the City of Vista. These trends are similar countywide.

Table 2.8: Housing Units by Type, City of Vista and County of San Diego

	City of Vista					County of San Diego			
	Number of Units in 2020	**% of Total***	**Est. Number of Units in 2050**	**% of Total**		**Number of Units in 2020**	**% of Total***	**Est. Number of Units in 2050**	**% of Total**
Mobile Home	1,998	6.2	1,998	5.4		42,107	3.4	42,107	2.9
Multifamily	12,553	38.7	16,082	43.4		453,903	37.0	649,228	44.1
Single-family Attached	2,064	6.4	2,479	6.7		108,141	8.8	120,486	8.2
Single-family Detached	15,821	48.8	16,515	44.5		622,310	50.7	659,465	44.8
Total	**32,436**		**37,074**			**1,226,461**		**1,471,286**	

** Percentages are rounded to the nearest decimal place.*

Source: SANDAG Series 14 Forecast

Residential Vacancy Rates and Type of Vacancy

Vacancy rates are an indicator of both housing supply and demand. Low vacancy rates indicate an undersupply of housing, suggesting that housing costs may be inflated and that households may find it difficult to find housing with an affordable monthly payment. Meanwhile, a high number of vacant units indicate an oversupply of housing.

As shown in **Table 2.9**, the City of Vista has a lower rental vacancy rate but a higher homeowner vacancy rate than the County of San Diego. Low inventory may be contributing to the low vacancy rates. In the City of Vista, the largest percentage of unoccupied units are considered "for rent," followed by "other vacant." Housing costs and supply may be a contributing factor in many of these units being unoccupied. Similarly, in the County of San Diego, the highest percentage of

unoccupied units are "For seasonal, recreational, or occasional use" and then following that is "For rent."

Table 2.9: Residential Vacancy, City of Vista, and County of San Diego

	City of Vista	San Diego County
	Housing Units	Housing Units
Total Occupied Housing Units	30,917	1,130,703
Owner-occupied	15,328	609,350
Renter-occupied	15,589	521,353
Total Vacant Housing Units	1,302	84,825
For rent	422	20,716
Rented, not occupied	109	6,869
For sale only	237	5,706
Sold, not occupied	26	4,144
For seasonal, recreational, or occasional use	206	25,754
For migrant workers	0	152
Other vacant	302	21,484
Homeowner vacancy rate	1.5	0.9
Rental vacancy rate	2.6	3.8

Source: U.S. Census Bureau, 5-year estimates (2016-2022) Table B25004

2.3 Employment and Industry Trends

This section discusses the relevant employment and industry characteristics and trends for the City. The section highlights the various industries within and around Vista as well as the distribution of Vista's labor force by each industry. The most recently available data from SANDAG and U.S. Census Bureau was used for both existing conditions and forecasts.

2.3.1 Findings

- An estimated 17 percent of the labor force in Vista is employed in the educational services, health care and social assistance industries, construction, and manufacturing industries combined account for approximately 22 percent of the local labor force. These industries account for the largest percentage of the labor force in the City.
- Findings relating to commuting patterns can be found in Chapter 4: Circulation and Transportation.

2.3.2 Existing Conditions

Distribution of Local Labor Force by Industry

According to the 2016-2020 ACS, the local labor force in Vista work in similar industries to that of the County of San Diego. **Table 2.10** identifies retail trade, educational services, and health care and social assistance, and professional, scientific, and management, and administrative and waste management services are the largest industries for the local labor force. Construction and manufacturing are the third and fourth largest industries in the City of Vista. Per the SANDAG Series 14 data, the City of Vista is expected to have an increase of 13.5 percent in wage and salary jobs between 2016 and 2050.

Table 2.10: Industries, City of Vista and County of San Diego

	City of Vista		San Diego County	
	Jobs	**% of Total***	**Jobs**	**% of Total***
Agriculture, forestry, fishing and hunting, and mining	833	1.7	9,544	0.6
Construction	5,134	10.3	105,112	6.8
Manufacturing	6,134	12.3	149,802	9.7
Wholesale trade	1,298	2.6	33,958	2.2
Retail trade	6,692	13.4	158,582	10.3
Transportation and warehousing, and utilities	1,771	3.5	73,332	4.8
Information	713	1.4	29,875	1.9
Finance and insurance, and real estate and rental and leasing	2,238	4.5	96,091	6.3
Professional, scientific, and management, and administrative and waste management services	6,529	13.1	254,566	16.6
Educational services, and health care and social assistance	8,554	17.1	340,669	22.2
Arts, entertainment, and recreation, and accommodation and food services	5,550	11.1	139,151	9.1
Other services, except public administration	2,968	5.9	71,695	4.7
Public administration	1,616	3.2	74,714	4.9
Total	**50,030**		**1,537,091**	

** Percentages are rounded to the nearest decimal place.*

Source: U.S. Census Bureau, 5-year estimates

Occupational Distribution of Local Labor Force

Table 2.11 below highlights the occupation of the civilian population aged 16 years and older. As shown in the table, the management, business, science, and arts occupations hold the highest percentage of any occupations for the City of Vista at 31.9 percent.

Table 2.11: Occupation of Civilian Population 16 years and over, City of Vista and County of San Diego

	City of Vista		San Diego County	
	Jobs	**% of Total***	**Jobs**	**% of Total***
Civilian employed population 16 years and over	49,930		1,537,091	
Management, business, science, and arts occupations:	**15,921**	**31.9**	**721,519**	**46.9**
Management, business, and financial occupations:	6,509		286,013	
Management occupations	4,995		184,126	
Business and financial operations occupations	1,514		101,887	
Computer, engineering, and science occupations:	3,158		171,935	
Computer and mathematical occupations	1,729		75,421	
Architecture and engineering occupations	879		56,651	
Life, physical, and social science occupations	550		39,863	
Education, legal, community service, arts, and media occupations:	4,316		169,264	
Community and social service occupations	812		24,912	
Legal occupations	483		20,682	
Educational instruction, and library occupations	1,842		86,209	
Arts, design, entertainment, sports, and media occupations	1,179		37,461	
Healthcare practitioners and technical occupations:	1,938		94,307	
Health diagnosing and treating practitioners and other technical occupations	806		64,886	
Health technologists and technicians	1,132		29,421	
Service occupations:	**11,344**	**22.7**	**253,915**	**16.5**

Healthcare support occupations	2,092		53,571	
Protective service occupations:	656		31,507	
Firefighting and prevention, and other protective service workers including supervisors	460		19,170	
Law enforcement workers including supervisors	196		12,337	
Food preparation and serving related occupations	3,363		77,332	
Building and grounds cleaning and maintenance occupations	3,300		49,113	
Personal care and service occupations	1,933		42,392	
Sales and office occupations:	**7,605**	**15.2**	**294,167**	**19.1**
Sales and related occupations	4,256		140,405	
Office and administrative support occupations	3,349		153,762	
Natural resources, construction, and maintenance occupations:	**6,605**	**13.2**	**112,639**	**7.3**
Farming, fishing, and forestry occupations	618		5,634	
Construction and extraction occupations	4,160		70,585	
Installation, maintenance, and repair occupations	1,827		36,420	
Production, transportation, and material moving occupations:	**8,455**	**16.9**	**154,851**	**10.1**
Production occupations	3,381		61,586	
Transportation occupations	1,662		42,938	
Material moving occupations	3,412		50,327	

** Percentages are rounded to the nearest decimal place.*

Source: U.S. Census Bureau, 2021: ACS 1-Year Estimates (Table S2401)

2.4 Supply Analysis

The following section reviews the existing supply of residential, retail, office, and industrial spaces in the City of Vista.

2.4.1 Residential

The purpose of this section is to detail the current residential market conditions in the City of Vista. Approximately 41 percent of Vista's current housing stock is comprised of multifamily units.

Due to development trends, recent legislation at the state level, and greenhouse gas emissions standards, it is estimated that most of the future housing growth will be

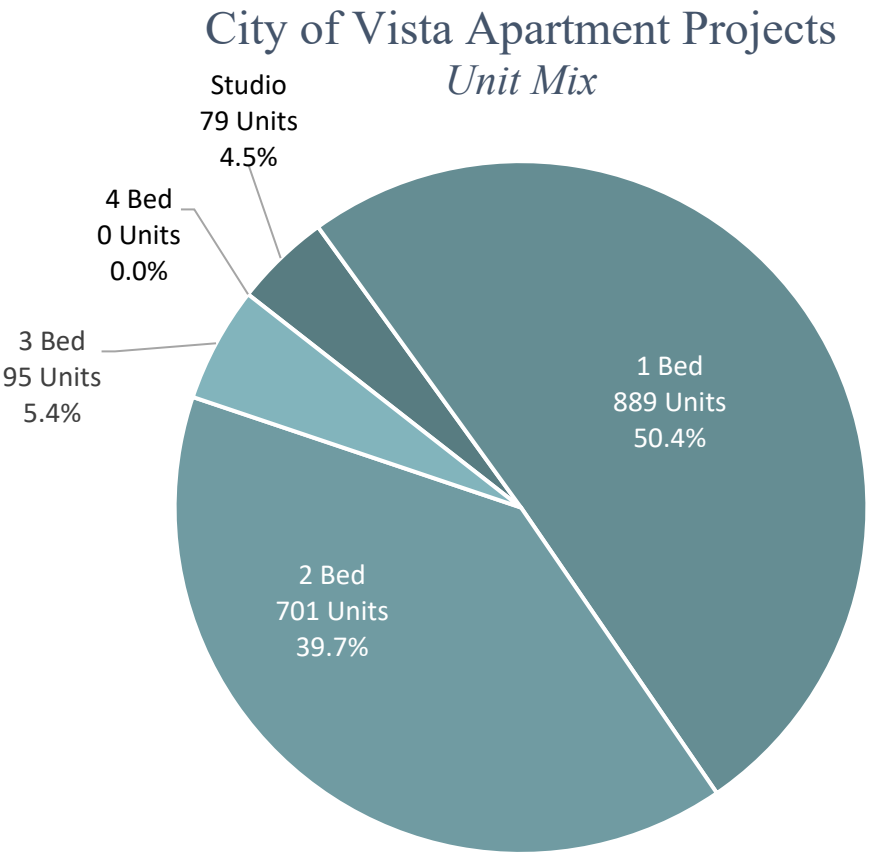
comprised of higher density multifamily product. Single-family development opportunities will be few, if any. Therefore, the existing conditions analysis focuses on multifamily housing, which will be the preponderance of future development.

Vista Apartment Market

The analysis inventoried apartment projects built since 2010 to demonstrate the type of rental housing that has been developed during the last economic cycle (2010-2022 Q3 Quarter to Date (QTD). There are currently 1,764 market-rate apartment units in 13 projects within the City of Vista. Project sizes range from four units to 290 units. While the analysis searched back to 2010, there was no new construction reported from 2010 to 2014. The earliest project constructed is in 2015 with the newest project in 2022, and the average year built is 2019.

Unit Mix

The following chart depicts by percentage the array of unit mix within the existing supply of apartment inventory in the competitive set.



Source: London Moeder Advisors, Costar

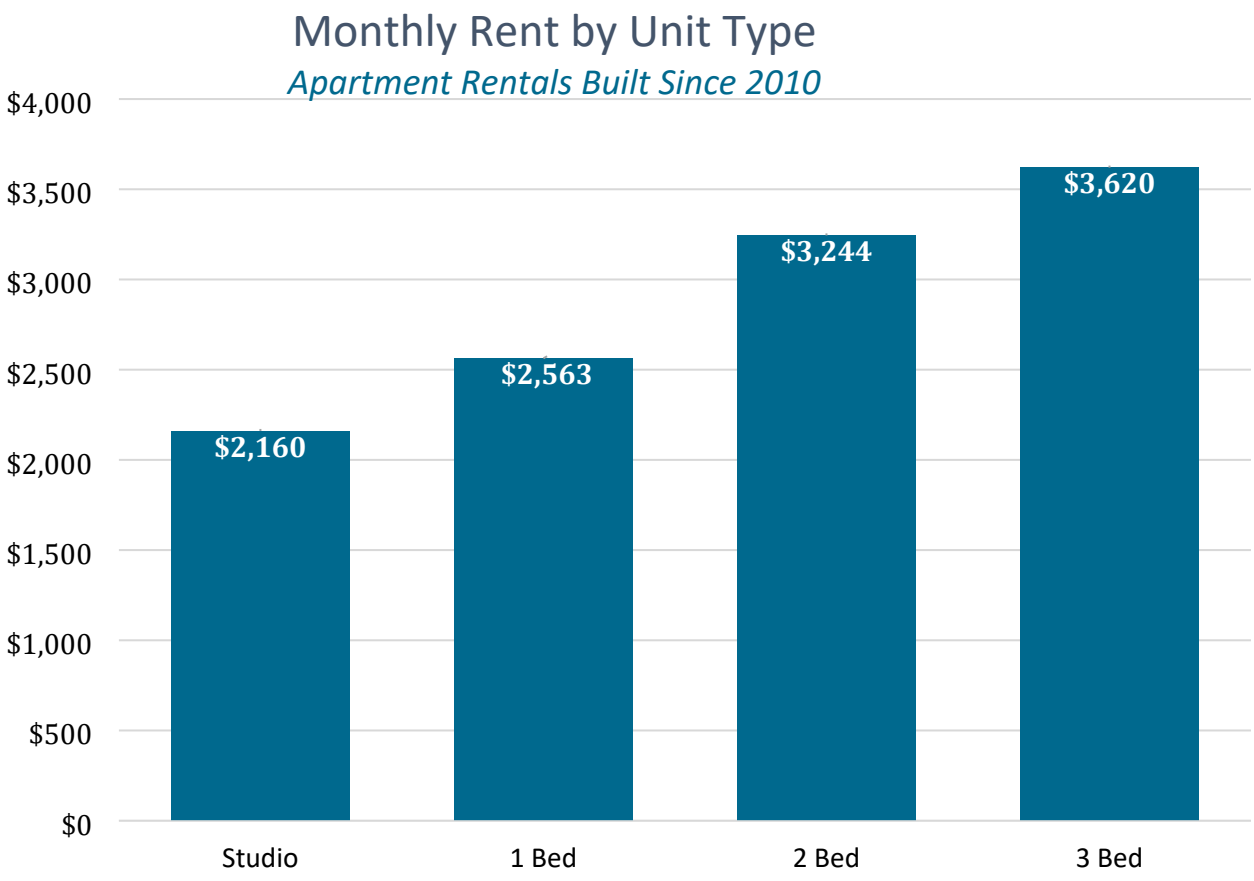
Apartments in the City of Vista consist of predominantly one- and two-bedroom units. There are a total of 889 one-bedroom units (50.4 percent) and 701 two-bedroom units (39.7 percent) which, when combined, comprise approximately 90.1 percent of units in Vista.

The next largest segment consists of three-bedroom units. There are 95 three-bedroom units comprising 5.4 percent of units in the City of Vista. There are 79 studio units (4.5 percent) and zero four-bedroom units in Vista.

Monthly Rental Rates

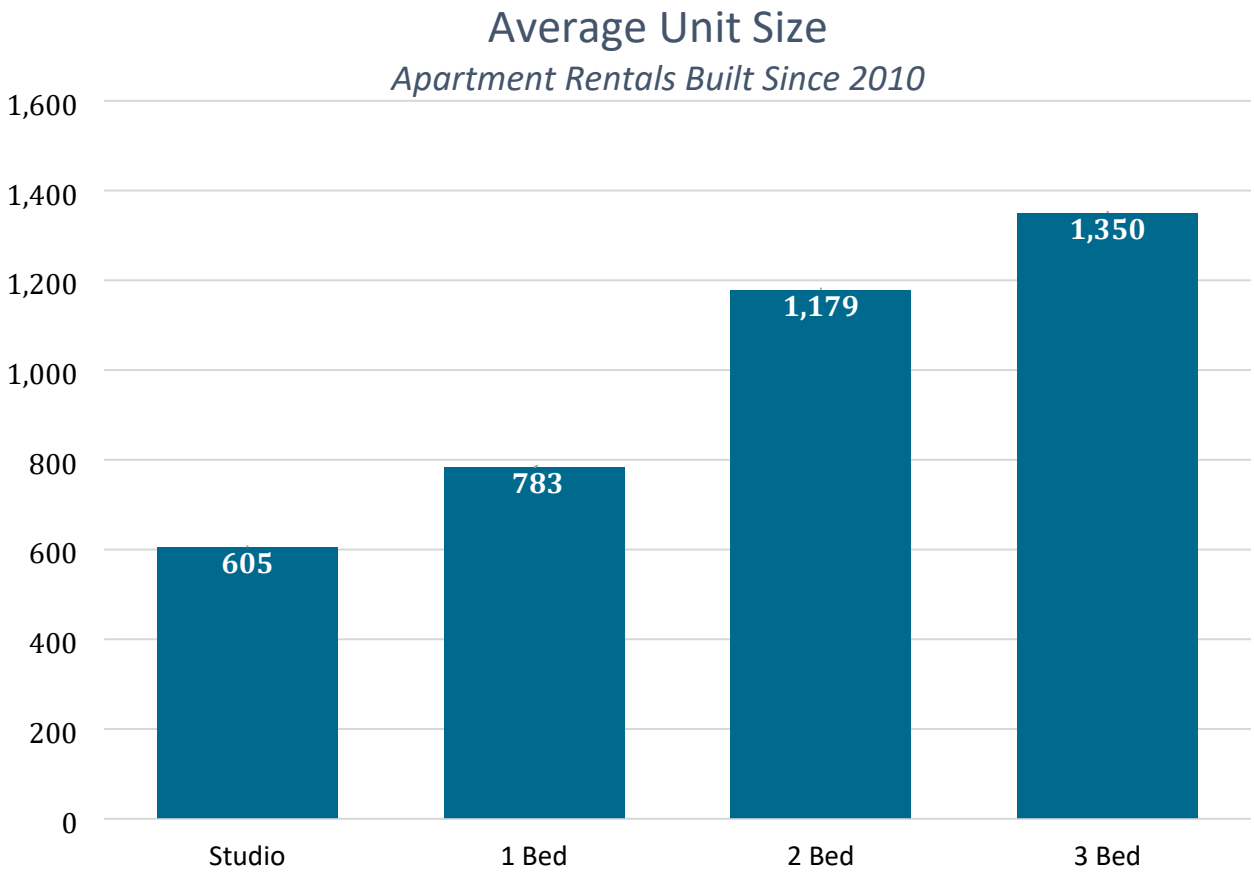
Of the 1,764 apartment units in Vista where monthly rental rates and unit sizes are known, the overall average monthly rent is $2,897 for a 979 square foot average unit, or $3.07 monthly per square foot.

Apartment rents range from $1,895 to $3,900 per month. The following chart details the average monthly rental rates by unit type for apartment units in the City of Vista.



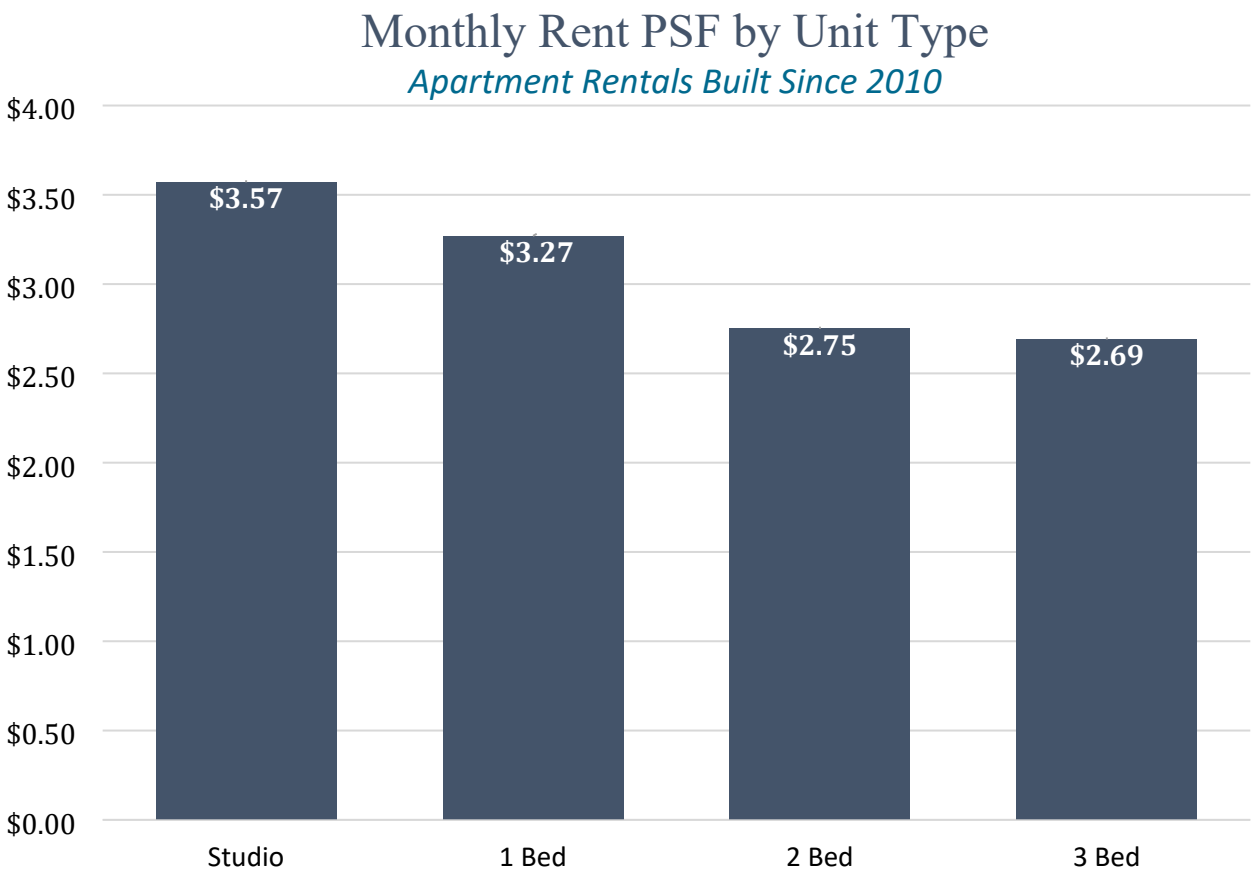
Source: London Moeder Advisors, Costar

Apartment unit sizes range from 400 to 1,900 square feet. The following chart details the average unit sizes by unit type for apartment units in the City of Vista.



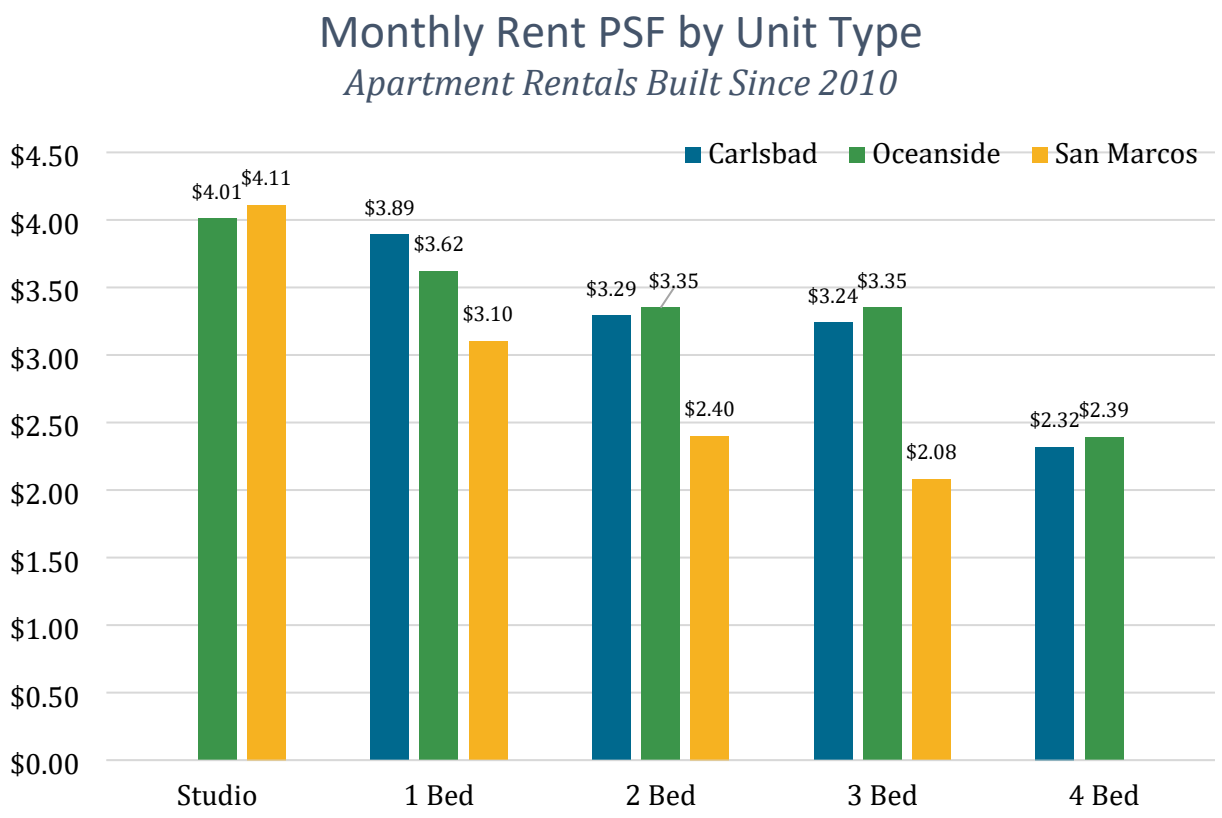
Source: London Moeder Advisors, Costar

Monthly rent per square foot averages $3.07 per square foot. The following chart details the average rent per square foot by unit type for apartment units in the City of Vista.



Source: London Moeder Advisors, Costar

Overall, the rental rates in the City of Vista are considered moderate relative to other San Diego communities. Surrounding areas such as Oceanside and Carlsbad command higher monthly rental rates that exceed $3.00 to $4.00 per square foot. Monthly rental rates in Vista are more comparable to nearby San Marcos. These rates reflect locational attributes, as well as newer, more highly amenitized stock.



Source: London Moeder Advisors, Costar

Future Vista Residential Supply

There is currently only one for-rent project in the City that is under construction comprising 107 units. The project is located at 1086 Sycamore Avenue in the southeast portion of the City, just south of the SR-78. The project is expected to be completed in 2024.

2.4.2 Retail Market

The purpose of this section is to detail the current and historical market conditions for retail space in Vista.

Table 2.12 and following chart detail the historical performance for retail space in the City of Vista. The total supply of retail space is comprised of 5,183,708 square feet of rentable building area (RBA). Since 2012, there has been limited retail growth with a net increase of only 81,595 square feet, or a 1.6 percent increase since 2012.

Retail rents in Vista have shown steady growth. Since 2012, the average monthly asking rent has increased from $1.42 per square foot (2012) to $1.67 per square foot (2021), representing a 17.6 percent increase or 1.8 percent compounded annually. It should be noted, however, that retail rents grew significantly only after

2019. Prior to that, retail rents were largely stagnant, ranging from $1.33 to $1.44 between 2012 and 2018. Therefore, most of the significant retail rent growth occurred in the last three years, increasing from $1.37 (2019) to $1.67 (2021) which is a 22 percent increase.

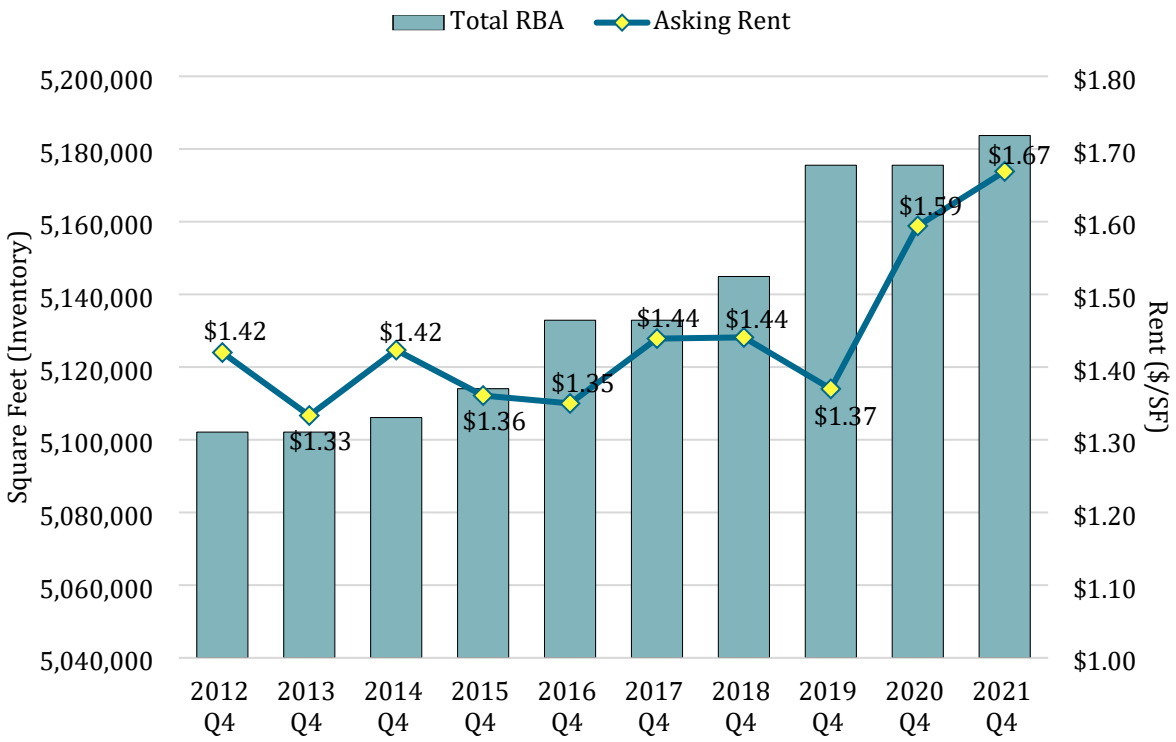
Table 2.12: Historical Retail Market Conditions, City of Vista

Period	Total RBA	Occupied SF	Absorption	Direct Vacant SF	Sublet Vacant SF	Total Vacant %	Asking Rent
2012 Q4	5,102,113	4,789,641	-	285,863	26,609	6.1%	$1.42
2013 Q4	5,102,113	4,715,393	(74,248)	360,111	26,609	7.6%	$1.33
2014 Q4	5,106,113	4,779,518	64,125	324,035	2,560	6.4%	$1.42
2015 Q4	5,114,044	4,788,571	9,053	322,913	2,560	6.4%	$1.36
2016 Q4	5,132,894	4,874,799	86,228	251,028	7,067	5.0%	$1.35
2017 Q4	5,132,894	4,879,645	4,846	224,336	28,913	4.9%	$1.44
2018 Q4	5,144,922	4,939,040	59,395	185,762	20,120	4.0%	$1.44
2019 Q4	5,175,538	4,917,701	(21,339)	237,417	20,420	5.0%	$1.37
2020 Q4	5,175,538	4,841,023	(76,678)	332,581	1,934	6.5%	$1.59
2021 Q4	5,183,708	4,821,854	(19,169)	361,365	489	7.0%	$1.67
Total Inventory Increase		**81,595**					
Total Net Absorption		**32,213**					

Source: London Moeder Advisors, CoStar

Total Retail Supply & Average Asking Rent

City of Vista 2012 Q4 - 2021 Q4



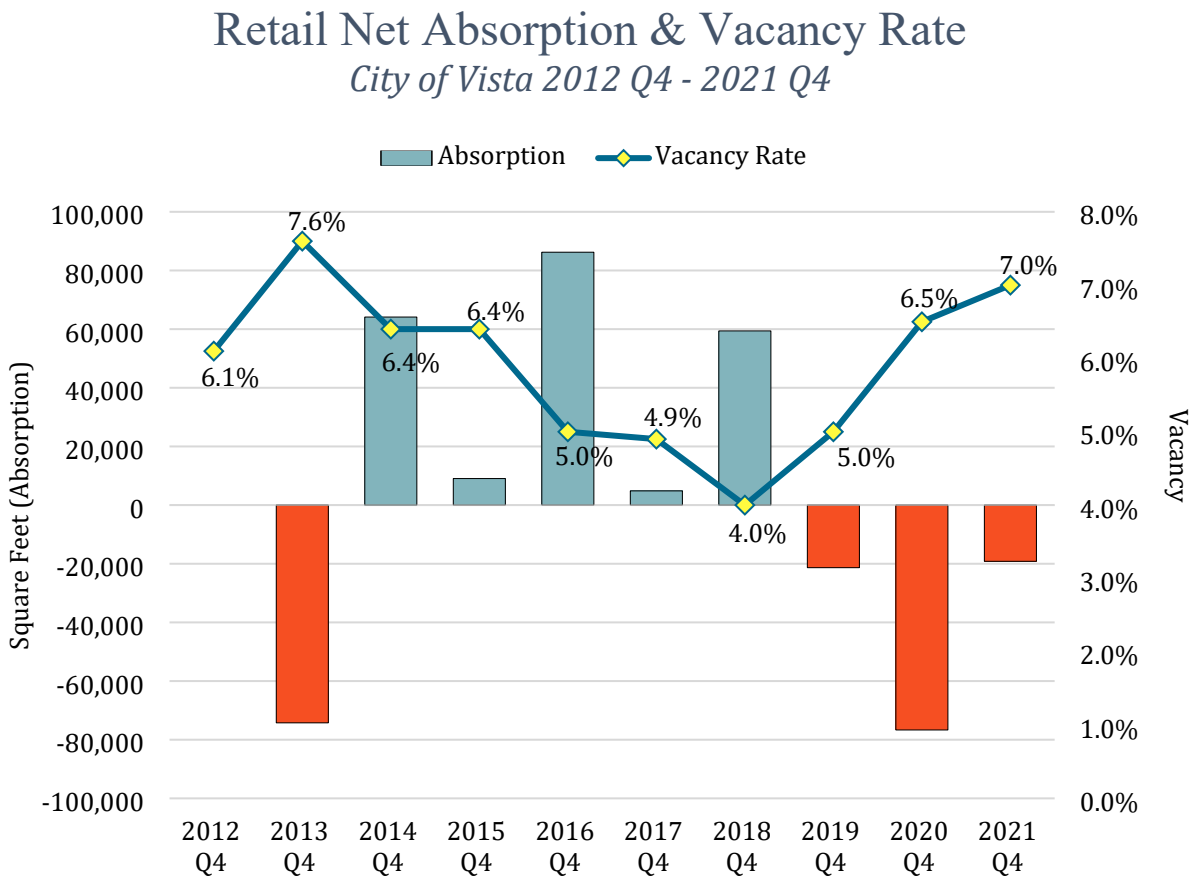
Source: London Moeder Advisors, Costar

Absorption & Vacancy

Vista's retail vacancy rate ranged from four percent (2018) to 7.6 percent (2013) since 2012 and averaged 5.9 percent during that period. Retail vacancy in Vista has been on the rise in recent years, increasing from five percent to 6.5 percent between 2019 and 2020, before increasing to seven percent by the end of 2021.

From 2012 to 2021, the total net absorption, a metric that is used to evaluate how much real estate is occupied and vacated within a given market and time by subtracting the total amount of space a tenant has moved into by the total amount of space a tenant has moved out of, for Vista retail was 32,213 square feet. The market achieved positive net absorption of 223,647 square feet between 2014 and 2018. The market has since experienced, however, negative net absorption of 117,186 square feet.

Since 2012, the market has achieved annual net absorption of 3,579 square feet on average. This growth has resulted in the vacancy rate increasing from 6.1 percent in 2012 to seven percent in 2021. Though retail vacancy decreased steadily from 2013 to 2018, vacancy grew significantly from 2019 to 2021, negating more than half of the positive absorption gains from 2014 to 2018.



Source: London Moeder Advisors, Costar

2.4.3 Office Market

Historical Inventory & Rent

Table 2.13 and following chart detail the historical performance for office space in the City of Vista. The total supply of office space is comprised of 1,757,635 square feet of rentable building area. Since 2012, there has been limited office growth with a net increase of only 18,260 square feet, a 1.05 percent increase since 2012.

Since 2012, the average monthly asking rent has increased from $1.65 per square foot (2012) to $1.94 per square foot (2021), representing a 17.5 percent increase, a 1.8 percent compounded annually. It should be noted, however, that office rents grew significantly only after 2019. Prior to that, office rents were largely stagnant, ranging from $1.58 to $1.67 between 2012 and 2019. Therefore, most of the significant retail rent growth occurred in the last three years, increasing from $1.67 (2019) to $1.94 (2021) which is a 16 percent increase or 5.5 percent compounded annually.

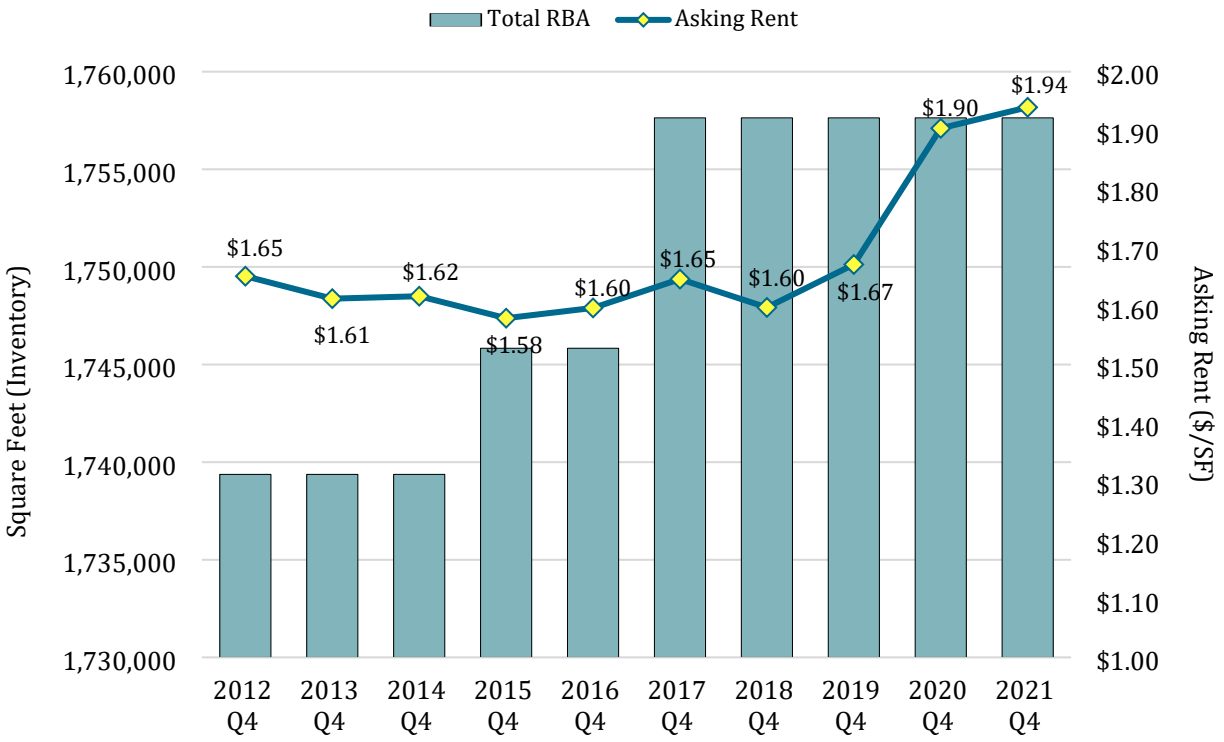
Table 2.13: Historical Office Market Conditions, City of Vista

Period	Total RBA	Occupied SF	Absorption	Direct Vacant SF	Sublet Vacant SF	Total Vacant %	Asking Rent
2012 Q4	1,739,375	1,445,801	-	279,259	14,315	16.9%	$1.65
2013 Q4	1,739,375	1,389,717	(56,084)	349,658	0	20.1%	$1.61
2014 Q4	1,739,375	1,433,258	43,541	306,117	0	17.6%	$1.62
2015 Q4	1,745,835	1,539,576	106,318	206,259	0	11.8%	$1.58
2016 Q4	1,745,835	1,516,540	(23,036)	229,295	0	13.1%	$1.60
2017 Q4	1,757,635	1,518,348	1,808	239,175	112	13.6%	$1.65
2018 Q4	1,757,635	1,569,277	50,929	187,458	900	10.7%	$1.60
2019 Q4	1,757,635	1,500,796	(68,481)	145,200	111,639	14.6%	$1.67
2020 Q4	1,757,635	1,460,059	(40,737)	180,195	117,381	16.9%	$1.90
2021 Q4	1,757,635	1,456,538	(3,521)	277,284	23,813	17.1%	$1.94
Total Inventory Increase		**18,260**					
Total Net Absorption		**10,737**					

Source: London Moeder Advisors, CoStar

Office Supply & Average Asking Rent

City of Vista 2012 Q4 - 2021 Q4

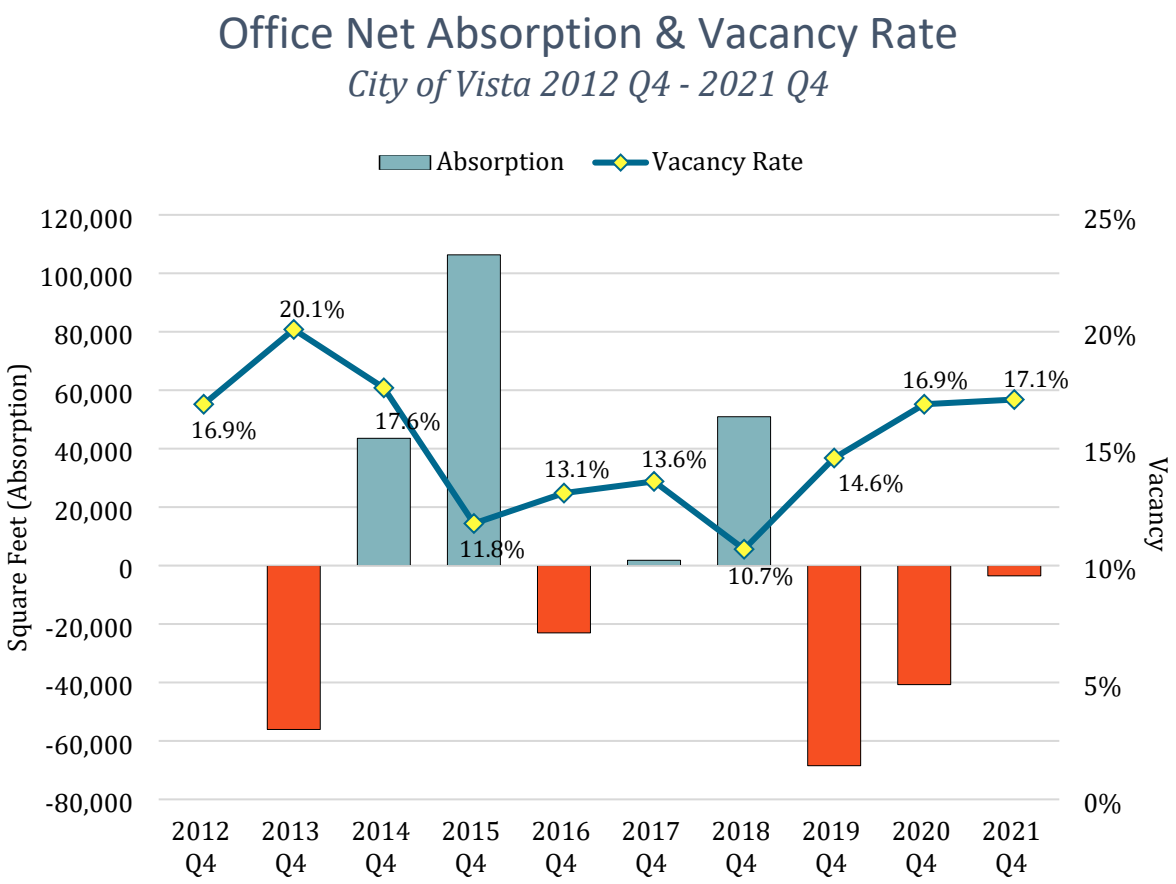


Source: London Moeder Advisors, Costar

Absorption and Vacancy

From 2012 to 2021, the total net absorption for office space in Vista was 10,737 square feet. Vista's office market recently experienced three consecutive years of negative net absorption of 112,739 square feet between 2019 and 2021.

Since 2012, the market has achieved an average annual net absorption of 1,193 square feet. This growth has resulted in the vacancy rate increasing from 16.9 percent in 2012 to 17.1 percent in 2021. Though office vacancy decreased steadily from 2013 to 2018, vacancy grew significantly from 2019 to 2021.



Source: Costar

2.4.4 Industrial Market

Historical Inventory

Table 2.14 and following chart detail the historical performance for industrial space in Vista. The total supply of industrial space is comprised of 14,213,358 square feet of rentable building area. Since 2012, there has been limited industrial growth with a net increase of 234,146 square feet, a 1.67 percent increase since 2012.

Since 2012, the average monthly asking rent has increased from $0.70 per square foot (2012) to $1.02 per square foot (2021), a 46.3 percent increase. Compared to Vista's retail and office rents, Vista's industrial rents experienced stronger growth between 2012 and 2021, a growth rate of 4.3 percent compounded annually.

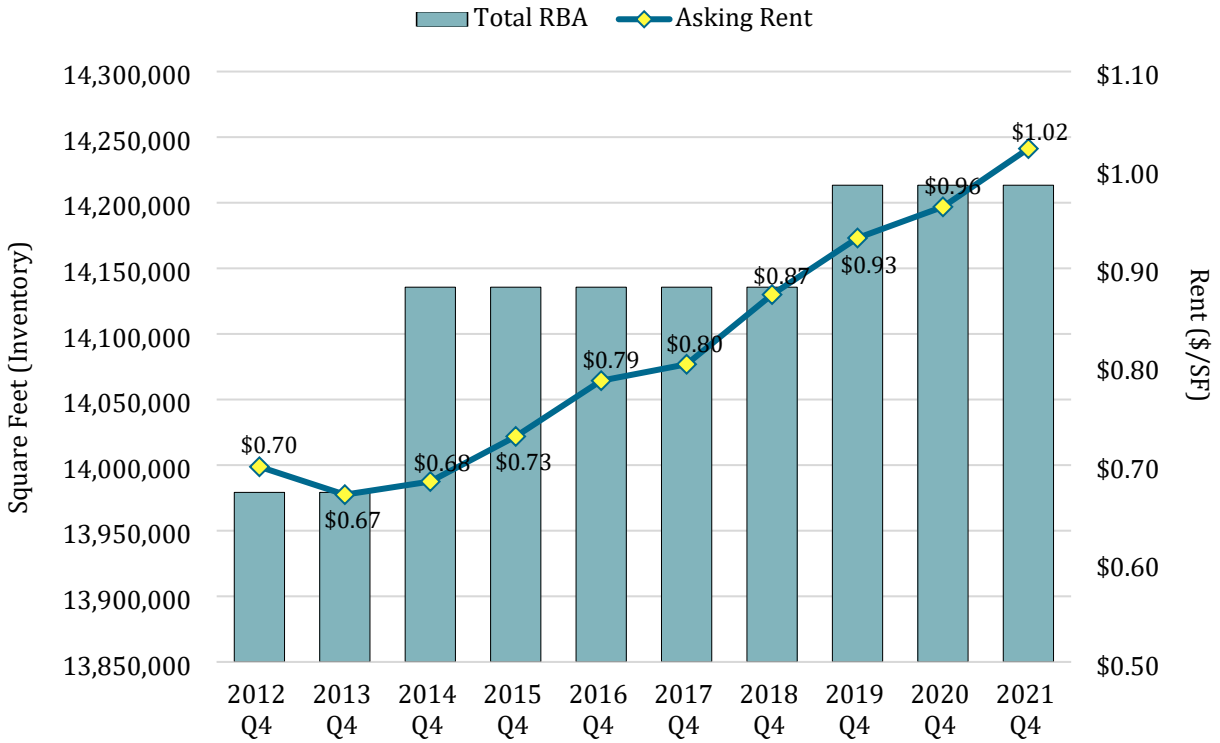
Table 2.14: Historical Industrial Market Conditions, City of Vista

Period	Total RBA	Occupied SF	Absorption	Direct Vacant SF	Sublet Vacant SF	Total Vacant %	Asking Rent
2012 Q4	13,979,212	13,081,949	-	887,085	10,178	6.4%	$0.70
2013 Q4	13,979,212	12,956,956	(124,993)	1,007,572	14,684	7.3%	$0.67
2014 Q4	14,135,633	13,395,282	438,326	676,886	63,465	5.2%	$0.68
2015 Q4	14,135,633	13,687,877	292,595	428,076	19,680	3.2%	$0.73
2016 Q4	14,135,633	13,628,919	(58,958)	479,755	26,959	3.6%	$0.79
2017 Q4	14,135,633	13,386,202	(242,717)	729,902	19,529	5.3%	$0.80
2018 Q4	14,135,633	13,545,685	159,483	523,494	66,454	4.2%	$0.87
2019 Q4	14,213,358	12,985,870	(559,815)	1,010,247	217,241	8.6%	$0.93
2020 Q4	14,213,358	12,956,105	(29,765)	1,168,825	88,428	8.8%	$0.96
2021 Q4	14,213,358	13,306,526	350,421	725,332	181,500	6.4%	$1.02
Total Inventory Increase		**234,146**					
Total Net Absorption		**224,577**					

Source: London Moeder Advisors, CoStar

Industrial Supply & Average Asking Rent

City of Vista 2012 Q4 - 2021 Q4



Source: London Moeder Advisors, Costar

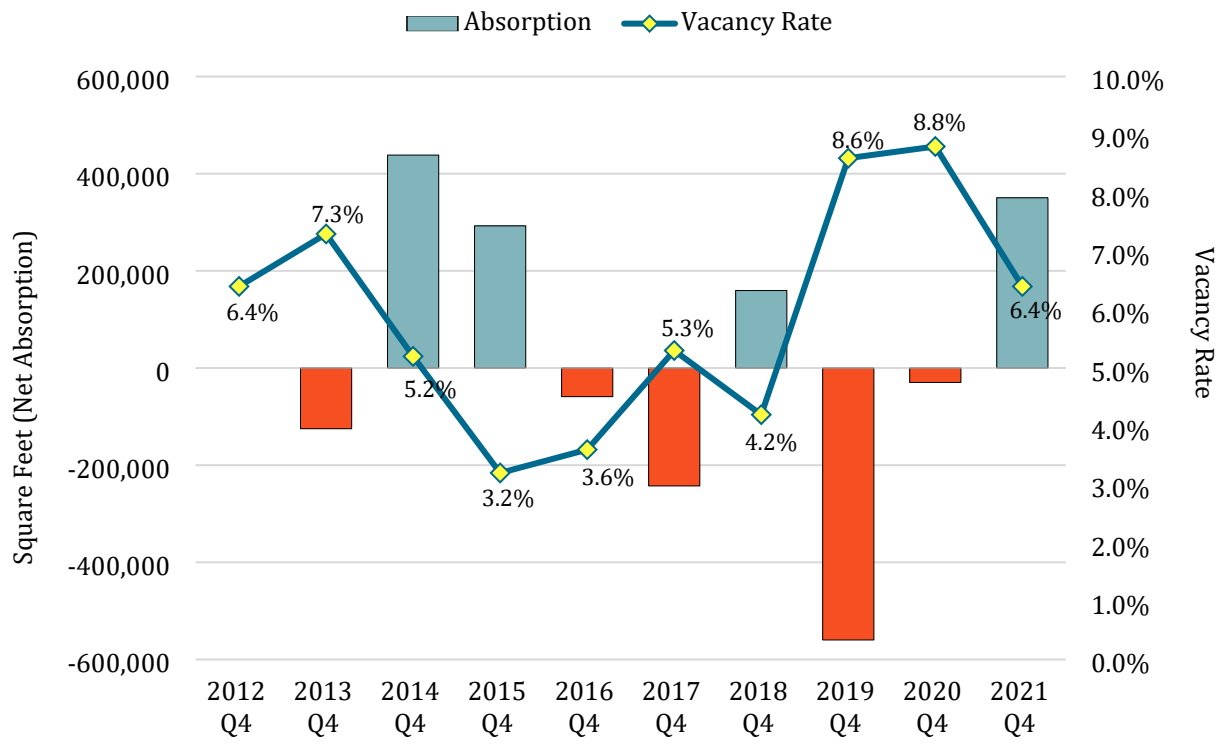
Absorption & Vacancy

From 2012 to 2021, the total net absorption for office space in Vista was 224,577 square feet. Since 2012, the market has achieved an average annual net absorption of 24,953 square feet. However, Vista's industrial market has been volatile. Annual absorption has been inconsistent, often fluctuating between years of positive leasing activity followed by consecutive years of negative absorption.

This market volatility is also reflected in the industrial market's vacancy rate. Though Vista's 2021 industrial vacancy rate was the same in 2012, the industrial market has experienced fluctuations in vacancy during the last ten years. Vacancy ranged from 3.2 percent (2015) to as high as 8.8 percent (2020).

Industrial Net Absorption & Vacancy Rate

City of Vista 2012 Q4 - 2021 Q4



Source: London Moeder Advisors, Costar

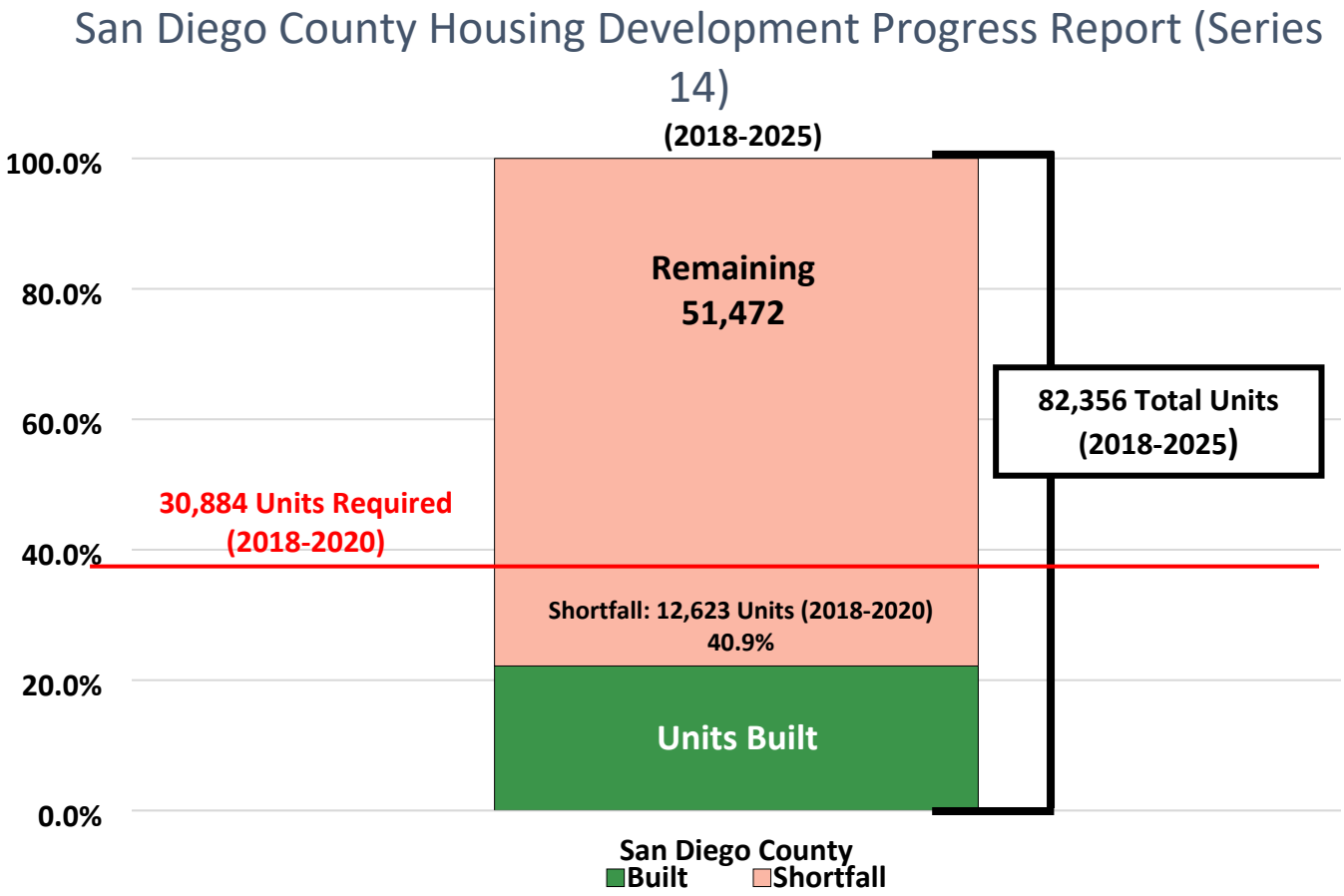
2.5 Demand Analysis

2.5.1 Forecasted Housing Growth

The focus of this section is to reconcile the forecasted population growth patterns with forecasted housing growth to determine the amount and types of housing that should be targeted in planning policy for the City of Vista.

Background: San Diego County Housing Shortage

According to SANDAG's updated Series 14, a total of 82,356 units are forecasted to be developed in the County between 2018 and 2025. By 2020, the region required 30,884 units; however, only 18,261 units were built. As the following chart demonstrates, this translates to a shortfall of 40.9 percent, or 12,623 total units and represents an average annual shortfall of 6,311 units.[1]



Source: SANDAG

[1] San Diego County also fell short in the previous forecast between 2012 and 2020, building only 63 percent of the housing needed (shortage of 31,450 units).

Forecasted Household Demographics (Vista)

The growth in the child population must be accounted for within adult households. To provide a recommended distribution of housing types to be envisioned in the City of Vista, the following assumptions were made in the allocation of child population growth:

- Five percent of children housed in the young adults age group (aged 20 to 29)
- 75 percent of children housed in the young families age group (aged 30 to 59)
- 20 percent of children housed in the older families age group (aged 50 to 69)

Based on these key assumptions and the forecasted population growth trends, young adults and senior citizens are forecasted to drive the largest demand for housing in Vista, accounting for 52 percent and 103.9 percent of forecasted population growth. **Table 2.15** details the housing demand distribution based on types of households.

Table 2.15: Population Growth Distribution (2020-2040), City of Vista

	Child Allocation	Child Allocation	Total Population	Household Growth
Age Groups	**%**	**#**	**Growth**	**Distribution**
20 to 29	5%	-226	3,193	52.0%
30 to 49	75%	-3396	(1,647)	-26.8%
50 to 69	20%	-906	(1,785)	-29.1%
70 to 80+	0%	0	6,374	103.9%
Total		**(4,528)**	**6,135**	

Child Population Growth (0 to 19)	(4,528)

Source: LMA, SANDAG Series 14 Forecast

Forecasted Housing Unit Growth (Vista)

To address the region's housing shortage and affordability goals, housing growth capacity was analyzed as forecasted by SANDAG. According to existing land use plans, SANDAG forecasts an additional 4,465 housing units to be built in the City of Vista by 2040. **Table 2.16** details the existing housing growth forecast and potential increase to housing growth capacity.

Table 2.16: Housing Growth (Forecasted 2020 Est. – 2040), City of Vista and County of San Diego

	2020 Est.	2025	2030	2035	2040	Housing Units Added 2020 Est. to 2040
County of SD Housing Units	1,216,039	1,288,207	1,351,353	1,409,853	1,443,621	**227,582**
Vista Forecasted Housing Units	32,500	34,305	35,259	36,431	36,965	**4,465**
Housing Units Added		1,805	954	1,172	534	
Cumulative Housing Units Added		1,805	2,759	3,931	4,465	
% Capture	2.67%	2.66%	2.61%	2.58%	2.56%	

Existing Vista Housing Growth	**4,465**

Source: SANDAG Series 14 Forecast

The concentration of future population growth, and the characteristics of this growth, requires housing prototypes consisting of dense multifamily housing including a mix of larger, two and three bedroom units, targeting young adults, families, and senior citizens. As part of the mix to accommodate recently formed young families and provide housing for the other population cohorts, the construction of two to three story townhomes and rowhomes should be incentivized and encouraged. They would create more unit density, yet not fundamentally alter the existing development pattern and character of most of Vista's neighborhoods.

The distribution of household types by age was applied to the total forecasted housing units in the area to recommend a mix of targeted housing development as shown in **Table 2.17.**

Table 2.17: Household Demand Distribution (2020 Est. – 2040), City of Vista

	Household Growth	Household
Age Groups	**Distribution**	**Unit Mix**
20 to 29	52.0%	2,324
30 to 49	-26.8%	(1,199)
50 to 69	-29.1%	(1,299)
70 to 80+	103.9%	4,639
Total		**4,465**

Source: SANDAG Series 14 Forecast

2.5.2 Retail Space Forecast: Vista

The purpose of this section is to detail the demand forecast for retail space in the City of Vista.

Approach to Analysis

Retail demand and market support is generated by local residents, who generate the majority of expenditures captured by nearby retail establishments. The 2022 estimated population within Vista is 103,249 persons living in 32,003 households (3.2 persons per household).[2] The following list and **Table 2.18** summarize the key characteristics of Vista's population compared to that of the County of San Diego:

- **Education:** Countywide, 40 percent of the County's population hold either a bachelor or more advanced degree. In Vista, the percentage is 25 percent.
- **Median Household Income:** In the County of San Diego, the median household income is $93,153 compared to $86,273 in Vista.
- **Average Household Income:** In the County of San Diego, the average household income is $129,631 compared to $109,934 in Vista.
- **Ownership Tenure:** In the County of San Diego, owner-occupied homes account for 54 percent of the households. In Vista, 53 percent are owner-occupied.
- **Home Prices:** The Countywide median price of a single-family home is $717,279. In Vista, the median price is $624,968.

[2] Claritas is an industry leader in providing demographic data.

Table 2.18: Demographic Overview Summary, City of Vista

	Vista	County of San Diego	Vista as % of County of San Diego
Education - Bachelor's Degree or Higher	25%	40%	-
Median Household Income	$86,273	$93,153	93%
Average Household Income	$109,934	$129,631	85%
Owner-Occupied Households	53%	54%	-
Median Price - Owner-Occupied Housing Unit	$624,968	$717,279	87%

Source: London Moeder Advisors, Claritas (2022)

An estimated 77.7 percent of household income is spent on consumer expenditures.[3] While total consumer expenditures account for 77.7 percent of total household income, the relevant categories for this analysis account for 26.6 percent of total household income. These categories were chosen because they best reflect the types of non-regional retail space more characteristic of the tenants likely to occupy space in Vista.

The largest category is food stores, accounting for 9.2 percent of household income. This includes food purchased from grocery stores as well as restaurants and food stands. The second largest category is entertainment, which accounts for 4.9 percent of household income. This includes income used to purchase fees and admissions, television and sound equipment, pets and toys and other entertainment equipment and services. See Appendix A: City of Vista General Plan Update Market Analysis for a table that further defines each category.

Based on factors such as traffic patterns, place of employment, specialization, and convenience, individuals within Vista may choose to shop outside of the community. The analysis assumed that Vista will capture a range of 10 percent to 20 percent of retail expenditures generated by the local population within the primary market area. It is probable that the estimated retail demand will be higher based on increased demand from consumers within the secondary and tertiary market areas. The required sales volume to support retail in Vista is estimated to range from $400 to $500 per square foot.[4]

Increased Retail Demand

Table 2.19 details the household income and retail expenditures generated by the growth in Vista population as forecasted by SANDAG. Existing housing growth forecasts anticipate that Vista will add 4,465 housing units by 2040. The average household income is estimated to be $109,934, resulting in a total household

[3] United States Bureau of Labor Statistics ("BLS"), 2021 Consumer Expenditures Survey (San Diego MSA)
[4] This estimated sales volume per square foot is based on how community oriented commercial retail centers have historically performed in a developed retail market.

income growth of approximately $490.9 million by 2040. This translates into total consumer expenditures of approximately $381.1 million annually generated by the estimated growth in households.

Table 2.19: Forecasted Household Expenditure Growth, City of Vista

Forecasted Household Expenditure Growth	2040
Households	4,465
Average Household Income[1]	$109,934
Total Household Income	**$490,855,310**
% Income Spent on Consumer Expenditures	77.65%
Total Consumer Expenditures	**$381,126,182**

Source: London Moeder Advisors, SANDAG, Claritas (2022), BLS (Consumer Expenditures Survey, 2021)
[1]2022 dollars

Table 2.20 delineates the Vista population consumer expenditures by category. The total retail expenditures available for capture is estimated to be $122.7 million annually.

Table 2.20: Retail Expenditure Potentials by Category, City of Vista

Retail Category	% of Household Income	Retail Expenditures	Less Online	Online Sales	2022 Dollars
Food Stores[1]	9.2%	$45,315,067	0.5%	($226,575)	$45,088,492
Alcoholic Beverages[1]	1.0%	$4,997,828	0.5%	($24,989)	$4,972,838
Home Furnishings & Supplies	4.2%	$20,823,567	10.7%	($2,217,710)	$18,605,857
Apparel and Services	2.8%	$13,779,418	10.7%	($1,467,508)	$12,311,910
Auto Expenses (Gas, Oil, etc.)[1]	2.1%	$10,257,344	2.9%	($297,463)	$9,959,881
Entertainment	4.9%	$24,058,212	10.7%	($2,562,200)	$21,496,013
Miscellaneous Other Expenses	2.3%	$11,484,279	10.7%	($1,223,076)	$10,261,203
Total Big-box, Neighborhood and Community Targeted Expenditures	**26.6%**				**$122,696,194**

Source: London Moeder Advisors, BLS (Consumer Expenditures Survey - San Diego MSA), U.S. Federal Reserve Bank of St. Louis (E-Commerce Retail Sales)

[1]Based on 2017 Annual Retail Trade Survey (E-Commerce Sales)

Assuming an expenditure capture rate of 10 percent to 20 percent, the total available expenditures for retail support in the Vista is estimated to be $12.3 million to $24.5 million annually. Based on the required retail sales volume of $400 to $500 per square foot, the total supportable retail space ranges from 24,539 to 61,348 square feet. See **Table 2.21** below.

Table 2.21: Retail Demand Capture, City of Vista

Total Big-box, Neighborhood and Community Targeted Expenditures	**$122,696,194**			
	10%		**20%**	
Locally Captured Retail Expenditures	$12,269,619		$24,539,239	
Sales Volume (PSF)	**Low** $500	**High** $400	**Low** $500	**High** $400
Estimated Supportable Retail	**24,539 SF**	**30,674 SF**	**49,078 SF**	**61,348 SF**
per household	5.5	6.9	11.0	13.7

Source: London Moeder Advisors

Retail Demand Summary

The purpose of this section is to summarize the total retail expenditures generated by the forecasted growth in households, which dictates the supportable retail space growth in Vista from 2020 to 2040.

Per SANDAG's forecasted growth of households and assuming a 10 percent capture rate of total available retail spending, total local retail expenditures are estimated to be $12.3 million annually. This represents additional retail support for 24,539 to 30,674 square feet of space in Vista. When compared to the anticipated growth in housing (4,465 units), this represents 5.5 to 6.9 square feet of retail space per additional household.

Assuming a 20 percent capture rate of total available retail expenditures from the new households, total expenditures for local retail support are estimated to be $24.5 million. This represents retail support for 49,078 to 61,348 square feet in Vista. When compared to the anticipated growth in housing, this represents 11 to 13.7 square feet of retail space per additional household.

2.5.3 Office Space Forecast: Vista

San Diego County Historical Employment Growth

The demand for office space in San Diego County is determined by employment growth. As shown in **Table 2.22** below, San Diego County has experienced expansive job growth since 1991, adding an average of 18,448 jobs annually. The total job increase of the past 30 years is 461,200. This 47.2 percent employment increase is significant considering the 30-year period includes three recessions (the early 1990s recession, the 2008 financial crisis, and 2020 COVID-19 recession).

Table 2.22: San Diego County Historical Employment (Total Non-Farm 1991-2021)

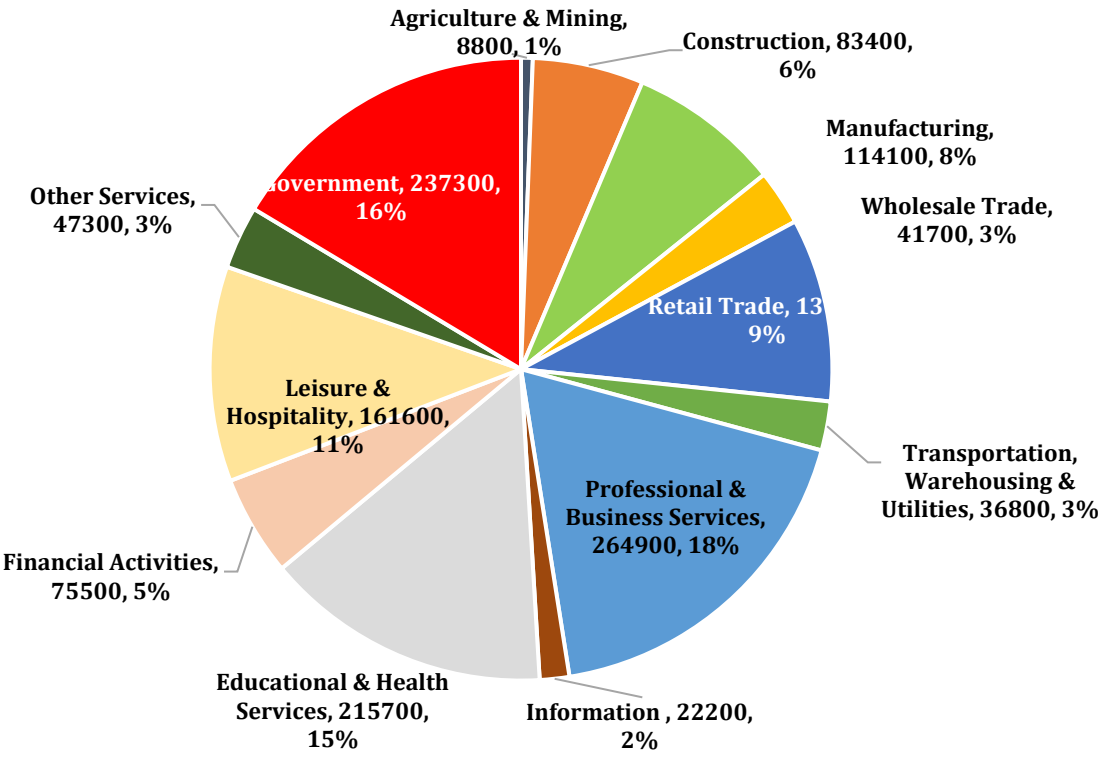
		Total		Annual Avg.	
Year	**Employment**	**Change**	**% Change**	**Change**	**% Change**
1991	977,300				
1996	1,015,700	38,400	3.9%	7,680	0.8%
2001	1,224,800	209,100	20.6%	41,820	4.1%
2006	1,313,800	89,000	7.3%	17,800	1.5%
2011	1,250,300	-63,500	-4.8%	-12,700	-1.0%
2016	1,422,600	172,300	13.8%	34,460	2.8%
2021	1,438,500	15,900	1.1%	3,180	0.2%
Total		**461,200**	**47.2%**	**18,448**	**1.9%**

Source: London Moeder Advisors, California EDD

In addition to sustaining strong growth, San Diego County has maintained a diversified employment base. The following chart depicts the employment distribution of the various job sectors in San Diego County.

There are 13 major sectors that comprise San Diego County's employment base. As the chart demonstrates, there is no single industry that comprises a majority of the employment base. This is beneficial to the County because a diversified and balanced employment base represents a strong and stable economy due to its ability to weather declines in any single sector. The largest industries in the County are Professional & Business Services and Government, accounting for 18 percent and 16 percent, respectively, of the County's 2021 employment base. These are also the industries that require the greatest amount of office space for their employees.

San Diego County Employment Base
Distribution by Major Sector (2021)



Source: London Moeder Advisors, Costar

San Diego County Forecasted Employment Growth

Table 2.23 details the forecasted employment growth for San Diego County through 2040, as forecasted by SANDAG. Over the next 18 years, total employment is forecasted to increase by 30.5 percent (1.6 percent annually). A total of 440,963 jobs is estimated to be added, bringing the total employment base in San Diego County to approximately 1.9 million.

Table 2.23: San Diego County Employment Growth (Forecasted 2021-2040)

		Total		Annual Avg.	
Year	**Employment**	**Change**	**% Change**	**Change**	**% Change**
2021	1,443,800				
2025	1,674,520	230,720	16.0%	57,680	4.0%
2030	1,754,863	80,343	4.8%	16,069	1.0%
2035	1,821,115	66,252	3.8%	13,250	0.8%
2040	1,884,763	63,648	3.5%	12,730	0.7%
Total		**440,963**	**30.5%**	**23,209**	**1.6%**

Source: London Moeder Advisors, SANDAG

Office Demand Forecast

To estimate future office space demand, the analysis utilized SANDAG's job growth forecast which disaggregates growth by 14 employment categories. However, not all of San Diego County's employees require or utilize office space. To account for this, a percentage was applied to each employment category representing those employees who require or utilize office space. For example, it is estimate that 75 percent of the employees who work in the Finance and Real Estate industry require office space.

The average office space per employee is estimated to be approximately 200 to 220 square feet. However, this figure is trending downward, and newer leases range from 160 to 190 square foot per employees. In the analysis, 185 square feet per employee was utilized. The number of square feet required by each employee was multiplied by the change in office employment to forecast the county-wide incremental office space demand.

Between 2020 and 2025 San Diego County will require approximately 660,358 square feet of office annually. From 2025 to 2040, it is estimated that an average annual office demand to range from 769,924 square feet to 888,827 square feet. **Table 2.24** details the forecast.

Table 2.24: San Diego County Employment Growth and Office Space Demand (2020-2040)

County of San Diego Office Employment Projections		2020	2025	2030	2035	2040
Total Civilian Employment		1,609,191	1,674,520	1,754,863	1,821,115	1,884,763
Employment Categories	% of Office Space Users					
Agriculture and Mining	1%	9,617	9,907	10,380	10,851	11,254
Construction	2%	86,628	89,608	94,276	98,952	103,036
Education and Healthcare	20%	365,323	386,721	397,892	407,108	420,442
Finance and Real Estate	75%	89,399	92,127	96,562	100,974	104,752
Government	70%	81,057	83,437	87,347	91,230	94,532
Information Systems	35%	27,153	27,967	29,299	30,621	31,749
Leisure and Hospitality	5%	221,578	234,376	246,826	256,292	263,729
Manufacturing	5%	112,861	116,046	121,359	126,618	131,061
Office Services	75%	71,476	73,629	77,143	80,634	83,618
Professional and Business Services	75%	271,097	279,783	293,686	307,557	319,531
Retail Trade	5%	161,821	166,421	180,121	184,759	191,103
Self-Employed	20%	17,404	18,341	19,329	20,254	20,726
Transportation, Warehousing, and Utilities	10%	45,525	46,399	48,455	50,658	52,542
Wholesale Trade	5%	48,252	49,758	52,188	54,607	56,688
Total Office Employment		**500,375**	**518,222**	**542,245**	**565,192**	**586,000**
Office Employment as % of Total		31%	31%	31%	31%	31%
SD County Office Space Demand						
Change in County Office Employment			17,848	24,022	22,947	20,809
Office Space Demand per Employee (S.F.)		185	185	185	185	185
County Incremental Office Space Demand (S.F.)			3,301,788	4,444,133	4,245,219	3,849,621
Average Annual Office Space Demand						
2020-2025			660,358			
2025-2030				888,827		
2030-2035					849,044	
2035-2040						769,924

Source: London Moeder Advisors, SANDAG

Vista Office Demand Capture

Since 2020, Vista's share of the county's office inventory has been approximately 1.5 percent. Between 2020 and 2040, it is estimated that Vista's annual office capture to range from 9,849 square feet to 13,256 square feet. Assuming Vista maintains its fair-share market capture, total office space required between 2020 and 2040 is estimated to be 236,250 square feet. **Table 2.25** highlights Vista's office demand capture.

Table 2.25: Annual Office Demand Capture (2020-2040), City of Vista

	2020-2025	2025-2030	2030-2035	2035-2040
County Wide Demand				
County Incremental Office Space Demand (S.F.)	3,301,788	4,444,133	4,245,219	3,849,621
Average Annual Office Space Demand (SD County)	660,358	888,827	849,044	769,924
Vista Demand Capture - 1.5%[1]				
Vista's Office Space Capture Rate	1.5%	1.5%	1.5%	1.5%
Vista's Office Space Estimated Annual Capture	**9,849**	**13,256**	**12,663**	**11,483**
Vista's Office Space Total Capture	**49,243**	**66,280**	**63,313**	**57,413**

[1]Capture rate represents Vista's total office supply as a proportion of SD County's total office supply

City of Vista Total Office Demand Capture		2020-2040
Total County Incremental Industrial Space Demand (S.F.)		15,840,760
Vista's Industrial Space Capture (S.F.)	**1.5%**	**236,250**

Source: Costar

2.5.4 Industrial Space Forecast: Vista

To estimate future industrial space demand, SANDAG's job growth forecast was utilized. The analysis applied a percentage to each of the 14 employment categories representing those employees who require or utilize industrial space. For example, it is estimated that 95 percent of the employees who work in the manufacturing sector require industrial space. By applying these percentages, it provides an estimate of the total industrial employment in San Diego County.

The average square feet per employee is represented by the total occupied industrial square footage in 2020 divided by the number of industrial employees in 2020. This resulted in approximately 560 square feet of industrial space per employee. The number of square feet required by each employee was then multiplied by the change in industrial employment and forecasted the county-wide incremental industrial space demand.

Per the analysis, between 2020 and 2025, San Diego County will require approximately 762,492 square feet of industrial space annually. From 2025 to 2040, it is estimated that the average annual industrial demand to range from 1.13 million to 1.35 million square feet. **Table 2.26** details the forecast.

Table 2.26: San Diego County Employment Growth and Industrial Space Demand (2020-2040)

County of San Diego Industrial Employment Projections		2020	2025	2030	2035	2040
Total Civilian Employment		1,609,191	1,674,520	1,754,863	1,821,115	1,884,763
Employment Categories	% of Industrial Space Users					
Agriculture and Mining	1%	9,617	9,907	10,380	10,851	11,254
Construction	10%	86,628	89,608	94,276	98,952	103,036
Education and Healthcare	0%	365,323	386,721	397,892	407,108	420,442
Finance and Real Estate	5%	89,399	92,127	96,562	100,974	104,752
Government	20%	81,057	83,437	87,347	91,230	94,532
Information Systems	30%	27,153	27,967	29,299	30,621	31,749
Leisure and Hospitality	0%	221,578	234,376	246,826	256,292	263,729
Manufacturing	95%	112,861	116,046	121,359	126,618	131,061
Office Services	0%	71,476	73,629	77,143	80,634	83,618
Professional and Business Services	1%	271,097	279,783	293,686	307,557	319,531
Retail Trade	5%	161,821	166,421	180,121	184,759	191,103
Self-Employed	5%	17,404	18,341	19,329	20,254	20,726
Transportation, Warehousing, and Utilities	95%	45,525	46,399	48,455	50,658	52,542
Wholesale Trade	95%	48,252	49,758	52,188	54,607	56,688
Total Industrial Employment		**245,565**	**252,373**	**264,430**	**276,100**	**286,148**
Industrial Employment as % of Total		15%	15%	15%	15%	15%
SD County Industrial Space Demand						
Change in County Industrial Employment			6,808	12,057	11,670	10,048
Industrial Space Demand per Employee (S.F.)1		560	560	560	560	560
County Incremental Industrial Space Demand (S.F.)			3,812,458	6,752,122	6,535,155	5,627,031

Average Annual Industrial Space Demand						
2020-2025			762,492			
2025-2030				1,350,424		
2030-2035					1,307,031	
2035-2040						1,125,406

Source: London Moeder Advisors, SANDAG

City of Vista Industrial Demand Capture

Since 2020, Vista's share of the county's industrial inventory has been approximately 9.7 percent. Between 2025 and 2040, it is estimated that Vista's annual industrial absorption to range from 109,656 to 131,581 square feet. Assuming Vista maintains its fair-share market capture, total industrial space required between 2020 and 2040 is estimated to be approximately 2.2 million square feet. **Table 2.27** highlights Vista's industrial demand capture.

Table 2.27: Annual Industrial Demand Capture (2020-2040), City of Vista

	2020-2025	2025-2030	2030-2035	2035-2040
County Wide Demand				
County Incremental Industrial Space Demand (S.F.)	3,812,458	6,752,122	6,535,155	5,627,031
Average Annual Industrial Space Demand (SD County)	762,492	1,350,424	1,307,031	1,125,406
City of Vista Industrial Demand Capture - 9.7%[1]				
Vista's Industrial Space Capture Rate	9.7%	9.7%	9.7%	9.7%
Vista's Industrial Space Estimated Annual Capture	**74,295**	**131,581**	**127,353**	**109,656**
Vista's Industrial Space Total Capture	**371,473**	**657,905**	**636,764**	**548,280**

[1]Cature rate represents Vista's total industrial supply as a proportion of SD County's total industrial supply

City of Vista Total Industrial Demand Capture		2020-2040
Total County Incremental Industrial Space Demand (S.F.)		22,726,766
Vista's Industrial Space Capture (S.F.)	**9.7%**	**2,214,422**

Source: Costar

2.6 Reconciliation of Supply and Demand

2.6.1 Residential

The demand for housing is driven primarily by anticipated population growth as well as cumulative shortfalls in housing production. As discussed above, San Diego County has only achieved 22.2 percent of the housing development that was forecasted up until 2020. This translates to a 15.3 percent shortfall compared to the number of forecasted units that were anticipated to be built within the same time period. This represents pent up demand for housing that has strained the availability and decreased the affordability of existing housing.

Per the supply analysis in this report, there are currently 1,764 market-rate apartment units in the City of Vista. Based on the demand analysis, under current policy conditions, SANDAG forecasts that Vista will need to add 4,465 units by 2040 in order to meet housing demand.

2.6.2 Retail

Based on the supply analysis above, the total supply of retail space is comprised of 5,183,708 square feet of rentable building area. Demand for commercial land uses will be primarily driven by the growth in population and households. As discussed in the Retail Space Forecast above, the demand analysis for retail space in Vista is based on the anticipated household expenditures dedicated to the corresponding retail categories.

Based on the forecasted growth of housing demand, the analysis shows that 24,539 to 30,674 square feet of retail can be supported by the market, assuming local retail captures 10 percent of the community's total retail expenditures. If the capture rate is 20 percent, the analysis shows that 49,078 to 61,348 square feet of retail can be supported.

2.6.3 Office

Based on the supply analysis above, the total supply of office space is comprised of 1,757,635 square feet of rentable building area. Demand for office space is principally driven by growth in jobs. Using SANDAG's projections for job growth in major employment categories, the analysis shows that Vista's total office demand capture between 2020 and 2040 is approximately 236,250 square feet.

2.6.4 Industrial

Based on the supply analysis above, the total supply of industrial space is comprised of 14,213,358 square feet of rentable building area. The analysis has determined that Vista's portion of the total additional industrial space required between 2020 and 2040 in order to meet the overall County of San Diego industrial demand will be approximately 2.2 million square feet.

2.7 Key Terms

Labor Force: All persons classified in the civilian labor force plus members of the U.S. Armed Forces (persons on active duty with the U.S. Army, Air Force, Navy, Marine Corps, or Coast Guard).

Low-Income Area: An area with household incomes at or below 80 percent of the statewide median income.

Multifamily: A building containing two or more individual dwelling units with separate cooking and toilet facilities for each dwelling.

Vacancy Rate: The vacancy rate is the number of vacant housing units divided by the total number of housing units for a given year or period.

2.8 References

San Diego Association of Governments (SANDAG), Data Surfer, Series 14 Forecast

U.S. Census Bureau, American Community Survey (5-year Estimate)

London Moeder Advisors, Claritas

United States Bureau of Labor Statistics ("BLS"), 2021 Consumer Expenditures Survey

California Employment Development Department (EDD)

Costar

3.0 LAND USE AND COMMUNITY CHARACTER

The Land Use and Community Characteristics chapter describes the current land uses, densities and intensities, urban form and development patterns, as well as other defining community characteristics that are present within Vista. It is a "snapshot" of the community across the many attributes that together create its culture and character - from the built environment to the community identity. It identifies and assesses what elements of the City contribute to its uniqueness and role within the region. Through that assessment, opportunities and challenges have been identified in relation to achieving the long-term vision of Vista.

3.1 Introduction

It is important to evaluate the community character because the Land Use and Community Identity Element of the General Plan is the most visible and referenced element in the Plan. All other topics in this Existing Conditions Report relate to and correspond in some way to the Land Use and Community Identity. An understanding of how the current community character and design influences the quality of life of residents and the factors contributing or detracting from it, will inform decisions about how the City of Vista develops in the future.

The City of Vista has been experiencing transformational growth and development which will ultimately redefine the community. Recent investments and the City's numerous planning efforts have spurred important changes and developed forward momentum. The City is shifting and evolving from a traditional distributed pattern of development to a concentrated growth plan as it focuses growth towards the established downtown area and transportation corridors and repurposes underutilized land uses.

3.1.1 Findings

- Vista is mostly developed; however, priority has been placed on protecting the rural and 'organic' character, particularly in the northern and eastern neighborhoods.
- The current physical characteristics of the City of Vista are comprised of an eclectic mix of topography and vegetation, urban and developed areas with pockets of natural vegetation occurring within areas of open space.
- Vista is diverse in its demographics, culture, development patterns, and geographic areas. There is a significant opportunity for the City to provide systems that will create greater equality in access and opportunity whether it be to housing, jobs, mobility, health, or services.
- The City of Vista is rich with arts, particularly sculptures, murals, and other community pieces, many of which celebrate the history of Vista. There are

many places for local artists, particularly in the Downtown area which should be preserved.

- The open space and creeks that intertwine into the city's urban fabric are valuable community resources that should be enhanced and access to them should be increase in order to expand recreational resources, increase community health, and protect the natural environment. There is an opportunity to complete the master plan for Buena Vista Creek to support this effort.
- Two major transportation routes run through Vista; State Route78 (SR-78) and the SPRINTER connect the community from Oceanside to Escondido. These corridors present an opportunity for higher density and smart growth. There are also three main north/south corridors (Melrose Drive, N Santa Fe Avenue and E Vista Way) that provide regional cut-through and connect SR-78 to SR-76.
- The City has many commercial corridors – both freeway-fronting corridors with regional visibility, and neighborhood commercial corridors supporting services and daily needs of the community. Both types of corridors are currently underutilized and underperforming on the potential they offer the City. Vista will need to look at going the next level to leverage the opportunities for reinvestment and reuse and to densify along transportation corridors even beyond the level of development that's already occurred. The City has the opportunity to add density, intensity, and flexibility both in design and use to eliminate barriers to development.
- There are areas of the City beyond the commercial corridors that could be leveraged and repositioned to facilitate growth such as the Industrial Park and commercial centers. Outdated land uses and standards do not reflect market conditions or provide enough flexibility to attract new employment or residential uses.

3.1.2 Natural Setting and Scenic Resources

The City of Vista is located in the western foothills of the San Marcos Mountains and is fortunate to include a number of natural and scenic resources that contribute to its unique suburban, semi-rural character and enhance its status as a desirable place to live and work. Vista is unique in the sense that it has an emerging vibrant downtown surrounded by well-established suburban neighborhoods yet portions of the City, particularly east and north, have retained their organic, semi-rural character.

Natural Setting

Vista is largely developed and "built out" but retains much of its semi-rural character through less dense development on the outskirts of the City. The landscape is defined by varying topography, ranging from the lowland creek beds along the

Buena Vista Creek and the Auga Hedionda Creek to the San Marcos Mountain peaks sitting at around 1,200 feet above mean sea level (ASML), particularly visible from the eastern portion of the City. Additionally, there are scattered agricultural operations throughout the City that contribute to the semi-rural character.

The Buena Vista Creek and Auga Hedionda Creek are defining elements in the character of the community. The Buena Vista Creek runs through the heart of Vista, passing through numerous city destinations and presents a key opportunity to build upon and enhance existing resources as well as connect to other parts of the community to create a unique resource for the City. The vision for the creek is to connect a series of parks, neighborhoods, and commercial areas with a system of trails along and adjacent to the creek.

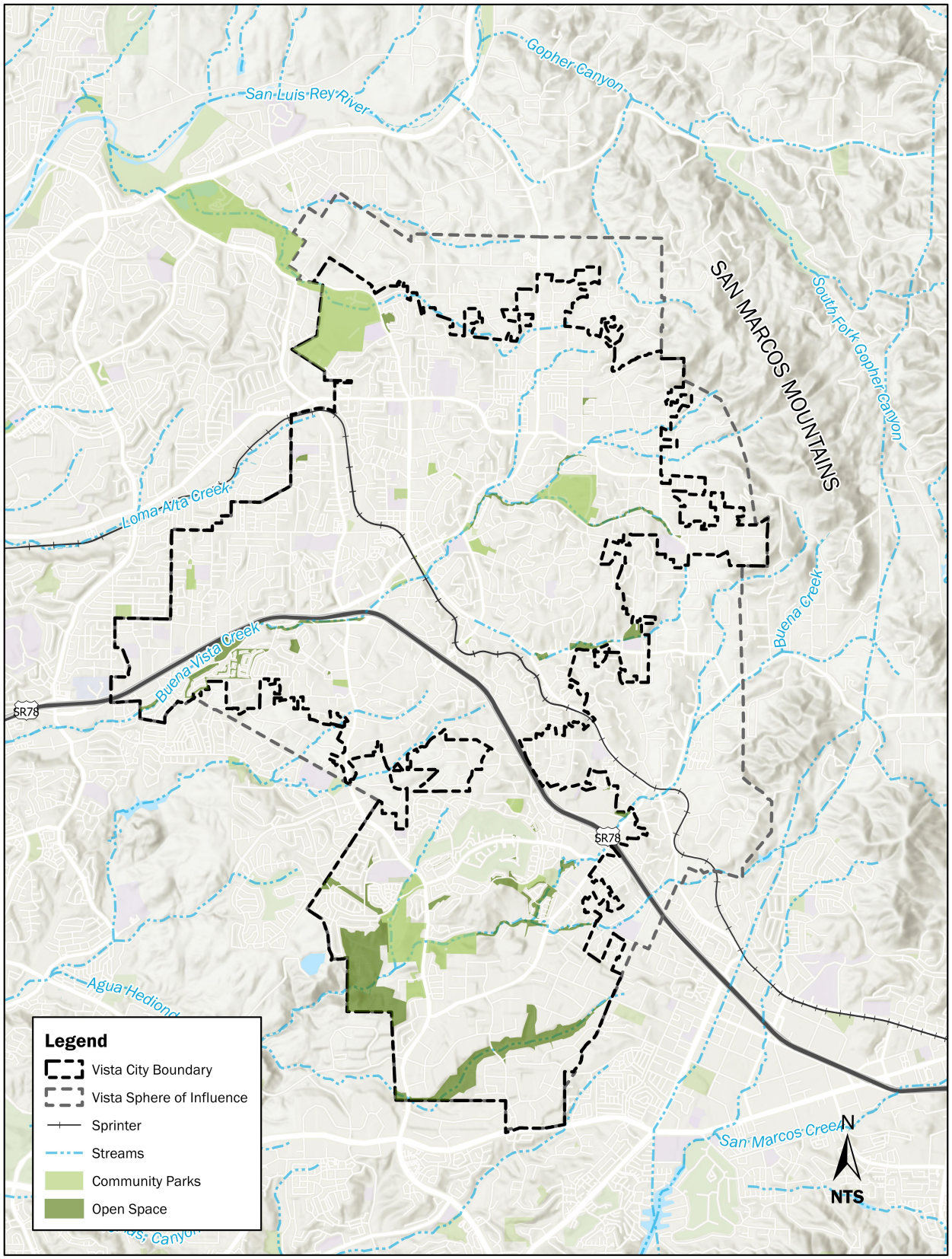
Natural Open Space

Open Space areas are an integral part of the overall land use framework for Vista. These resources provide for community health and activity through recreational opportunities, break up the urban footprint by providing scenic vistas, and contribute to the diversity of species. Open space areas in Vista are predominantly located along creek corridors, and between residential developments as buffers. Additionally, the San Marcos Mountains, within the City's sphere of influence to the east, provide further recreational and scenic resources for residents. Other major areas of open space include Dawson Los Monos Canyon Reserve, La Mirada Canyon and a portion of the Vista Parks Park that will remain undeveloped due to the presence of wetlands.

Scenic Resources

The City of Vista's topography is relatively flat limiting the presence of scenic resources. Located at the foothills of the San Marcos Mountains, elevations range from approximately 200 – 750 feet AMSL. As shown in **Figure 3.1** scenic views of the mountains are predominately enjoyed within the eastern parts of the City. There are no designated scenic highways within the City limits.

Figure 3.1: Scenic Resources



3.1.3 City Design (Centers/Residential Neighborhoods/ Employment Districts/Corridors and Gateways)

The City of Vista is located within two major watersheds in the region that cut diagonally from the San Marcos Mountains to the east down to the Pacific Ocean to the west. The Buena Vista Creek trespasses the center northern half of the City, establishing a valley along which flows the major east-west commercial corridor of the City (East and West Vista Way). Crisscrossing this corridor, North and South Santa Fe Avenue form a north-south commercial corridor that connects Vista to neighboring cities of San Marcos and Oceanside. At the confluence of these two corridors lies Downtown Vista, the core of the City and a major focal point and anchor of the City's urban culture and nightlife. These key organizing elements: the continuous commercial corridors that crisscross the City, the valleys they follow, the hills that face each side of them, and the confluence of them at a civic heart, give the City a distinct urban form. These elements are discussed in the following sections and illustrated in **Figure 3.2, Citywide Urban Form**.

Downtown Vista Core

The urban core of the City lies in Downtown at the intersection of Vista Village Drive and Santa Fe Avenue. Downtown Vista is linear in nature, spanning several blocks either side of Vista Village Drive and Santa Fe Avenue and includes a portion of the Buena Vista Creek, two SPRINTER stations, as well as several municipal uses such as the Vista Civic Center, library, Rancho Buena Vista Adobe, Wildwood Park, and the Civic Center Park. This area is characterized by a compact, grid network of streets and blocks that together make the area walkable and facilitate a mix of uses within close proximity to transit. Main Street is the hub of urban activity in the City, with restaurants, shops, and breweries lining the street in continuous storefronts that face the street and activate the street frontage. Additionally, Vista Village, an outdoor shopping mall, provides unique retail and restaurants for residents to enjoy. With a thriving artist community and intentional programming, Vista's Downtown has become a formidable outdoor gallery of sculptures and public art, which adorn parts of Main Street, North and South Santa Fe Avenue, and the surrounding areas of Downtown. The art and sculptures are a celebrated part of the urban fabric, telling the story of local history and contributing to the character of downtown. The Avo Theater, located on Main Street, is a popular venue for musical and performing arts and numerous galleries, lobbies, and exhibit spaces showcase local artists. Vista Magnet Middle School, formally Vista High School, serves local residents in the downtown area. The Paseo Santa Fe project, completed in 2021, reconstructed a mile of Paseo Santa Fe in the heart of the downtown core, creating a sense of place, and beautifying the corridor. This and other recent streetscape enhancements, such as curb extensions, landscaped planting areas, street trees, historic acorn lighting, and banners provide a pleasant environment and an attractive destination with a defined identity and "brand" and will help to drive other investment in the downtown area The core of a city is an important area, as it

defines an image of the city and contributes to a city's sense of identity and civic pride.

Downtown Vista is implemented through development investment according to the Downtown Vista Specific Plan. Vista's downtown is the key area for revitalization efforts. The proximity of downtown to SR-78 and existing SPRINTER stations makes this an important commercial connection for the City and gateway to the downtown core. Many of the City's major roadways, existing trails and bikeways, and bus routes converge in the downtown making it a key circulation connector to destinations within the City and the greater San Diego region.

Corridors

Corridors are important linear connections that link different parts of the community. Several key corridors traverse the City and establish primary circulation routes along which some of the City's more intense land uses follow. Commercial and Medium to High Density Residential uses are clustered along East and West Vista Way, North and South Santa Fe Avenue, North and South Melrose Drive, and Sycamore Avenue. Often the corridors follow valleys in the community and are straddled on both sides by hillsides made up primarily of single-family neighborhoods with commanding views. SR-78 itself is a corridor. It bisects the City, defining a northern half and southern half of the City. While commercial corridors such as Santa Fe Avenue and Vista Way attract and unite the City with a mix of uses, business and shopping destinations, SR-78 often acts as a barrier in the City, with few crossings from one side of the highway to the other. Corridors are important features of a City's urban form, as they help define the organizing layout of a City and its uses and create focal points of activity. Corridors in Vista provide this function in a clear and bold way. Some of the major corridors and their characteristics are discussed below.

Santa Fe Avenue

The Santa Fe Avenue corridor runs through the center of the City and connects Downtown Vista all the way north to SR-76. The corridor is a key arts and cultural connection, particularly in Downtown Vista, including a variety of sculptures. Portions of the corridor are within the Downtown Vista Specific Plan area, adjacent to the SPRINTER transit corridor which provides opportunities to support higher density, transit oriented, mixed-use development. As discussed above, the Paseo Santa Fe project reconstructed a mile of Paseo Santa Fe in the heart of the downtown core which included three street round abouts and new streetscape improvements along the corridor.

Vista Village Drive/East Vista Way

Similarly, to Santa Fe Avenue, Vista Village Drive is the other key corridor that runs through the center of the City. Vista Village Drive turns into East Vista Way northeast of the downtown core and connects Downtown Vista from SR-78 all the way north to

SR-76 as well as Gopher Canyon Road, which is a regional cut through to I-15. The corridor supports many of the downtown commercial uses as well connections to the majority of the civic uses in the City. Portions of the corridor are within the Downtown Vista Specific Plan area, providing opportunity for higher density, mixed-use development. As discussed above, there are also a number of aging commercial properties along the corridor that present opportunity for redevelopment and reinvestment.

Melrose Drive

Melrose Drive runs north-south through the City, supporting both residential and commercial uses and represents an important corridor for future development, particularly in the areas surrounding the SPRINTER station at the intersection of Oceanside Boulevard, reactivating aging commercial around West Vista Way and other areas along the corridor.

Freeway Frontage Corridors

There are also two main freeway fronting corridors that run parallel to SR-78. These corridors primarily support aging freeway commercial uses and are described in more detail below.

West Vista Way

West Vista Way runs north of SR-78 from Interstate-5 in Oceanside to Downtown Vista. The corridor is predominately made up of aging commercial and industrial uses such as car dealerships, car rentals, and a variety of strip commercial uses. There are a significant amount of underutilized and vacant parcels which present an opportunity for revitalization and investment in the corridor, to enhance the freeway serving commercial uses.

Hacienda Drive

Hacienda Drive runs along the south side of SR-78 from Thunder Drive to Downtown Vista. Similar to West Vista Way, there is a large amount of aging commercial uses along Hacienda Drive. In particular, eastern portions of the corridor are defined by big box commercial stores with large parking lots that are largely empty, while western portions primarily support strip commercial but also includes large box stores such as Costco. Unlike West Vista Way, there are a number of multi-family residential developments along the corridor between Emerald Drive and La Tortuga Drive. The Buena Vista Creek also runs parallel to Hacienda Drive, which if enhanced, would provide a great recreational opportunity for residents.

Nodes

In addition to having a strong Downtown core and defining corridors, Vista also has key nodes that provide focal points in the City. These can represent an intensity of activity, a civic building or landmark, a concentration of land uses, and/or a notable pattern of development. Primarily, these nodes center around commercial shopping

centers, “big box” stores, and other important retail. These include the commercial node formed by the Vista Village Center along Main Street, North County Square on University Drive and Sycamore Avenue, and the area around the Costco at Emerald Drive

Nodes may also include large or prominent developments, such as the County Courthouse Complex of buildings along South Melrose Drive, the Vista Business Park on the southernmost tip of the City, and the area surrounding the Vista Village Mobile Home Park (E Vista Way and Foothill Drive) .

An interesting feature of Vista’s urban form is its smaller nodes. Several civic and institutional uses, such as schools, churches, and parks are spread throughout the City, forming neighborhood nodes within the larger city structure.

Nodes are important points in the City because they bring people, goods, services, and infrastructure together, and they serve as defining moments of city life. They can also function as key markers or reference points in the city.

Gateways

Like Nodes, gateways are key reference or focal points in a city, yet they differ from nodes in that they also signify entry, arrival, and departure between cities, neighborhoods, landscapes, and areas. Vista has two obvious gateways from SR-78: one at Civic Center Drive and another at Vista Village Drive. These two highway exits lead directly to the civic and commercial core of the City and as such, represent major gateways to the City. Exits at Sycamore Avenue, Mar Vista Drive, and Emerald Drive provide access to more outlying areas of the City. Major thoroughfares in the City, such as Melrose Drive, Santa Fe Avenue, and Vista Way crisscross the City and offer multiple gateways at key moments along the way. Gateways are important in the City because they offer opportunities to identify the City, a neighborhood, or an area with distinct development, signage, lighting or art. Some of Vista’s gateways and their characteristics are discussed below.

West Vista Way/Vista Village Drive Intersection

As mentioned above, the West Vista Way/Vista Village Drive Intersection is one of the main entrances into the City from SR-78. The area is characterized by larger-scale commercial, car dealerships, as well as recreational facilities such as the Wave Water Park and Vista Village Creek Walk. This area has a number of underutilized parcels that present an opportunity for redevelopment in the future.

Civic Center Drive/South Santa Fe Avenue Intersection

The Civic Center Drive/South Santa Fe Avenue Intersection is another main entrance into the City from SR-78. The area is characterized by strip commercial uses, fast food restaurants, and similar uses. North on South Santa Fe Avenue, just west of Civic Center Drive, is the iconic Vista gateway signage.

North Santa Fe Avenue/Bobier Drive Intersection

The North Santa Fe Avenue/Bobier Drive area is a suburban oriented area predominately made up of single-family home and community serving commercial. The area serves as a gateway from Oceanside to the west, SR-76 to the north, and links the Melrose Drive SPRINTER station to the Vista Transit Center. The area is identified as an opportunity area for future development to solidify its prominence as a northwest gateway into Vista.

South Santa Fe Avenue/Mar Vista Drive Intersection

The South Santa Fe Avenue/Mar Vista Drive area is predominantly residential, including a variety of multi-family housing developments. This area serves as a southeastern gateway into Downtown Vista and is well positioned for future infill development, possibly of higher densities. There are a number of older shopping centers that present opportunities for redevelopment to mixed-use development.

East Vista Wy/Bobier Dr

East Vista Way is an important north/south corridor that provides connections to both SR-76 as well as Gopher Canyon Road, which connects to I-15. The northern parts of E Vista Way are still predominately rural in nature, supporting larger lots. It is an important gateway into the city particularly for regional connections to other parts of the County.

Civic Center Dr/SR-78 Intersection

Similarly, to the West Vista Way/Vista Village Drive Intersection mentioned above, Civic Center Dr/SR-78 Intersection is one of the main entrances into the City from SR-78. The area is a mix of residential and smaller commercial uses such as pharmacies, coffee shops and fast food restaurants.

Olive Ave/N Melrose Dr Intersection

Melrose Drive is an important north south connection through the City of Vista. This intersection provides a connection to downtown Vista, as well as SR-78 to the south. The area is categorized by mobile homes, trailer parks and industrial type uses.

Residential Neighborhoods

Residential land uses are the predominant land use type in the City, with the majority being low to medium density. Portions of the City have retained the semi - rural character, such as the neighborhoods in east Vista.

The City's residential neighborhoods have distinct characteristics that distinguish them from one another based on their respective period of development. Neighborhoods in the northern portions and along the eastern edges of the City, generally have a semi-rural character with narrow curvilinear roadways that follow natural topography, larger lots, older, post-war homes, and eclectic mix of non-descript architecture. Neighborhoods in the central portions of the City, just north

of SR-78, include a mix of more dense single-family and multi-family areas. Neighborhoods south of SR-78 along Shadowridge Drive are the newer areas of the City comprised of master planned development built in the 1970s, 1980s, and 1990s reflecting more consistent, non-descript, architectural style.

Employment Districts

In addition to the employment centers identified in and around the outskirts of Downtown Vista, there are areas where non-retail uses such as warehousing, offices, and other industrial uses are concentrated. One major hub for these uses is the Vista Business Park Specific Plan area. The Vista Business Park Specific Plan is approximately 1,153 acres, located south of SR-78 in the southern portion of the City of Vista. The Specific Plan predominantly includes office and industrial uses as well as big-box commercial stores such as Target and Home Depot. However, as seen in other business parks in the region, there are a number of craft breweries and tasting rooms within the Specific Plan area. The Specific Plan was adopted in the 1990s and is fully built out, many of the development standards and design guidelines are outdated and therefore this presents an opportunity for revisions to allow flexibility and reinvestment in the area so that this area will be able to successfully act as a commercial and industrial hub into the future.

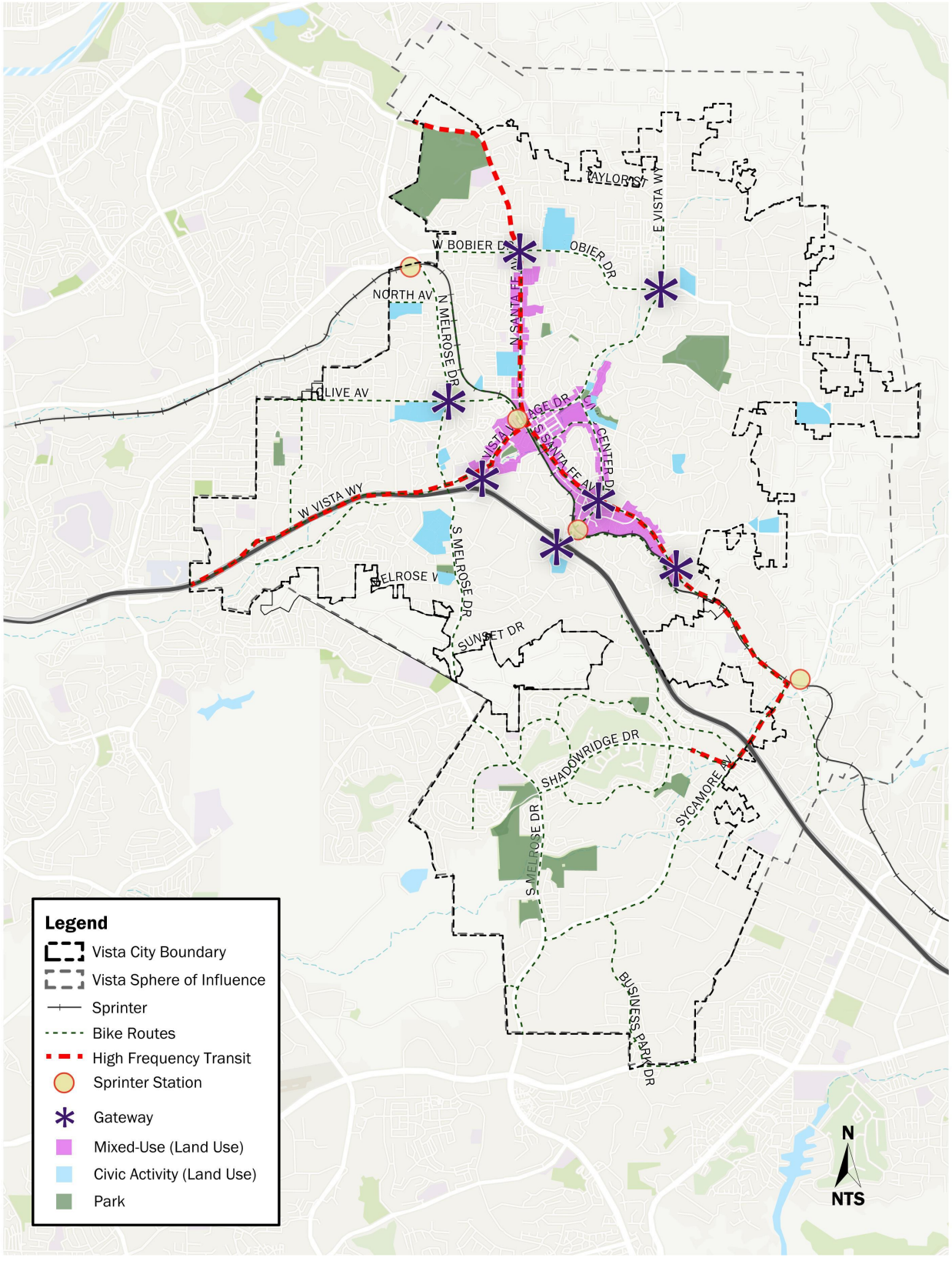
Aging Commercial Centers

There are several aging commercial centers that provide opportunities for reinvestment and redevelopment. The following areas have been identified as the key aging commercial corridors but there are other smaller areas with the same characteristics throughout the City.

- Shadowridge Drive between Watson Way and Sycamore Avenue and Sycamore Avenue between Shadowridge Drive and SR-78
- East Vista Way between Civic Center Drive and Warmlands Avenue
- South Santa Fe Avenue between Civic Center Drive and the eastern City boundary

The commercial uses in these areas are characterized by strip mall type development and large parking lots fronting the street. The developments lack visual interest and curb appeal, and it appears that there have been a number of vacancies. These types of strip mall development present opportunities for redevelopment to activate street frontages and provide high quality retail spaces.

Figure 3.2: Citywide Urban Form



3.1.4 Regulatory Setting

The following regulations and their descriptions govern land use and community character in Vista. Many of the regulations have remained the same since the last General Plan update.

Local

City of Vista General Plan

The existing Vista General Plan 2030 outlines land use and community character goals that are intended to help achieve the vision for the future of Vista. Together with the land use plan, these goals guide future development to ensure that new and existing uses are compatible and fit with the overall identity and character of Vista. The following goals were key priorities in the General Plan 2030 and act as the foundation for this General Plan Update:

- Enhance the level of design of development to create a quality identity and image for the city.
- Preserve and protect existing residential neighborhoods while also providing for a range of different housing types for all residents.
- Revitalize aging and underutilized commercial uses.
- Provide a mix of land uses suitable for an urban setting to attract and retain quality businesses and institutions.
- Promote sustainable growth through development regulations and guidelines.
- Support complete street designs that provide multiple transportation options for residents.
- Protect the existing character of areas and ensure any future annexations are compatible with existing land uses.
- Support opportunities for public art.
- Encourage public participation in decision making.
- Understand, support, and plan for the city's diverse population.

Specific Plans

A specific plan is a planning tool that defines the types, intensities, and densities of allowable uses; identifies public and private infrastructure; provides specific standards and design criteria by which development will proceed; and includes an implementation and financing plan. Its contents are specified by Sections 65450-65457 of the California Government Code. Vista has a number of specific plans covering throughout the City that provide land use and zoning guidance for these areas.

Design Guidelines

Vista established design guidelines in 2008 and updated these in 2017 with the intent to increase the level of design quality in the City. These guidelines aim to assist the design phase of development proposals for both commercial and residential projects, which influence the community characteristics. Projects are evaluated based on four design priorities:

1. Site planning
2. Architecture
3. Lighting
4. Signage

The guidelines provide direction for the development and redevelopment of properties in order to achieve a high-quality product, but they are not an exhaustive list and do not replace the standards of the Development Code. The architectural guidelines have been a strong resource for the City in recent years. Additionally, pursuant to SB330, the City adopted Objective Design Standards for multi-family residential projects. While the Design Guidelines are only five years old, there are opportunities to revise these standards or adopt further Objective Design Standards for other types of land uses to guide development into the future.

City of Vista, City Council 2022-2024 Goals

Every other year the Vista City Council conducts goal setting workshops to identify and determine the City's priorities for the next two years. Earlier this year, the City Council conducted their latest workshop and identified their goals for 2022-2024. City staff are tasked with developing an Action Plan based on the goals to outline implementation, including responsible party, cost, and timeline.

The City identified a number of opportunity areas in which the City could improve to raise the City's image and provide a higher quality of life for its residents. A summary of the opportunity areas is outlined below:

- Homelessness and Housing: The City recognized the need to advocate for mental health services, continue to create affordable housing, improve tenant protections, as well as continuing to implement plans already in place to support and assist residents to get out of homelessness.
- Blight: The City identified that there is still a need to focus on cleaning up the City.
- Communication: A large focus was put on improving public engagement; providing more workshops when necessary and implementing tools that allow accessibility to all people in the community.
- Public Safety: The City saw a need for reducing crime, including increasing the number of deputies and firefighters per 1,000 residents.

- Infrastructure: The City identified key improvements throughout the City, including investment in the redevelopment of North Santa Fe Avenue, increasing shade canopies, improving parking in downtown, utilizing City land for parks and other community services, and improving bike lands and pedestrian corridors.
- Parks: The City recognized the need for more community pocket parks and gardens and saw a lack of parks and dog parks in north vista. The City also identified a need for more connectivity between trails and providing urban trails.
- Economic Development: The City Identified a need to repurpose high vacancy retail and office uses.

Based on the opportunity areas above, the City identified the following eight goals for 2022-2024:

1. Homelessness and Housing
2. Public Safety
3. Fiscal Responsibility
4. A Cleaner Vista
5. Climate and Environmental Responsibility
6. Parks and Recreation
7. Economic Development
8. Traffic: Continue to improve the flow of traffic for all forms of travel, reduce congestion, and improve our roads and sidewalks

Many of these goals have been reoccurring goals in recent years and therefore provide a framework to begin thinking about the General Plan Update and how to accomplish these goals through land use planning and policy.

3.2 Existing General Plan Land Use Designations

The City of Vista General Plan provides a blueprint for how the City should be developed by providing broad guidance on the location, type, and density of new growth and development over a long-term planning horizon through the application of land use designations. Land use designations identify both the types of development (e.g., residential, commercial, industrial) that are permitted and the density or intensity of development allowed, such as the minimum or maximum number of housing units permitted on an acre of land, or the amount of building square footage allowed. **Figure 3.4** shows the existing Vista General Plan 2030 Land Use map.

3.2.1 Findings

- The City has over 3,000 acres of land within its SOI that has potential to be annexed into the City within the next 20-years.
- Over 70 percent of the land in Vista and within its SOI is designated for some level of residential development, ranging from very low density to high density. When planning for future housing, sensitivity to the rural character will be important, while also allowing higher density residential, where appropriate, to active transportation/transit corridors.
- Existing land use designations, primarily the High Density Residential and Mixed Use, provide an average density or intensity standard that is too low to effectively facilitate high, transit-oriented development. As the City looks to both densify its existing transit corridors and revitalize its aging commercial corridors, greater density and intensity will be necessary.
- The Research Light Industrial (RLI) land use is only used in conjunction with the Vista Business Park Specific Plan. There is opportunity to expand the RLI land use to be utilized in other parts of the City to allow compatible light industrial uses.

3.2.2 Existing Conditions

The Vista General Plan 2030 provides land use designations that direct future land use decision making in the City of Vista and its Sphere of Influence. The land use designations provide density and intensity limitations for development, but do not establish specific standards such as height, setbacks etc. which is found in the Development Code and Specific Plans. The major categories of land use types in Vista include: residential; commercial; mixed use; industrial; civic activity: open space; and parks and recreation. Within each of these categories are specific land use designations, which are described below. **Table 3.1** is a breakdown of the existing land use designations within the City of Vista and its SOI.

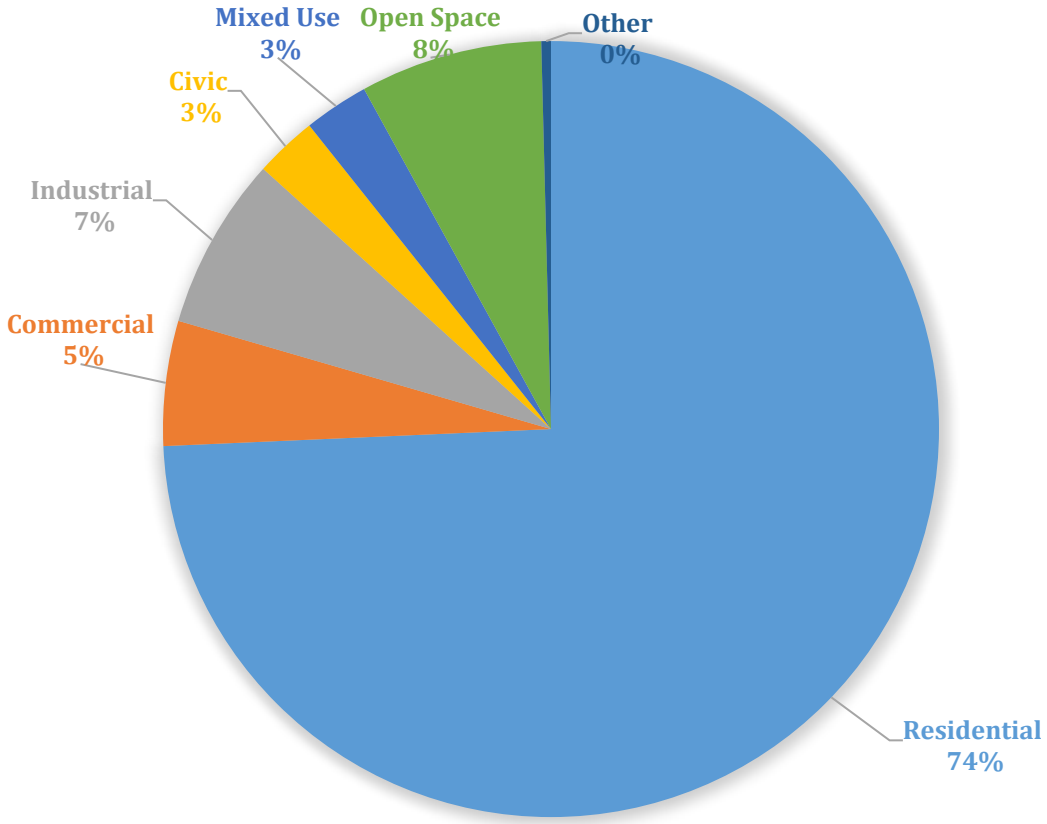
Table 3.1: Existing General Plan Land Use Designations

Land Use Designation	Acres	% of Total Acreage
Open Space Residential (OSR)	93	0.6%
Rural Residential (RR)	3,710	25.2%
Low Density Residential (LD)	1,903	12.9%
Medium Low Density Residential (MLD)	2,527	17.2%
Medium Density Residential (MD)	1,504	10.2%
Medium High Density Residential (MHD)	558	3.8%

High Density Residential (HD)	653	4.4%
Mixed Use (MU)	405	2.7%
Commercial Office (CO)	55	0.4%
Neighborhood Commercial (CN)	196	1.3%
General Commercial (GC)	488	3.3%
Commercial Services (CS)	24	0.2%
Industrial General (IG)	204	1.4%
Research Light Industrial (RLI)	854	5.8%
Civic Activity (CA)	384	2.6%
Parks and Recreation (PR)	497	3.4%
Open Space (OS)	622	4.2%
Railroad ROW	57	0.4%
Total	**14,734**	

Source: Vista General Plan 2030

Figure 3.3: City of Vista Existing General Plan Land Use Designations, Percentage of Total Acreage



Residential

The Residential land uses come in a range of densities and intended locations for development in the City. The densities go from extremely low density, large lot, single family with non-habitable accessory structures for agricultural uses all the way to high density, attached multi-family residential development of patio homes, townhomes, and apartments.

Rural Residential (RR)

The rural residential land use category is predominantly extremely low density, large lot, single family residential uses and promotes the continued use of agricultural land uses. The RR designation is also intended minimize environmental impacts on hillside areas within the city. The city has primarily applied the RR land use to properties outside of the city limits, within the city's SOI, particularly in the north and east portions of the city. There is opportunity for this land to be annexed into the city in the next 20-years. It is likely that any land annexed on the east side of Vista would retain its rural residential character. However, there could be opportunities for properties either side of Melrose Drive (County islands), if annexed, to achieve higher densities.

Coinciding Zoning: Specific Plan Implementation (SPI), Open Space (O), Open Space Residential (O-R), Planned Residential Development (PRD), and Agricultural (A-1)

Density/Intensity: one (1) dwelling unit per acre.

Open Space Residential (OSR)

The intent of the Open Space Residential (OSR) land use designation is to preserve the rural character and hillside topography of Vista. The OSR designation is primarily located in eastern part of Vista where steep slopes occur. Future development in these areas is unlikely due to the topography.

Coinciding Zoning: Specific Plan Implementation (SPI), Open Space (O), Open Space Residential (O-R), and Planned Residential Development (PRD)

Density/Intensity: 0.4 dwelling unit per acre.

Low Density (LD)

As seen in **Table 3.1** above, the Low Density (LD) land use is one of the largest residential land use designations within Vista. The intent of the LD land use designation is to enhance the rural character of Vista to provide low-density, large lot, single family homes and limited agricultural uses. The LD designation is primarily given to properties on the eastern portion of Vista that retain the rural residential character.

Coinciding Zoning: Specific Plan Implementation (SPI), Open Space (O), Planned Residential Development (PRD), Agricultural (A-1), Estate (E-1), and Mobile Home Park (MHP)

Density/Intensity: The LD land use provides for a slightly higher densities than the RR and OSR designations at two (2) dwelling units per acre.

Medium Low Density (MLD)

As seen in **Table 3.1** above, the Medium Low Density (MLD) land use is the largest residential land use designations within Vista (not including the SOI). The MLD land use designation accounts for a majority of the older single-family developments within the City. There is potential for some of these MLD residential to transition to higher densities, particularly along transit corridors such as the SPRINTER and either side of SR-78.

Coinciding Zoning: Specific Plan Implementation (SPI), Open Space (O), Planned Residential Development (PRD), Estate (E-1), Residential (R-1), and Mobile Home Park (MHP).

Density/Intensity: The MLD land use provides for a slightly higher densities than the LD designations at five (5) dwelling units per acre with minimum lot sizes of 10,000 square feet.

Medium Density (MD)

The Medium Density (MD) land use designation is intended to allow medium density single-family detached homes on smaller lots close to the urban core, including townhomes and duplexes. It appears that the majority of the medium density residential is located adjacent to the mixed-use and transit corridor areas along Vista Village Drive, North and South Santa Fe Avenue and Melrose Drive. There is potential for these areas to support higher densities, particularly along the transit corridor and presents an opportunity for redesignation with this General Plan Update.

Coinciding Zoning: Specific Plan Implementation (SPI), Open Space (O), Planned Residential Development (PRD), Residential (R-1), Residential (R-1-B), Multi-Family Residential (R-M), and Mobile Home Park (MHP).

Density/Intensity: The MD land use provides for a slightly higher densities than the MLD designations at ten (10) dwelling units per acre.

Medium High Density (MHD)

The Medium High Density (MHD) land use designation is intended to allow medium to high density multi-family residential developments such as duplexes, townhomes, and apartments. The MHD is generally located along major roadways and corridors and surrounding the downtown core. Similar to the MD land use designation, there are opportunities for higher densities along the SPRINTER corridors to promote transit-oriented development.

Coinciding Zoning: Specific Plan Implementation (SPI), Open Space (O), Planned Residential Development (PRD), Residential (R-1-B), Multi-Family Residential (R-M), and Mobile Home Park (MHP).

Density/Intensity: The MHD land use provides for a slightly higher densities than the MD designations at 15 dwelling units per acre.

High Density (HD)

The High Density (HD) land use designation is intended to allow high density, attached, multi-family residential developments such as duplexes, townhomes, and apartments. Similar to MHD, the HD land use designation is generally located along major roadways and corridors and surrounding the downtown core with a cluster around the Buena Creek SPRINTER station.

Coinciding Zoning: Specific Plan Implementation (SPI), Open Space (O), Planned Residential Development (PRD), Multi-Family Residential (R-M), and Mobile Home Park (MHP).

Density/Intensity: The HD land use provides for a slightly higher densities than the MHD designations at 21 dwelling units per acre.

Commercial

The Commercial land use designations allow for a range of commercial uses supporting various types of businesses. The commercial office land use supports professional office uses for administrative and business services while the commercial neighborhood is tailored to smaller scale commercial, . The general commercial and commercial services supports a broader range of retail sales and services providing flexibility and allowing higher intensity commercial uses. These land use designations are described in more detail below.

Commercial Office (CO)

As seen in **Table 3.1** above, there is only a small portion of the city designated as Commercial Office (CO). The CO designation is intended to allow single and multi-tenant businesses such as professional offices for physicians, attorneys, consultants, administration etc. Retail uses are allowed as ancillary uses to support the professional office uses.

Coinciding Zoning: Specific Plan Implementation (SPI), Open Space (O), and Office Professional (O-P).

Density/Intensity: The General Plan does not identify a max FAR and residential uses are not allowed.

Commercial Neighborhood (CN)

The Commercial Neighborhood (CN) designation is intended to provide neighborhood serving commercial uses including markets, convenience stores, restaurants, banks, pharmacies, and other related uses. The existing neighborhood commercial is largely along East Vista Way and is in the form of strip commercial.

Coinciding Zoning: Specific Plan Implementation (SPI), Open Space (O), Office Professional (O-P), Commercial (C-1), and Mobile Home Park (MHP).

Density/Intensity: The General Plan does not identify a max FAR and residential uses other than Mobile Home Parks are not allowed.

General Commercial (GC)

The General Commercial (GC) land use designation is intended to provide a broader range of uses than the CN designation. These uses include, community shopping centers, home appliances, furniture, and department stores. Hotels and motels are also allowed in this designation. The city has identified the need to retain and repurpose high vacancy commercial and office areas and therefore, this presents an opportunity to allow flexibility in the types of uses allowed in these land uses.

Coinciding Zoning: Specific Plan Implementation (SPI), Open Space (O), Office Professional (O-P), Commercial (C-1), and Commercial (C-2).

Density/Intensity: The General Plan does not identify a max FAR and residential uses are not allowed.

Commercial Services (CS)

The Commercial Services (CS) land use designation is intended to provide higher intensity commercial uses than the GC designation, including wholesales uses that are ancillary to industrial uses. There is very little of this land use within the City and therefore, there could be opportunity to remove this land use designation and as discussed in GC above, provide greater flexibility for these uses elsewhere.

Coinciding Zoning: Specific Plan Implementation (SPI), Open Space (O), Office Professional (O-P), Commercial (C-2), and Commercial (C-3).

Density/Intensity: The General Plan does not identify a max FAR and residential uses are not allowed.

Mixed-Use

Mixed Use (MU) land use designation combines a variety of compatible land uses in a single development with the intent to create vibrant centers for living, working, and shopping. The MU land use is primarily located in the City's Downtown area and is implemented by the Downtown Vista Specific Plan. The MU land use designation is intended to assist in the redevelopment of underutilized land, particularly commercial land in and around downtown Vista. There is opportunity to expand the Mixed Use designation along the SPRINTER corridor to promote transit-oriented development.

Coinciding Zoning: Specific Plan Implementation (SPI), and Mixed Use (M-U).
Density/Intensity: The MU land use designation allows for up to 40 units per acre. General Plan does not identify a max FAR for non-residential uses.

Industrial

The Industrial land use designations are intended to provide areas for general manufacturing with moderate nuisance characteristics (i.e., noise, smoke, dust,

odor, or glare) and heavy manufacturing, and use areas for the Vista Business Park Specific Plan development standards.

Industrial General (IG)

The Industrial General (IG) land use designation is intended to allow areas for general manufacturing such as bottling, chemicals, metal goods, and alcoholic beverages. The existing IG land uses are located along Melrose Drive and adjacent to the Vista Business Park Specific Plan area.

Coinciding Zoning: Specific Plan Implementation (SPI), Open Space (O), Industrial Park (IP), and Manufacturing (M-1).

Density/Intensity: The General Plan does not identify a max FAR and residential uses are not allowed.

Research Light Industrial (RLI)

The Research Light Industrial (RLI) was originally established with the Vista Business Park Specific Plan and primarily allows office, research, testing, and other light manufacturing uses. Ancillary uses are allowed that support the primary businesses. The Vista Business Park Specific Plan is located in the southeast portion of Vista. This area presents an opportunity to rethink the RLI designation and the Business Park area to allow greater flexibility of land uses.

Coinciding Zoning: Specific Plan Implementation (SPI), Open Space (O).

Density/Intensity: The General Plan does not identify a max FAR and residential uses are not allowed.

Civic Activity

The Civic Activity land use designation includes public and quasi-public uses that provide a necessary and/or desirable service to the community including fire stations; court houses; government offices, facilities, and storage yards; libraries; public schools; museums; cultural facilities: community centers; and public utilities. These uses are scattered throughout the City but a cluster are located in the northeast portion of downtown, including the Vista Civic Center.

Coinciding Zoning: Specific Plan Implementation (SPI), Open Space (O), and Civic Activity (CA).

Density/Intensity: The General Plan does not identify a max FAR and residential uses are not allowed.

Open Space

The Open Space land use designation is intended to preserve the major creeks, Buena Vista Park, and other natural features such as floodplains, and topography. The OS designation does not allow development but may allow ancillary uses, such pedestrian, biking, and equestrian trails with associated staging and parking areas, community gardens, and renewable energy projects.

Coinciding Zoning: Open Space (O), and Open Space Residential (O-R).
Density/Intensity: No development is allowed in this designation

Parks and Recreation

The Parks and Recreation land use designation is for public parks, recreation areas and facilities throughout the city as well as recreational facilities such as golf clubs and country clubs, in private development. Some of the main city parks include Guajome Park, Brengle Terrace Park, Buena Vista Park, and The Wave. Ancillary uses, such as community gardens, farmers' markets, renewable energy projects, LID demonstration projects, etc., are allowed.

Coinciding Zoning: The existing General Plan states that a new zoning district will be implemented for this land use designation but it does not appear to have been implemented at this time.

Density/Intensity: No development is allowed in this designation

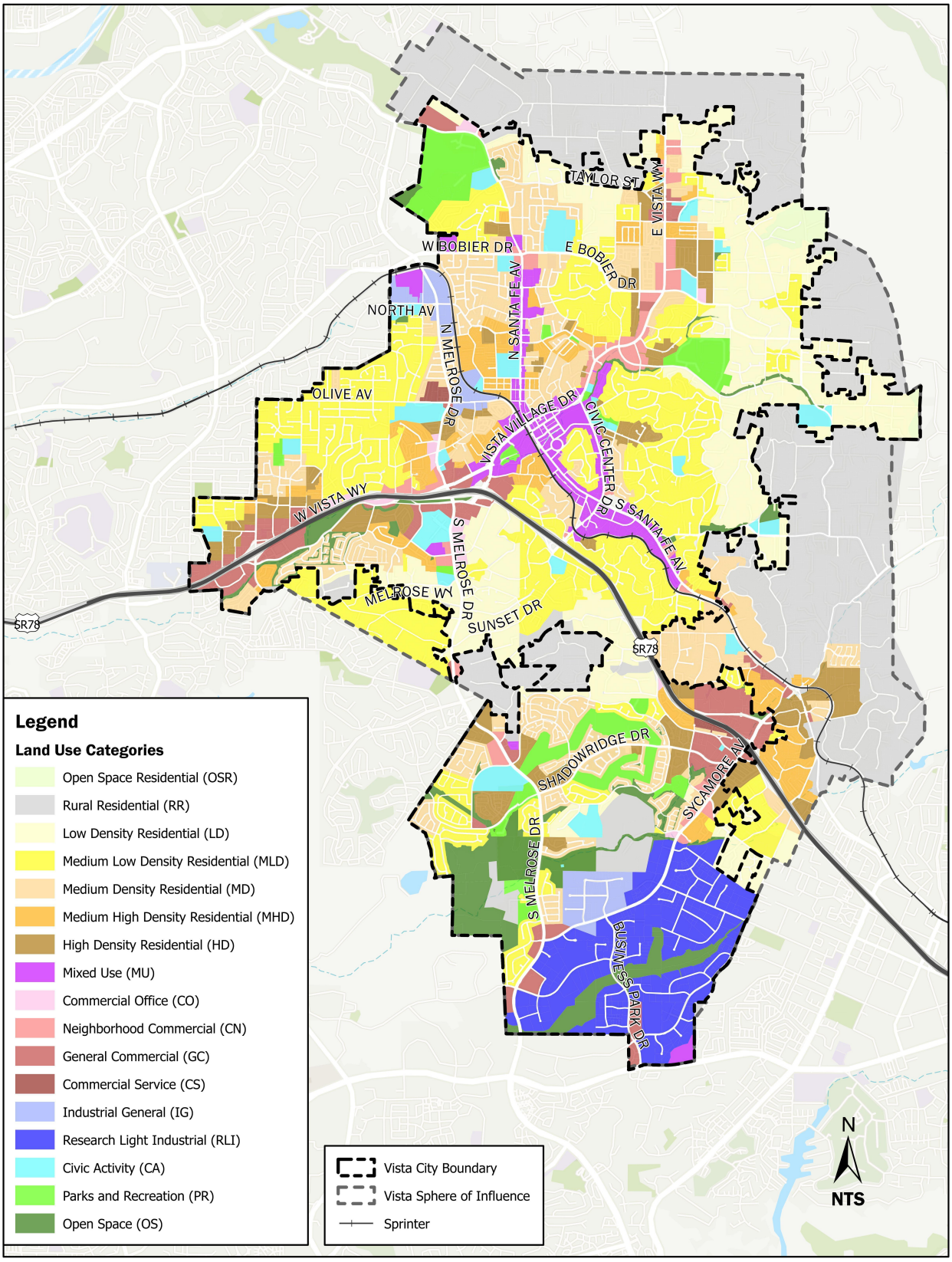
Biological Preserve Overlay (BPO)

The Biological Preserve Overlay (BPO) is a land use overlay with the purpose of designating areas in the City of Vista for long-term conservation of biological resources. There are a handful of these areas throughout the city, including parts of Buena Vista Creek and Buena Vista Park.

Coinciding Zoning: Open Space (O)

Density/Intensity: No development is allowed in this designation

Figure 3.4: Vista General Plan 2030 Land Use Map



3.3 Existing Zoning

This section outlines the City's Zoning Ordinance, which is located in Title 18 of the City's Development Code. Zoning implements the land uses of the General Plan. While the General Plan provides broad guidance on the location, type, and density of new growth and development over a long-term planning horizon, the zoning provides detailed development and use standards for each parcel. Zoning also provides regulations on the specific uses that are permitted within each zone.

3.3.1 Findings

- Over 30 percent of the land within the city (excluding SOI areas) is zoned Specific Plan.
- Approximately 50 percent of the land within the city is zoned for residential (single-family, multi-family, and estate). Of this 50 percent, over 40 percent is zoned for single-family residential.
- Only 3 percent of the land within the city is zoned for open space.

3.3.2 Existing Conditions

The following section outlines the zoning districts within the City of Vista as defined by the Development Code.

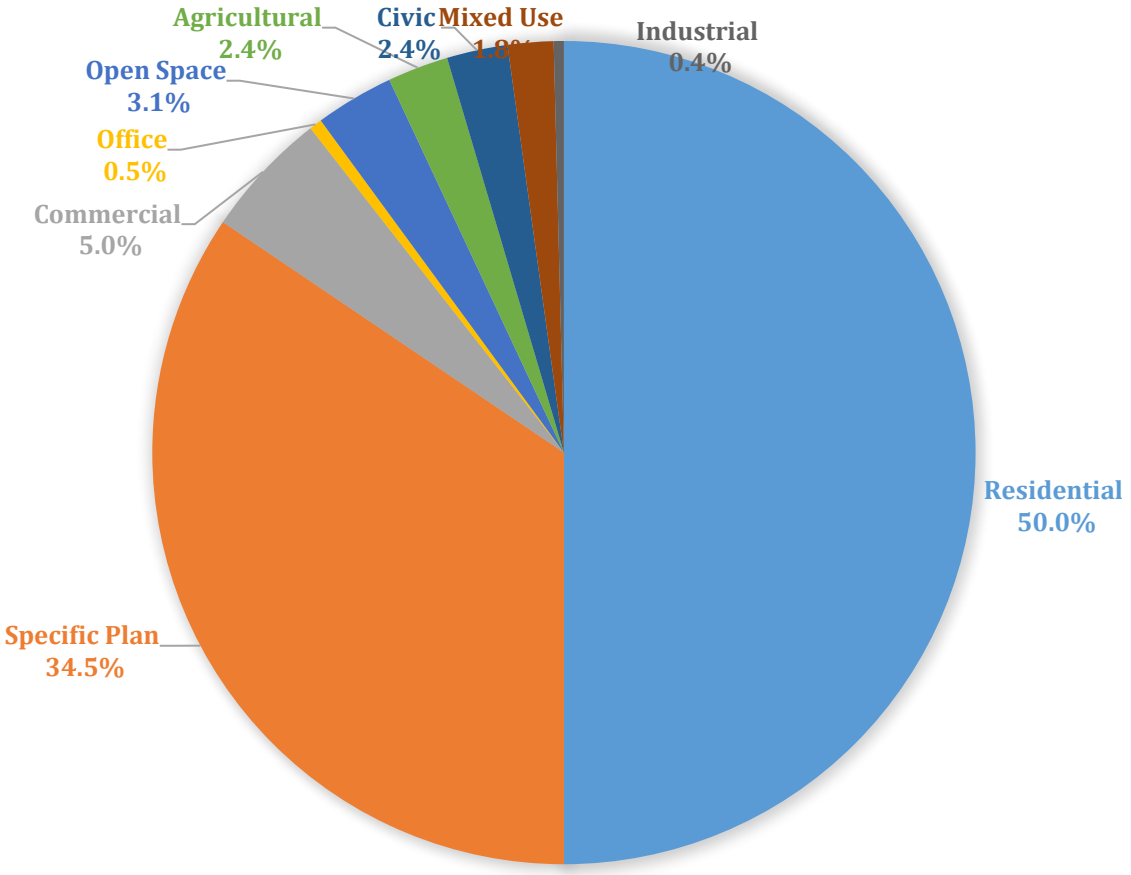
Table 3.2: Existing Zoning Designations, City of Vista

Zoning Designation	Acres	% of Total Acreage
Agricultural Zone (A-1)	230	2.4%
Commercial Zone (C-1)	338	3.3%
Commercial Zone (C-2)	132	1.3%
Commercial Zone (C-3)	43	0.4%
Civic Activity (C-A)	250	2.4%
Estates Residential (E-1)	1,743	16.9%
Light Manufacturing (M-1)	37	0.4%
Mixed Use (M-U)	184	1.8%
Mobile Home Park (MHP)	143	1.4%
Open Space (O)	324	3.1%
Office Professional (O-P)	50	0.5%
Open Space Residential (O-R)	48	0.5%
Residential (R-1)	1,932	18.7%
Residential (R-1-B)	443	4.3%

Multi-Family Residential (R-M)	865	8.4%
Specific Plan Implementation (SPI)	3,581	34.6%
Total	**10,343***	**100.4**

*Does not include major roads and includes the entire SOI.

Figure 3.5: Existing Zoning Designations, Percentage of Total Acreage



Agricultural Zone (A-1)

The A-1 zone allows for rural residential and agricultural uses. Residential is generally limited to one single-family unit, guesthouses, farm housing, and other accessory uses. Keeping of animals, growing of crops, and other agricultural uses are allowed with certain restrictions. Additional uses may be permitted with a special use permit. The A-1 zoning district aligns with the Low Density (LD) and Rural Residential (RR) land use designations of the General Plan which has similar characteristics. There are very little agricultural zoned properties within the City of Vista, and it is generally located on the outskirts of the city. The majority of the agricultural properties, especially in east Vista are unlikely candidates for rezoning and will likely retain the rural character.

Commercial Zone (C-1)

The C-1 zone is the least intensive of the three commercial zones and allows for a range of neighborhood services commercial uses. These uses should be compatible with the surrounding residential neighborhoods and therefore are typically lower intensity than other commercial use types. Uses such as banks, barbershops, department stores, health clubs, laundry services, professional or business offices, restaurants, theaters, and similar types of uses are commonly seen in the C-1 zone. Additional uses may be permitted with a special use permit. The C-1 zoning district aligns with the Neighborhood Commercial (NC) land use designations of the General Plan. Many of the C-1 zoned properties in the city are characterized by strip commercial type development, revisiting the development standards for commercial zones could assist in creating high quality, commercial spaces that draw both businesses and people.

Commercial Zone (C-2)

The C-2 zone is a moderately intense commercial zone. The C-2 zone allows all of the neighborhood serving commercial uses allowed in the C-1 zone but includes some more intense uses such as limited food manufacturing, single occupancy hotels, light manufacturing, storage warehouses, and other similar uses. The C-2 zoning district generally aligns with the General Commercial (GC) land use designations of the General Plan. C-2 zoned property is mostly located along SR-78 and Sycamore Avenue and is characterized by big box stores such as Target, Walmart, and Costco.

Commercial Zone (C-3)

The C-3 zone is the most intense of the three commercial zoning designations. This zone allows all the uses in the C-1 and C-2 zones but also allows manufacturing, assembly, automobile bodywork, laboratories, storage buildings, warehouses, and similar types of uses. The C-3 zoning district generally aligns with the Commercial Services (CS) land use designations of the General Plan. There is very little C-3 zoned property in the city. These areas are located in the southern, eastern, and western portions of the City.

Civic Activity (C-A)

The C-A zone applies to property that is owned by a public agency and implements the Civic Activity land use designation of the General Plan. The only uses permitted in the C-A zone include public buildings and uses by a public agency. Some temporary uses are allowed if permitted by the public agency.

Estate Residential (E-1)

The E-1 zone allows residential and agricultural uses and minimum lot sizes of one-half acre. The E-1 zoning district aligns with the Low Density (LD) land use designations of the General Plan. The majority of the E-1 zoning is in the northeastern portions of the City in line with the rural neighborhoods. There are some E-1 zoned properties south of SR-78, these are primarily developed

residential, however, there are a couple of properties along Hacienda Drive, near Vista Village Drive that could provide opportunities for rezoning to support more commercial uses along the freeway frontage in close proximity to the interchange.

Light Manufacturing (M-1)

The M-1 zone allows all the uses in the C-3 zone but also includes blacksmith shops, bottling works, food processing, large and small recycling facilities, light manufacturing uses, paint shops, welding shops, research laboratories, and other similar uses. The M-1 zoning district aligns with the Industrial General (IG) land use designations of the General Plan. The intersection of Melrose Drive and Olive Avenue is the only area in the City that supports the M-1 zone. This area has multiple self-storage uses and other uses that are allowed in the existing commercial zones. This area is close to the Vista Transit Center Station and therefore could be an area with possibility of future transit-oriented development.

Mobile Home Park (MHP)

The MHP zone is intended to provide appropriate locations for mobile home parks of all sizes with adequate amenities, open spaces, and parking. Some accessory uses are permitted. The MHP zoning district generally aligns with the Medium Density Residential (MD) land use designations of the General Plan. There are three main clusters of mobile home parks throughout the city, Emerald Drive/Sunset Drive, Melrose Drive/Olive Avenue and East Vista Way between Bobier Drive and Taylor Street.

Open Space (O)

The O zone is intended to preserve land in the vicinity of the Buena Vista Creek and Agua Hedionda Creek as well as undeveloped floodplains, geologic hazard areas, historic sites, and other similar areas of environmental and cultural significance. The O zone allows a very limited number of uses including public buildings, parks, and community gardens. The O zoning district generally aligns with the Open Space (OS) and Parks and Recreation (PR) land use designations of the General Plan. The City Council identified in their 2022-2024 goals that some city-owned property could be utilized for expanding open space and recreational activities.

Office Professional (O-P)

The O-P zone is intended to provide a wide range of professional and business office space. Theses uses include pharmacies, insurance companies, real estate services, finance services, medical offices, legal services, schools, post offices, and other related uses. The O zoning district generally aligns with the Commercial Office (CO) land use designations of the General Plan. The CO land uses are located along Melrose Drive, either side of SR-78.

Open Space Residential (O-R)

The O-R zone is an overlay zone and is used only in conjunction with the Open Space (O) zone. The permitted uses in the O-R zone include agricultural, single

family, guesthouses, and residential care homes along with supporting uses. The minimum lot area in the O-R zone is determined by the numeral following the zoning designation. There are only small amounts of O-R zoning in the City, located along the eastern boundary.

Single Family Residential (R-1)

The purpose of the R-1 zone is to provide single-family residential development. The R-1 zoning district generally aligns with the Medium Low Density Residential (MLD) land use designations of the General Plan. The minimum lot size is 10,000 square feet which correlates to a maximum of approximately four (4) dwelling units per acre. As shown in **Figure 3.6** below, the R-1 zone has the largest percentage of all residential zones in city. These areas are largely older residential developments and are fully developed. While these areas are unlikely to see significant change from their single-family character, there may be opportunities to allow for higher densities, particularly for areas close to the downtown core, SPRINTER transit corridor, or SR-78.

Single Family Residential (R-1-B)

Similar to the R-1 zone, the R-1-B zone is intended to provide single-family residential development. The R-1-B zone district aligns with the Medium Density Residential (MD) land use designation of the General Plan. The minimum lot size is 6,000 square feet which correlates to a maximum of seven (7) dwelling units per acre. Typically, medium density zoning designations should be able to support lower density apartments/townhomes that provide multi-family options. The existing density is on the lower side and provides opportunity for an increase in density to support some of these multi-family options in certain areas, particularly closer to the downtown core and other commercial areas.

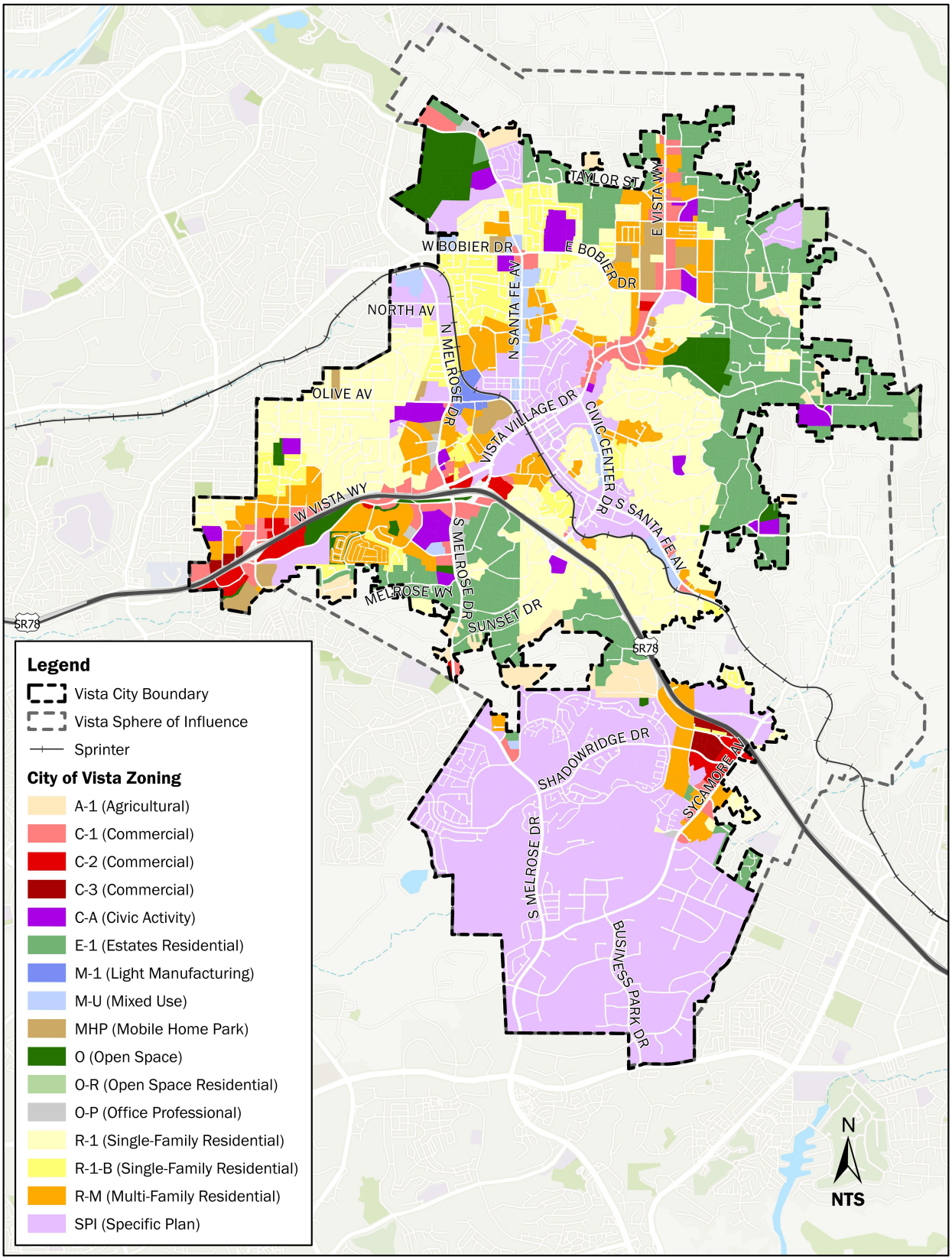
Multi-Family Residential (R-M)

The R-M zone supports both single-family and multi-family residential development. The R-M zone district aligns with the Medium High Density Residential (MHD) and High Density Residential (HD) land use designations of the General Plan. The maximum density is determined by the General Plan and therefore would be either 15 dwelling units per acre for properties within the MHD land use or 21 dwelling units per acre for properties within the HD land use. Again, this is generally on the lower side of high-density zones and provides opportunities to revise the density to allow investment in multi-family properties throughout the city.

Specific Plan Implementation (SPI)

The SPI zone is applied to properties within Specific Plan areas in the city. The existing Specific Plans are discussed in more detail below along with opportunities and constraints of the existing Specific Plans.

Figure 3.6: City of Vista Zoning Map



3.4 Previous Planning Efforts

3.4.1 Existing Specific Plans

A specific plan is a planning tool that defines the types, intensities, and densities of allowable uses; identifies public and private infrastructure; provides specific standards and design criteria by which development will proceed; and includes an implementation and financing plan. Its contents are specified by Sections 65450-65457 of the California Government Code. Vista has 20 specific plans covering approximately 3,581 acres or 30 percent of Vista per the existing zoning designations. Most of the specific plan areas are fully built out.

Many of the existing Specific Plans were adopted in the 1990s and early 2000s, with the most recent being the 2015 Downtown Vista Specific Plan, which was then amended in 2018. Some of the adopted specific plans that are still active and applicable, including the Downtown Vista Specific Plan, are described in more detail below.

Downtown Vista Specific Plan

The City adopted the Downtown Vista Specific Plan in 2015. Downtown Vista is located in the center of the City, just north of SR-78. The Specific Plan area generally includes properties within 2-3 blocks of Vista Village Drive and S Santa Fe Drive. The Specific Plan is divided into six sub-districts, each with unique elements that define the character of Downtown. Within each sub-district, land uses generally align with the general plan land uses including mixed use, civic activity, open space, parks and recreation, commercial, residential, and multifamily residential. The Downtown Vista Specific Plan is a pertinent planning tool to encourage revitalization and development on underutilized parcels within the Downtown.

Vista Business Park Specific Plan

The City adopted the Vista Business Park Specific Plan in 1933, with the most recent amendment happening in 2021. Building height, lot size, setbacks and parking among other development standards all present possible constraints to redevelopment and could be revisited to see if they promote or hinder development today. Additionally, the Specific Plan splits the area in to “uses areas” and outlines specific uses that are allowed in each of the areas. There is possibility to allowing greater flexibility of allowed uses throughout the plan area to encourage a mix of uses. The plan does include a small mixed use overlay area which appears to have been used to develop a hotel and townhome/apartments. There could be potential to expand this mixed-use designation.

3.5 Other Agency Plans

SANDAG Regional Plan/SCS

Every four years, SANDAG prepares and updates a Regional Plan in collaboration with the 18 cities (including Vista) and County of San Diego along with regional, state, and federal partners. The Plan covers a wide range of topics such as housing, transportation, the economy, and the environment. The most recent Regional Plan "San Diego Forward" was adopted by the SANDAG Board of Directors in 2021 and provides a blueprint for a sustainable future for the San Diego region.

The 2021 Regional Plan includes a Sustainable Communities Strategy (SCS), as required by California Senate Bill 375 for the San Diego region. The SCS aligns transportation, housing, and land use decisions toward achieving GHG emissions reduction targets set by the California Air Resources Board (CARB). The 2021 Regional Plan SCS includes transportation and land use planning that exceeds the state's target for reducing per capita GHG emissions.

While the 2021 Regional Growth Plan is an important part of developing a sustainable future for the San Diego region, the plan itself does not have any direct land use authority in Vista. However, the 2021 Regional Plan's goals, strategies and should be considered and integrated into future planning efforts for the City.

San Diego County General Plan

The San Diego County General Plan applies to the unincorporated area of the county. San Diego County is approximately 2.9 million acres of which 2.3 million acres are unincorporated areas. 65 percent of the unincorporated areas are either tribal, state, federal or military lands and therefore the County has land use jurisdiction over only approximately 35 percent of the unincorporated area. The General Plan is the County's long-term blueprint for the vision of the future of the County and addresses, environmental sustainability, infrastructure, housing, and economic vitality among others important topics.

The San Diego County General Plan does not have direct land use authority in the City of Vista; however, it is important to understand and coordinate land use efforts to provide compatible land use patterns and development. This is particularly important for Vista as there is over 4,668 acres of County land within Vista's SOI, which has the potential to be annexed into the City in the future. Additionally, County policy decisions may have effects on local jurisdictions, and will be important to consider during Vista's General Plan Update.

3.6 Community Character-Urban Design Patterns

Community character and urban design in Vista are formed by street, block, and lot patterns that vary across the city and contribute to its unique neighborhoods and distinct physical environments.

Downtown Core

In the core area of the City's Downtown, a compact, grid network of streets shapes some of the most regular blocks in the city, which can be seen in **Figure 3.7**. This regular pattern makes the core area more walkable because it results in small blocks with a fine grain and continuous diversity of buildings. The alignment and succession of blocks and lots along S. Santa Fe Avenue (from Civic Center Drive to the Vista Village Shopping Center) provide a good environment for development that is street-focused, transit-oriented, and mixed-use. This is also the area targeted with recent streetscape improvements, including noticeable roundabouts which add a unique element to the Downtown.

- Grid network of streets
- Regular blocks that measure as narrow as 130' and as wide as 1500'
- Compact lots as narrow as 18' or less
- Alleys in some locations
- Consistent storefronts with active street frontage
- Mixed-Use

Figure 3.7: Downtown Core – Street, Lot, and Block Patterns



Commercial Nodes

Beyond the core area of Downtown, Vista has several noticeable commercial nodes with distinct urban form patterns characterized by large "superblock" development with "big box" commercial stores and limited walkability, as illustrated in **Figure 3.8**. The commercial nodes of the city are auto centric, designed to drive in and drive out. They are served by one or two primary arterial roadways with surface parking facing the street and buildings pushed to the rear of the site. These areas provide good highway access and visibility, and they are often surrounded by single-family and multi-family residential development.

- Served by one to two primary arterial roadways
- Lack a distinguishable block pattern
- Auto-centric development with surface parking
- Large format buildings
- Single use centers

Figure 3.8: Commercial Nodes – Street, Lot, and Block Patterns



Hillside Residential

As one travels away from the Downtown and towards residential neighborhoods, the hilly topography of the city yields a unique pattern of curving streets, terraced lots, dead ends, and cul-de-sacs. **Figure 3.9** shows how development follows the slopes and canyons opportunistically, carving out irregular-shaped lots and homes with shifting orientations to the street, resembling a jigsaw puzzle of homes, gardens, fields, and yards. Connectivity in these residential areas is sometimes highly limited, and older neighborhoods often lack sidewalks, giving them a rural character that sometimes references Vista's agricultural past.

- Served by a spiderweb of streets that follow topography
- No distinguishable block patterns
- Irregular lots
- Auto-centric development
- Limited pedestrian amenities
- A mix of large and small properties
- Rural character

Figure 3.9: Hillside Residential – Street, Lot, and Block Patterns



Master-Planned Residential

While a majority of single-family residential follow the hillsides in a rural development pattern, a few master-planned communities exist in Vista. Perhaps the most prominent is the Shadowridge community. Typically, master-planned residential follows a more regular pattern of streets and lots and include sidewalks and amenities, such as recreation centers, parks, schools, and in the case of Shadowridge, a golf course, which is shown in **Figure 3.10**. As part of a singular development or phased development, master-planned residential communities often have homes with a consistent architectural style and theme.

- Looping streets
- Regular lot patterns
- Planned as one development or a phased development
- Consistent architectural styles or themes
- Amenities (such as a golf course, recreation center, park)

Figure 3.10: Master Planned Residential – Street, Lot, and Block Patterns



Industrial Business Park

Hard to miss, the southernmost section of the city is home to employment and industrial business park uses that form a distinct urban form pattern in the landscape of the city. This area is characterized by large-format buildings on large lots. Buildings range from less than 4,000 square feet to more than 200,000 square feet in size. Most are one to two stories in height and set back from primary streets with landscaped perimeters. **Figure 3.11** shows the massing of the industrial business park buildings in relation to the streets and blocks. The canyons, topography, and primary roads in the area create distinct subareas or business park "enclaves." The landscape also helps to screen many of the large buildings from primary streets in the area.

- Large format buildings on large properties
- Topography and landscape screen and break up the area into subareas
- 1-2 story buildings
- Auto centric with minimal to no sidewalks and pedestrian connections

Figure 3.11: Industrial Business Park – Street, Lot, and Block Patterns



3.7 Social Equity

3.7.1 Disadvantaged Unincorporated Communities (SB 244) /Environmental Justice

Senate Bill (SB) 244 (Government Code Section 65302.10) enacted in 2011 to address regional inequity and infrastructure deficits within Disadvantaged Unincorporated Communities (DUC). SB 244 requires cities and counties to consider the sewer, water, and structural fire protection service and infrastructure deficits of unincorporated communities in their long range planning in order to enhance and protect the public health and safety. SB 244 requires the City of Vista to determine whether there are any DUCs inside the City's SOI and outside the City limits boundary. A DUC is a fringe, island, or legacy community in which the median household income is 80 percent or less than the statewide median household income. A fringe community is an inhabited, unincorporated territory within the City's Sphere of Influence (SOI). An island community is any inhabited and unincorporated territory that is surrounded or substantially surrounded by one or more cities or by one or more cities and a county boundary. A legacy community is a geographically isolated community that is inhabited and has existed for at least 50 years.

CalEnviroScreen, the primarily tool used for compliance with SB 244 that addresses DUC proximity and exposure to pollution levels, in addition to drivers of social vulnerability, did not identify any disadvantaged island, fringe, or legacy communities inside City boundaries or near within the City's SOI. While there are no DUCs within the City's limit boundary or SOI as shown in **Figure 3.12**, it is important to note that an analysis of Median Household Income within the City as shown in **Figure 3.13**, identifies portions of the City north of Vista Way, Vista Village Drive and between Bobier Drive and East Vista way as "Low-Income" communities, defined as 80 percent of the County's Median Household Income.

Figure 3.12: CalEnviroScreen

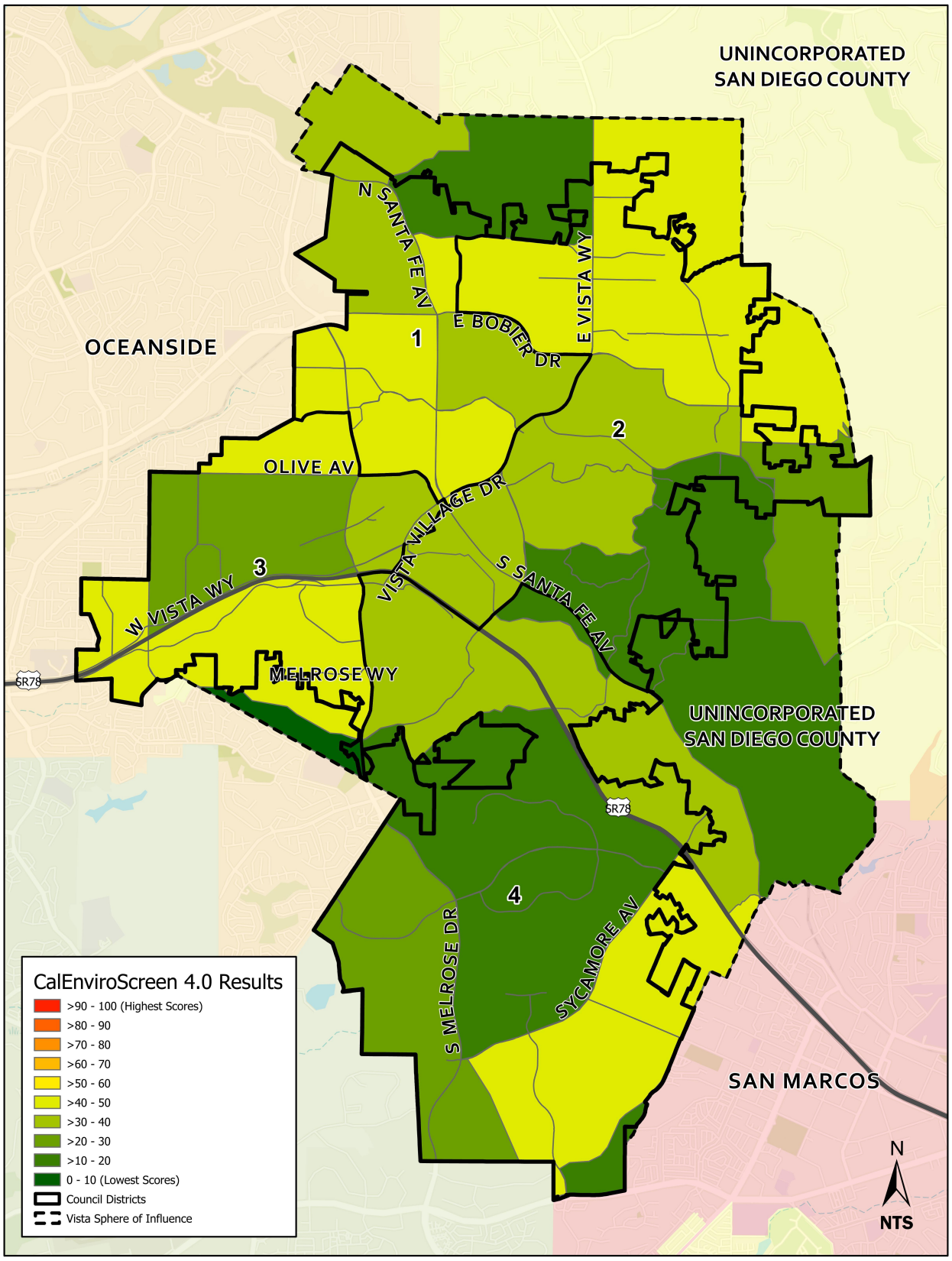
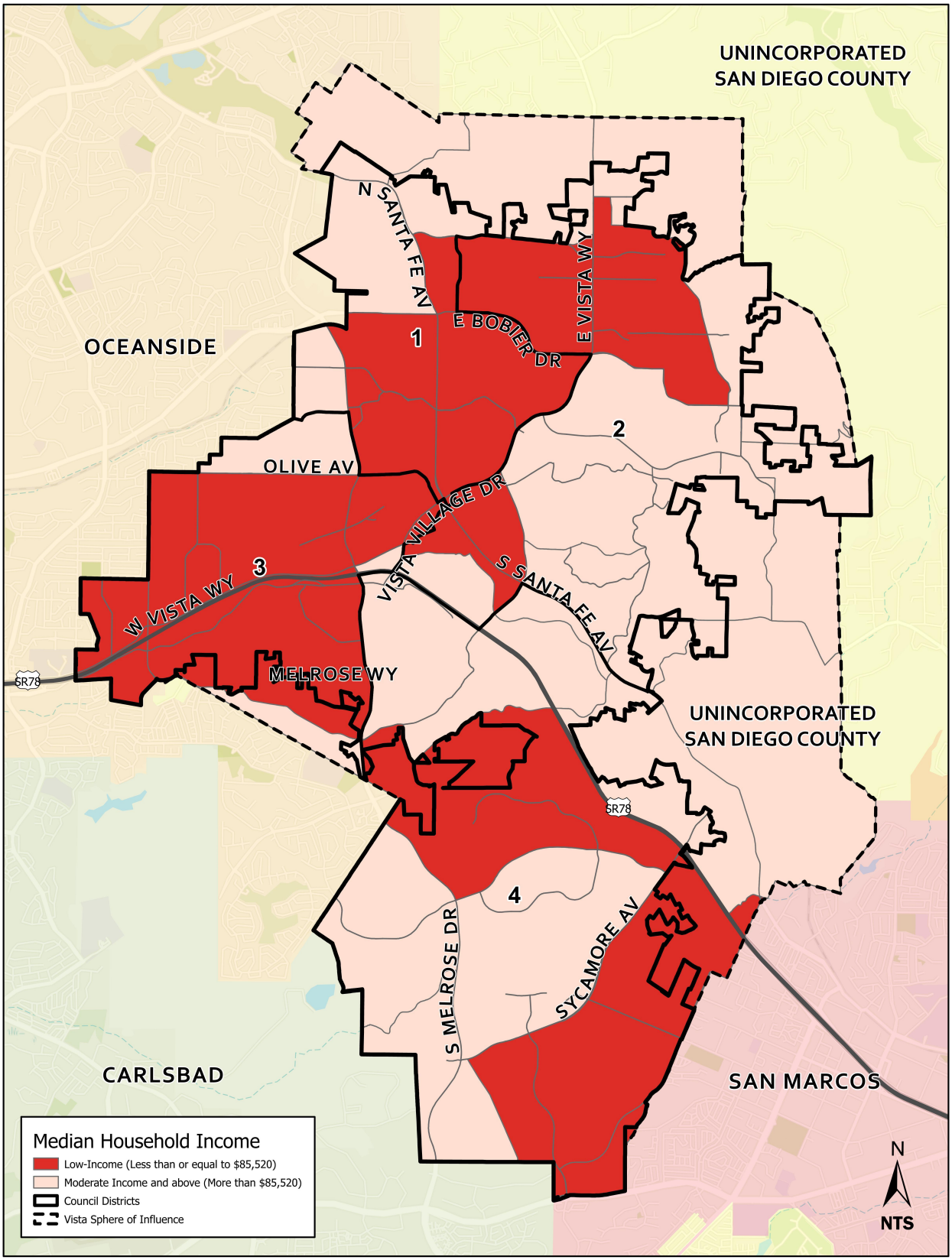


Figure 3.13: Low Income Communities

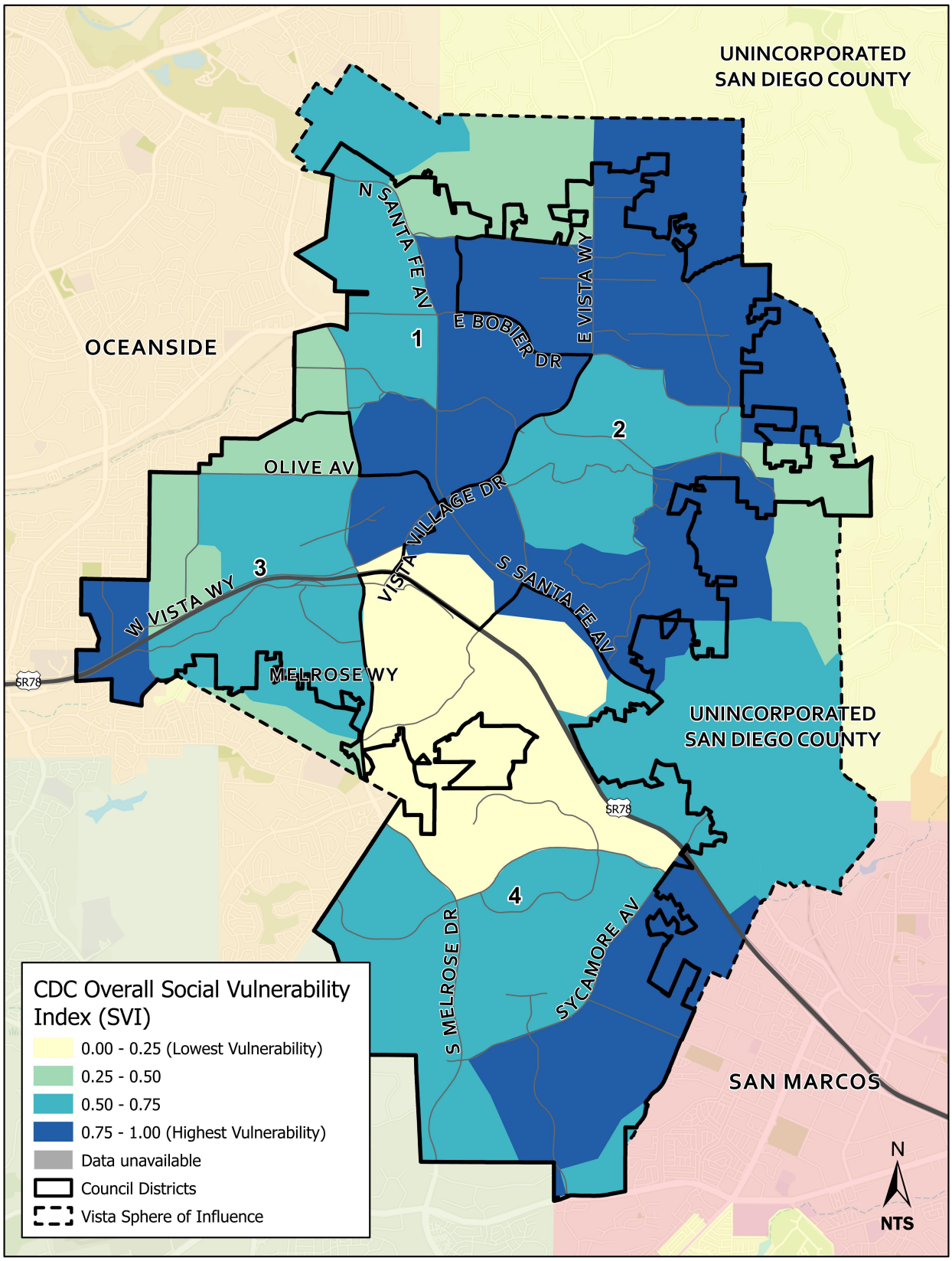


3.7.2 Social Equity Considerations

Chronic diseases, such as heart disease, cancer, and cerebrovascular diseases (including hypertension and stroke), are the leading causes of death and disability in the United States. According to the Centers for Disease Control (CDC), chronic diseases account for 70 percent of all deaths in the U.S., and also cause major limitations in daily living for almost one out of 10 Americans (CDC 2009a). Even with the significant advances in medicine over the past several decades, the incidence of chronic diseases has worsened.

The CDC Social Vulnerability Index (SVI) which refers to the potential negative effects on communities caused by external stresses on human health serves is an important indicator to distinguish census tracts in the region. The SVI considers socioeconomic, household composition and disability, minority status and language, and housing and transportation stresses. SVI rankings are based on percentile values ranging from 0 to 1, with higher values indicating greater vulnerability. As shown in **Figure 3.14**, the SVI identifies a range of vulnerability within the SOI with areas of low vulnerability within the central areas of the City north and south of SR-78 and areas of high vulnerability concentrated primarily in the northern portion of the City around Vista Village Drive, East Bobier Drive, and East Vista and in the southeastern portion of the City south of Sycamore Avenue.

Figure 3.14: CDC Social Vulnerability Index



3.8 Key Terms

The following key terms used in this chapter are defined as follows:

Annexation: The process by which land is incorporated into an existing district or municipality, with a resulting change in the boundaries of the annexing jurisdiction.

Community Character: Community character is the essence of a place, as shaped by physical and intangible elements.

Density: The number of permanent residential dwelling units per acre of land. Densities specified in the existing General Plan are expressed in units per gross acre.

Development Code: The adopted zoning, subdivision, and planning regulations of a city or county that establish development standards for each zone, such as minimum lot size, maximum height of structures, building setbacks, and yard size.

Dwelling Unit: A room or group of rooms (including sleeping, eating, cooking, and sanitation facilities, but not more than one kitchen) that constitutes an independent housekeeping unit, occupied or intended for occupancy by one household on a long-term basis.

Floor Area Ratio (FAR): The relationship between the total amount of usable floor area of a building and the total area of the building site.

General Plan: A document designed to guide the future growth and change of a city, town, or county and typically includes a vision for the future, with long-range goals, policies, and programs for all activities that affect the local agency.

Land Use Designation: A specific geographic designation with associated land use or management policies and regulations.

Land Use Regulation: A term encompassing the regulation of land in general and often used to mean those regulations incorporated in the general plan, as distinct from zoning regulations (which are more specific).

Local Agency Formation Commission (LAFCo): A commission within each county that reviews and evaluates all proposals for formation of special districts, incorporation of cities, annexation to special districts or cities, consolidation of districts, and merger of districts with cities. The San Diego County LAFCo is empowered to approve, disapprove, or conditionally approve such proposals.

Mixed Use: Parcels of land on which a variety of uses such as office, commercial, institutional, and residential are combined in a single building or on a single site in an integrated development project with a coherent physical design.

Specific Plan: A planning tool authorized by Government Code Section 65450, et seq., for the systematic implementation of the general plan for a defined portion of a community's planning area. A specific plan must specify in detail the land uses, public and private facilities needed to support the land uses, phasing of development, standards for the

conservation, development, and use of natural resources, and a program of implementation measures, including financing measures.

Sphere of Influence: An area that includes the probable ultimate physical boundaries and service area of the City of Vista.

City Limits: A political boundary that defines land that has been incorporated into the city.

Zoning: The division of a city into districts and the application of different regulations in each district.

3.9 References

City of Vista General Plan, 2011

City of Vista, Downtown Specific Plan, 2015

City of Vista, Development Code, published 2000

City of Vista, City Council 2022-2024 Goals, March 22, 2022

City of Vista Design Guidelines, revised 2017

Google Earth. 2022. Digital maps and images.

San Diego County General Plan, 2011

SANDAG 2021 Regional Plan

4.0 CIRCULATION AND TRANSPORTATION

4.1 Introduction

4.1.1 Study Background and Purpose

The City of Vista is updating the General Plan to establish a current long-range vision for the City and to plan for important community issues, such as new growth, housing and mobility needs, public services, and environmental protection. The Mobility Element – previously referred to as the Circulation Element – is one of the required "elements" or chapters that will go into the General Plan.

This Existing Conditions Report is one of the initial steps in the Mobility Element planning process. It serves to document the current state of transportation and circulation within the City of Vista and identify needs. The report provides assessments of pedestrian, bicycle, transit, and vehicular mobility. The analysis covers network connectivity, demand, quality, and safety for each travel mode. Additional topics covered in this report include existing intelligent transportation systems, transportation demand management techniques, as well as goods movement.

4.1.2 Planning Process

Existing mobility issues, needs, and opportunities identified in this Existing Conditions Report will be further informed by input from community members and direction from city staff. Anticipated future land use alternatives will be used to forecast future traffic volumes. Collectively, this information will be used to identify transportation network alternatives intended to accommodate the anticipated growth while providing for enhanced mobility for each travel mode. The preferred transportation networks will then be derived through the analysis of future year conditions and additional community input.

4.1.3 Relevant Document Review

Reviewing recent relevant planning documents, studies and guiding policies greatly informs the planning process as it helps to build an understanding of existing issues and opportunities, as well as any planned improvements. The Mobility Element is intended to complement and modernize many of the foregoing planning efforts by incorporating and/or aligning with the recommendations, goals and policies previously set forth.

The review covers the following City of Vista documents:

- Climate Action Plan (2021)
- Local Roadway Safety Plan (2021)
- Traffic Calming Program (2021)
- Traffic Congestion Management Plan (2020)
- Transportation Impact Analysis Guidelines (2020)

- Bicycle Master Plan (2015)
- 2013 – 2021 Housing Element (2013)
- General Plan Circulation Element (2012)

The following regional documents are also included:

- SANDAG's 2021 Regional Plan (2021)
- Innovate 78 – Regional Profile (2019)
- SANDAG Smart Growth Concept Map (2016)

The full document review is provided as **Appendix B.**

4.1.4 Regulatory Setting

Since the City's last comprehensive General Plan Update, a major key state legislative action, Senate Bill 743 (SB 743) – Environmental Quality, has been adopted that redefines the way transportation-related impacts are identified.

SB 743 was signed into law in September 2013, making several changes to the California Environmental Quality Act (CEQA). This bill removes vehicular delay, level of service (LOS), parking and other vehicular capacity measures as metrics of transportation system impacts for mixed-use, infill or transit-oriented development projects. Vehicle miles traveled (VMT) is considered the new analysis metric used to measure transportation impacts. VMT reflects the automobile distance attributable to a project. The intent is to balance the needs of congestion management with statewide goals related to infill development, active transportation and transit use, and the reduction of greenhouse gas emissions. Consistent with state mandates, the City of Vista adopted the Traffic Impact Analysis Guidelines in December 2020.

These guiding policies and documents emphasize the need for enhanced transportation networks that serve all travel modes, decrease reliance on single vehicle trips, and are closely tied to existing and planned development patterns. Building on these efforts, the current General Plan Update is a comprehensive process that will provide for consistent and integrated land use and transportation planning. The Circulation and Transportation Element will identify goals, policies, programs, and infrastructure recommendations to improve multimodal mobility and accommodate anticipated growth. The Circulation and Transportation Element will ensure the City is eligible and competitive for a variety of funding sources by complying with regional, state, and federal guidance and trends.

Another important state legislative action, Assembly Bill 1358 (AB 1358) – Complete Streets Act, was signed into law in September of 2008 and took effect on January 1, 2011. AB 1358 requires city or county legislative bodies to plan for a balanced, multi-modal transportation network that meets the needs of all users of streets, roads, and highways. "All users" is defined to include motorists, pedestrians, bicyclists, children, persons with disabilities, seniors, movers of commercial goods, and users of public transportation, in a manner that is suitable to the rural, suburban, or urban context of the general plan. While the 2012

Circulation Element touched on Complete Streets, this Update will take a more comprehensive approach and make Complete Streets front and center throughout the mobility planning process.

Efforts at the regional level have embraced the sustainable and multimodal transportation emphasis directed by these legislative actions. The San Diego Association of Governments (SANDAG) is responsible for developing the San Diego region's SCS. The SCS consists of the following five building blocks:

- A land use pattern that accommodates our region's future employment and housing needs and protects sensitive habitats and resource areas.
- A transportation network of public transit, Managed Lanes and highways, local streets, bikeways, and walkways built and maintained with reasonably expected funding.
- Managing demands on the region's transportation system (also known as Transportation Demand Management, or TDM) in ways that reduce or eliminate traffic congestion during peak periods of demand.
- Managing region's transportation system (also known as Transportation System Management, or TSM) through measures that maximize the overall efficiency of the transportation network.
- Innovative pricing policies, and other measures designed to reduce the number of miles people travel in their vehicles, as well as traffic congestion during peak periods of demand.

SANDAG's 2021 Regional Plan reflects the new regional vision and further encourages sustainable development, including transportation infrastructure that supports future development patterns and helps to achieve regional greenhouse gas reduction goals set by the California Air Resources Board. The Regional Plan also addresses compliance with federal civil rights requirements (Title VI), environmental justice considerations, air quality conformity, and public participation. Addressing these requirements ensures the region complies with federal laws and maintains eligibility for a variety of funding sources.

The *5 Big Moves* are at the heart of the 2021 Regional Plan vision. These key strategies envision a balanced transportation network that leverages technology to create safe, efficient, and socially equitable transportation system that increases access to opportunity and helps achieve environmental mandates. Aligning with the Regional Plan vision will help position Vista to compete for grant funds and leverage regional investments. The *5 Big Moves* consist of the following concepts:

- ***Complete Corridors*** provide a variety of travel choices and use technology to manage how highways and major roads are used in real time. They provide a balance of dedicated, safe space for everyone, including freight vehicles and people who walk, bike, drive, ride transit, and use Flexible Fleets.

- ***Transit Leap*** could create a complete network of fast, high-capacity, high-frequency transit services that connect major residential areas with employment centers and attractions throughout the San Diego region.
- ***Mobility Hubs*** are places of connectivity where different travel options come together. They provide an integrated suite of mobility services, amenities, and supporting technologies to better connect high-frequency transit to an individual's origin or destination.
- ***Flexible Fleets*** build on the popularity of shared mobility services such as on-demand rideshare, bikeshare, and scootershare. These services can make it easier to connect to high-speed transit and other important destinations by providing a last-mile connection.
- ***Next Operating System (OS)*** is a digital platform that uses technology and data to connect and manage different modes of transportation to improve overall efficiency and accessibility for people and goods to move throughout the region.

The City's current General Plan was adopted in 2012 and it identified the following challenges, opportunities, and transportation issues that are still relevant today:

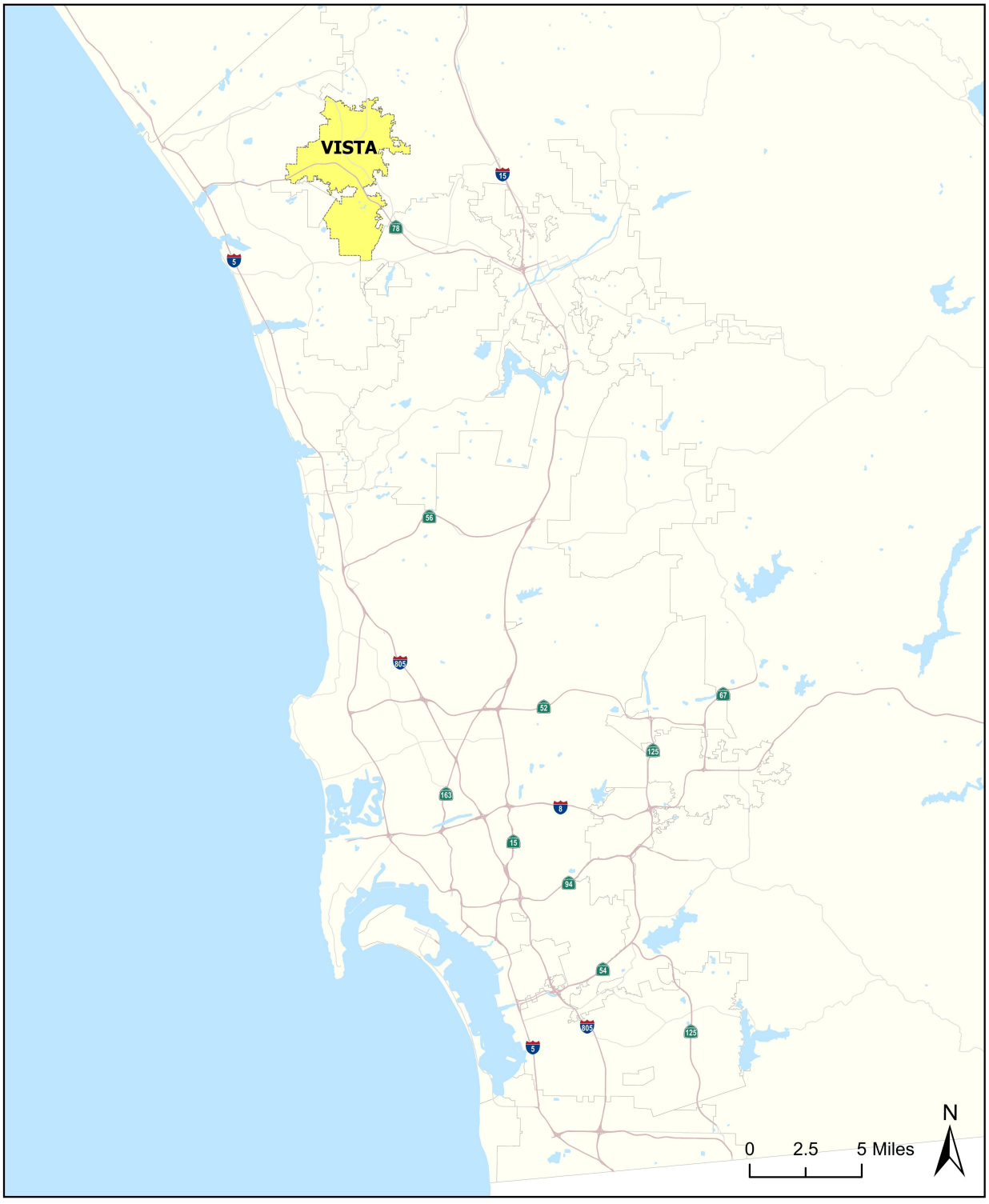
- Enhancing the City's corridors for all modes of transportation to meet the needs of the community through careful design of and attention to linkages between neighborhoods, schools, parks, employment center, and activity nodes.
- Improve the safety and efficiency of existing transportation facilities.
- Support a regional transportation system that serves existing and future travel between Vista and other population and employment centers in North San Diego County and the larger region.
- Increasing support of alternatives to driving alone during peak periods, such as carpooling, vanpooling, bicycling, telecommuting, flexible work hours for employees, and Transportation Demand Management programs.

4.2 Community Profile

Vista is situated in northern San Diego County just seven miles inland from the Pacific Ocean. It's bordered by the cities of Carlsbad and Oceanside to the west, northwest and southwest, San Marcos to the southeast, and unincorporated San Diego County to the north and east. **Figure 4.1** displays the City's location within the region. Vista encompasses approximately 19 square miles and is home to a diverse population of more than 100,000 residents.

This chapter provides an overview of the City of Vista's demographics and commuter information. The purpose of this chapter is to review census data and to look more closely at who lives in Vista and how they travel.

Figure 4.1: Vista's Regional Location



4.2.1 Demographic Summary

Population and employment densities, age groups, vehicle ownership, as well as median household income are described within this section. Locations where people live and work are important considerations in the planning process. Trips frequently start from – or are generated from – residences. Trips commonly end at places of employment, or destinations such as parks, schools, retail centers, and civic uses. Determining where higher concentrations of residential and employment land uses can help develop an understanding of travel behavior.

Population and Employment Density

Figure 4.2 displays population density by census block group within Vista. The highest population density is shown along the east side of N. Santa Fe Avenue between Townsite Drive and Main Street, as well as north of Foothill Drive between Oak Drive and Bonair Road.

Figure 4.3 presents the number of jobs per acre by census block group for all employees, regardless of City of residence. The highest employment density area is located at the south of the City, in the industrial area enclosed by S. Melrose Drive, Sycamore Avenue, Hibiscus Avenue, and Poinsettia Avenue. The second highest employment density area is in Downtown Vista where retail and restaurants are located. Finally, there is an employment area located west of Cedar Road where a high concentration of medical offices and Vista Knoll Specialized Care are located.

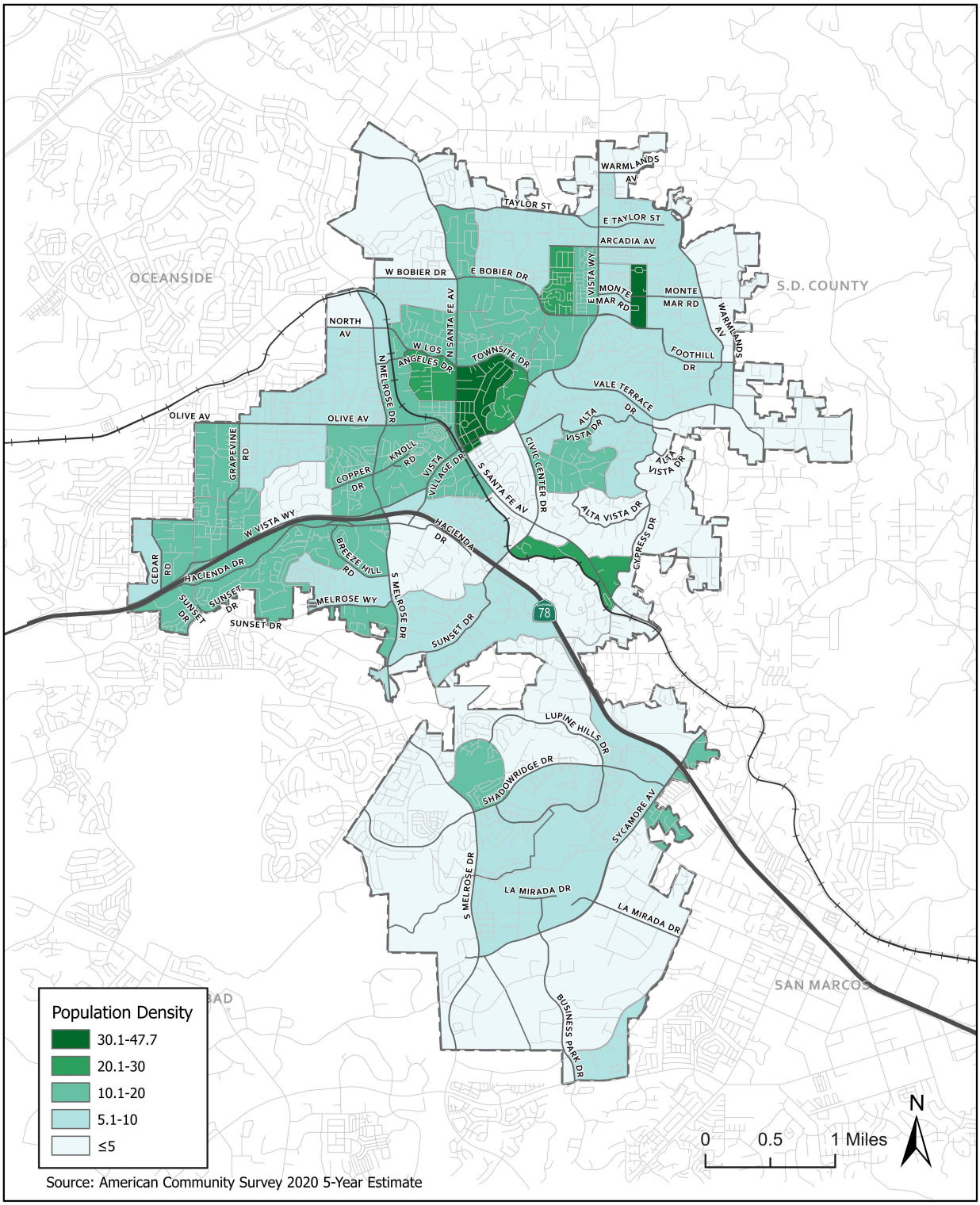
Youth and Senior Populations

Of the 100,659 residents reported in the 2020 US Census, approximately 25,216 residents were under the age of 18, and 10,722 residents over the age of 65. Youth and senior populations are considered vulnerable roadway users due to their limited mobility options and relatively greater reliance on alternative transportation and infrastructure. Because of this they require additional consideration when planning transportation networks.

Figure 4.4 displays the percentage of youth per census block group. Youth population spreads across city's residential areas. The census block groups with the highest percentage of youth are in the southwestern portion of the City, in the residential areas surrounding Rancho Buena Vista High School, as well as, in the north of the City in areas surrounding Murray High School and the Vista Transit Center.

Figure 4.5 displays the percentage of seniors per census block group. The highest percentage of senior citizens is in the south portion of the City. Census block groups with elevated percentages of seniors are located in southern Vista surrounding the Shadowridge Golf Club, as well as near mobile home parks in the southwestern corner of the City and in the northeast quadrant of the intersection of E. Vista Way and Foothill Drive.

Figure 4.2: Population Density by Census Block Group



Source: American Community Survey 2020 5-Year Estimate

Figure 4.3: Employment Density by Census Block Group

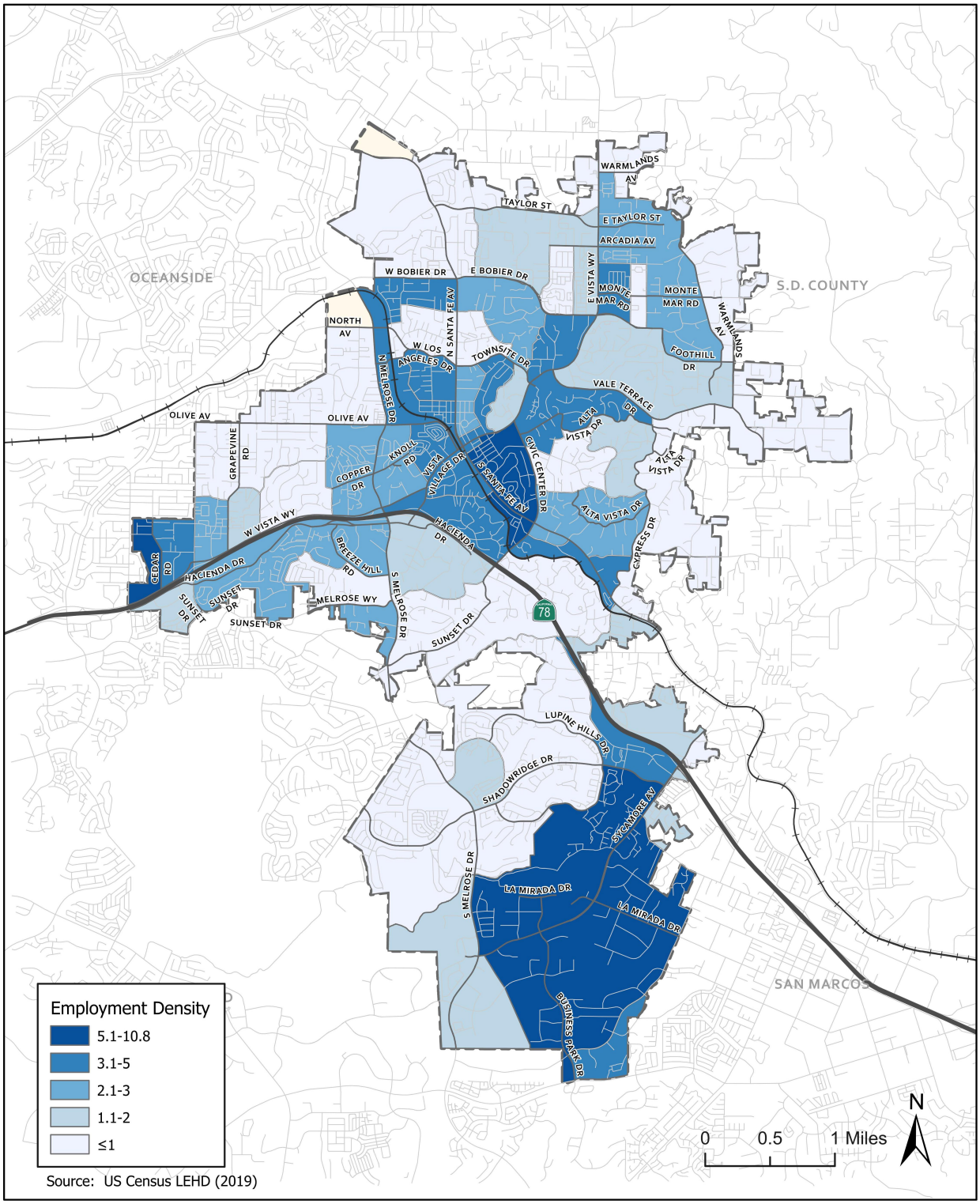
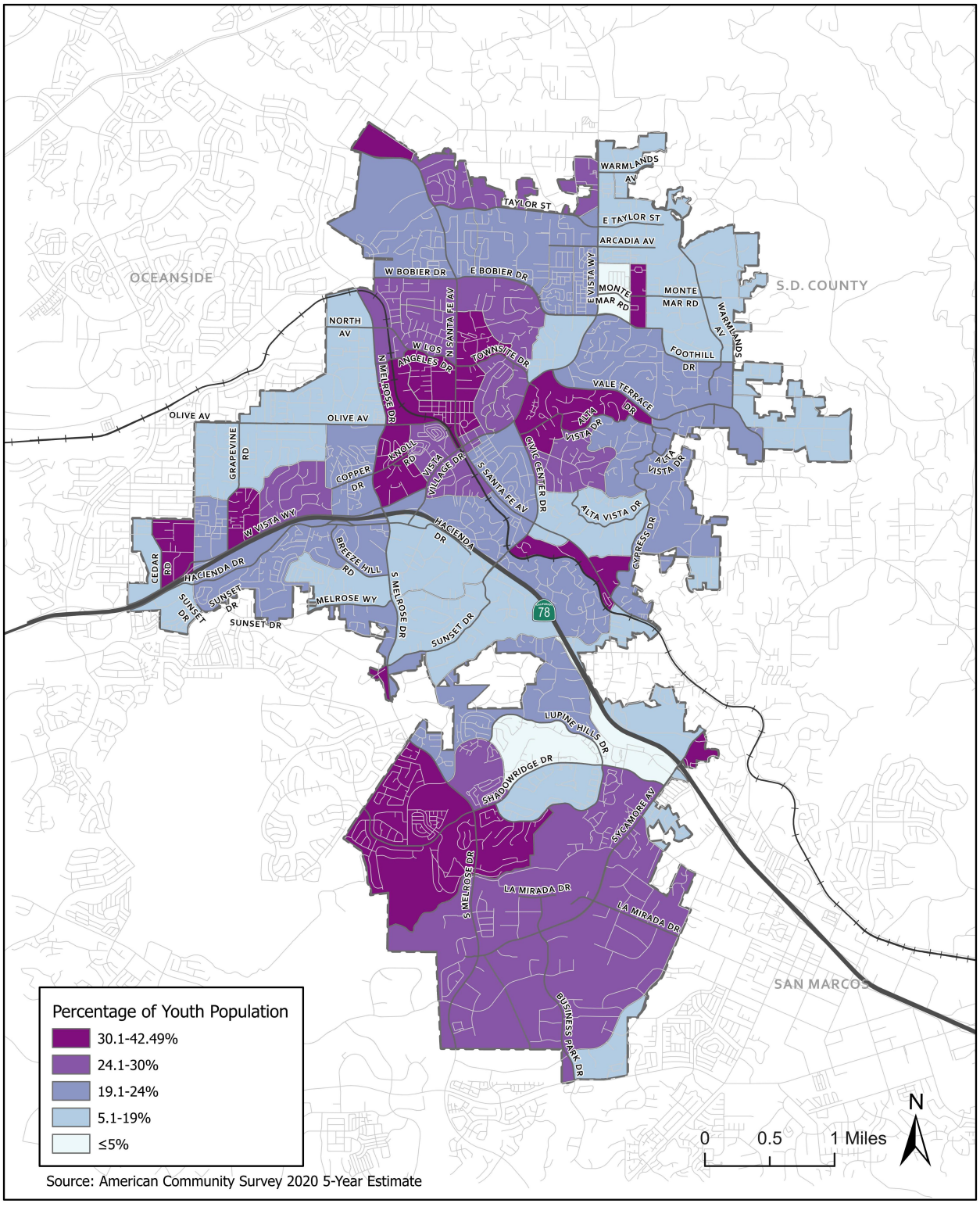
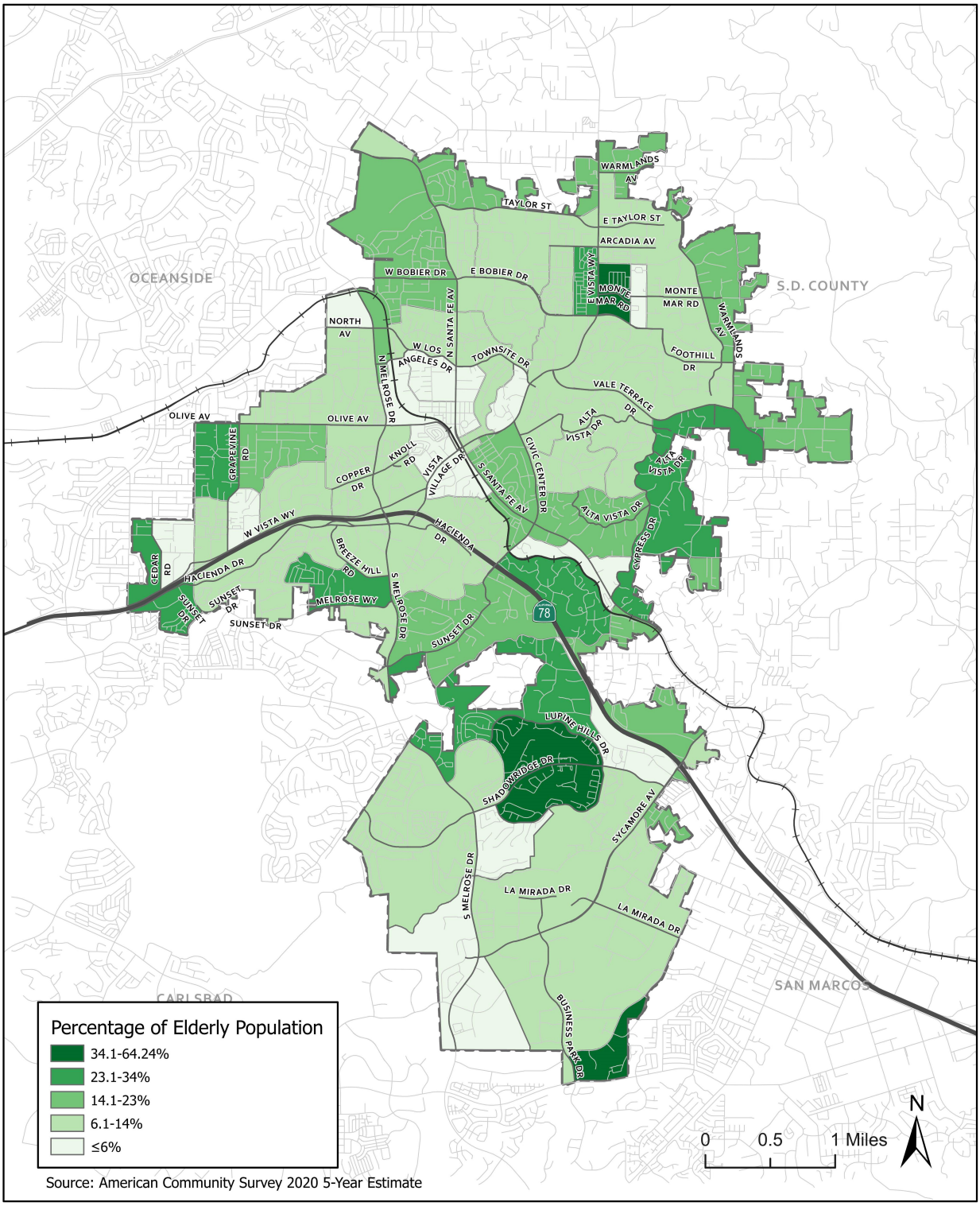


Figure 4.4: Youth Population by Census Block Group



Source: American Community Survey 2020 5-Year Estimate

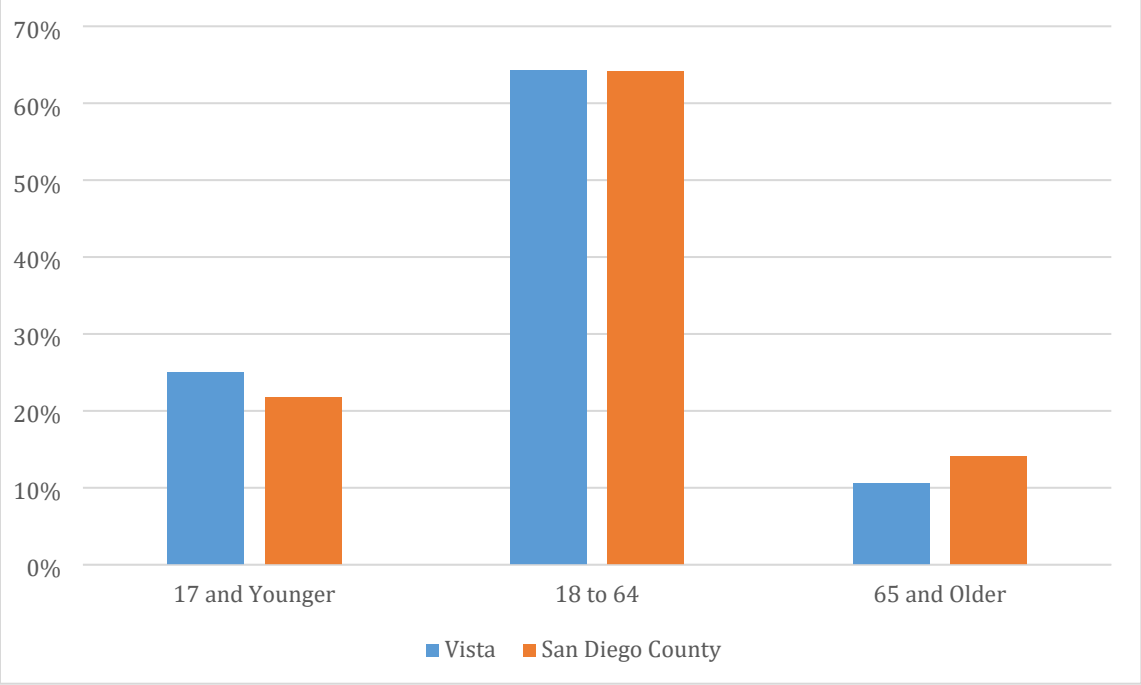
Figure 4.5: Senior Population by Census Block Group



Source: American Community Survey 2020 5-Year Estimate

Figure 4.6 presents a comparison of the populations for Vista and San Diego County by age group. All age brackets track relatively close to each other. Approximately 25 percent of Vista's population is 17 and younger whereas that demographic makes up approximately 22 percent of San Diego County's population. Both Vista and San Diego County have approximately 64 percent of their population who are between the ages of 18 and 64. Approximately 11 percent of Vista's population vs. 14 percent of the County's population fall within the 65 and older age group.

Figure 4.6: Population by Age Group – City of Vista and San Diego County

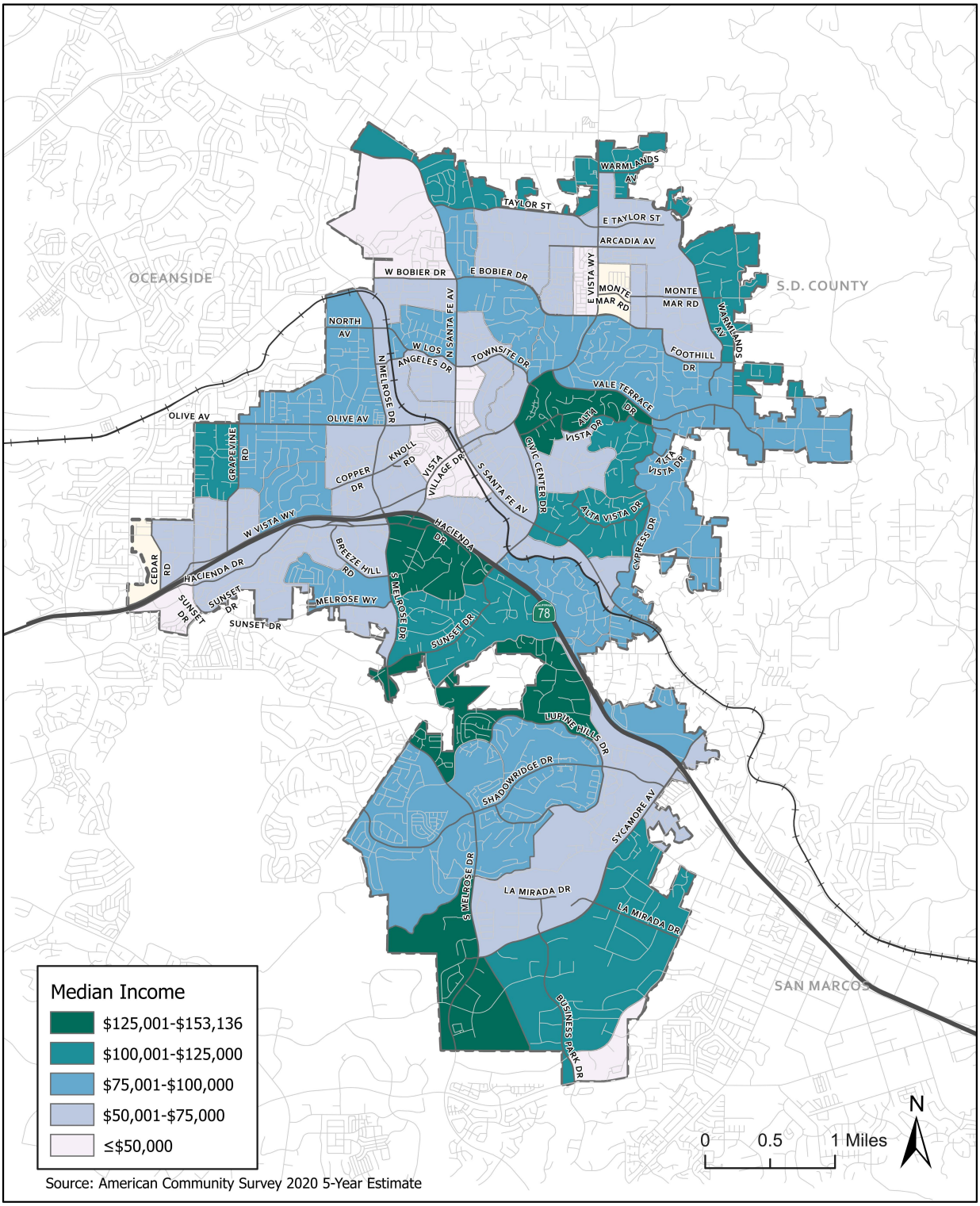


Source: American Community Survey 5-Year Estimate (2020)

Median Household Income

Figure 4.7 shows median household income by census block group. Median household income levels vary greatly across the City, reflecting a diverse population. The income groupings depicted are well-dispersed, without concentrations of relatively higher or lower levels in any specific area.

Figure 4.7: Median Household Income by Census Block Group



Source: American Community Survey 2020 5-Year Estimate

Zero Vehicle Households

A well-considered multimodal mobility network serves the needs of all users, regardless of age, ability and socio-economic class. Access to a vehicle can often be an indicator of social equity. **Table 4.1** below shows vehicle availability for households in Vista. Approximately 4.6 percent of households in Vista are zero-vehicle households. This equates to approximately 1,411 households.

Table 4.1: Vehicle Availability by Household

Vehicles Available	Households	% of Total
No Vehicle Available	1,411	4.6%
1 Vehicle Available	8,447	27.3%
2 Vehicles Available	12,609	40.8%
3 or more Vehicles Available	8,450	27.3%
Total Occupied Household Units	**30,917**	**100%**

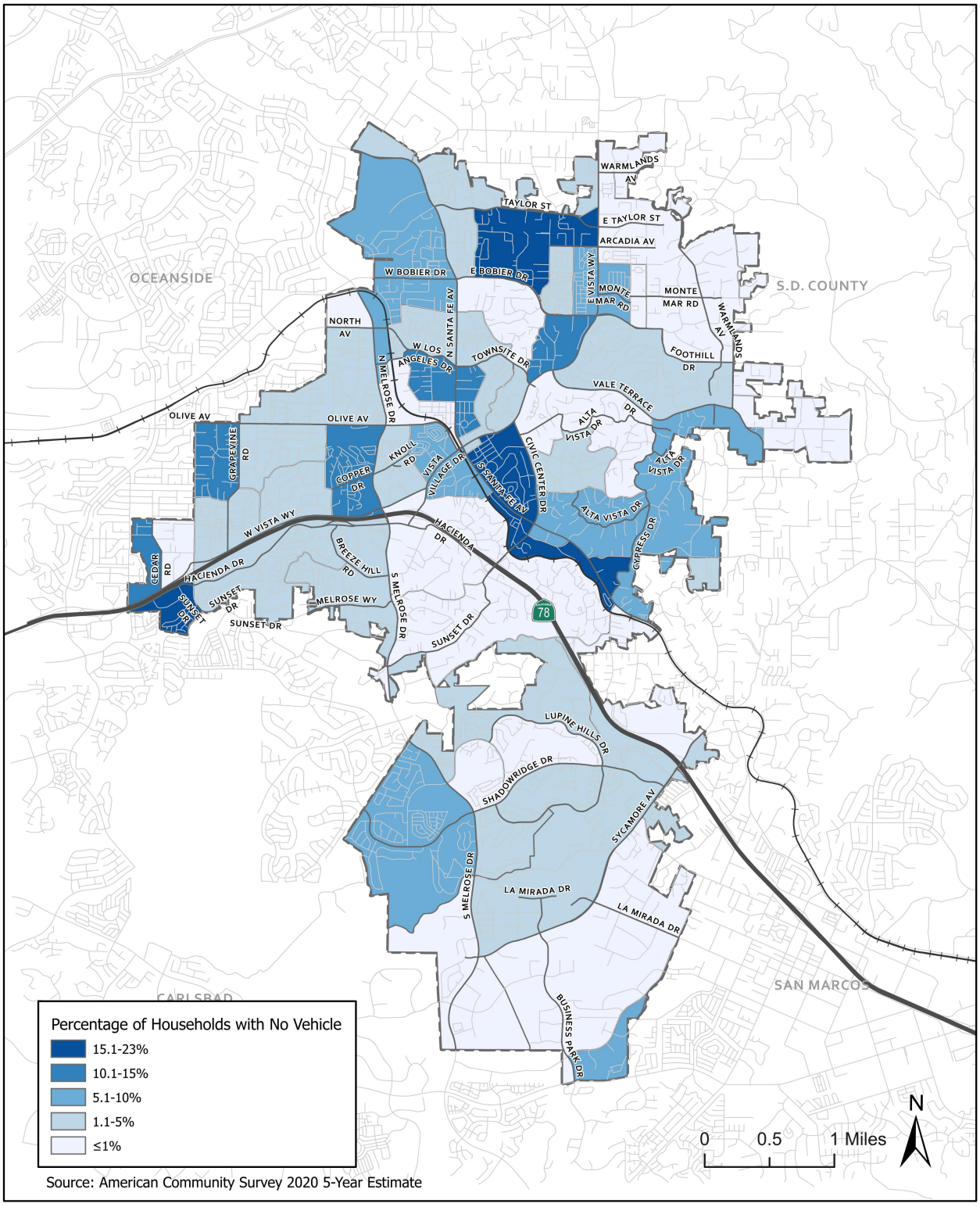
Source: US Census, 2020 American Community Survey 5-Year Estimates (2022)

Figure 4.8 shows where census block groups with higher percentages of households without vehicles are located. There are a few census block groups with elevated percentages of zero vehicle households which overlap with census block groups with higher percentages of low median household income areas (Figure 4.7).

4.2.2 Commuter Profile

Examining the existing commuter patterns of residents and employees provides a deeper understanding of how people travel, and in turn, will inform the development of transportation-related recommendations.

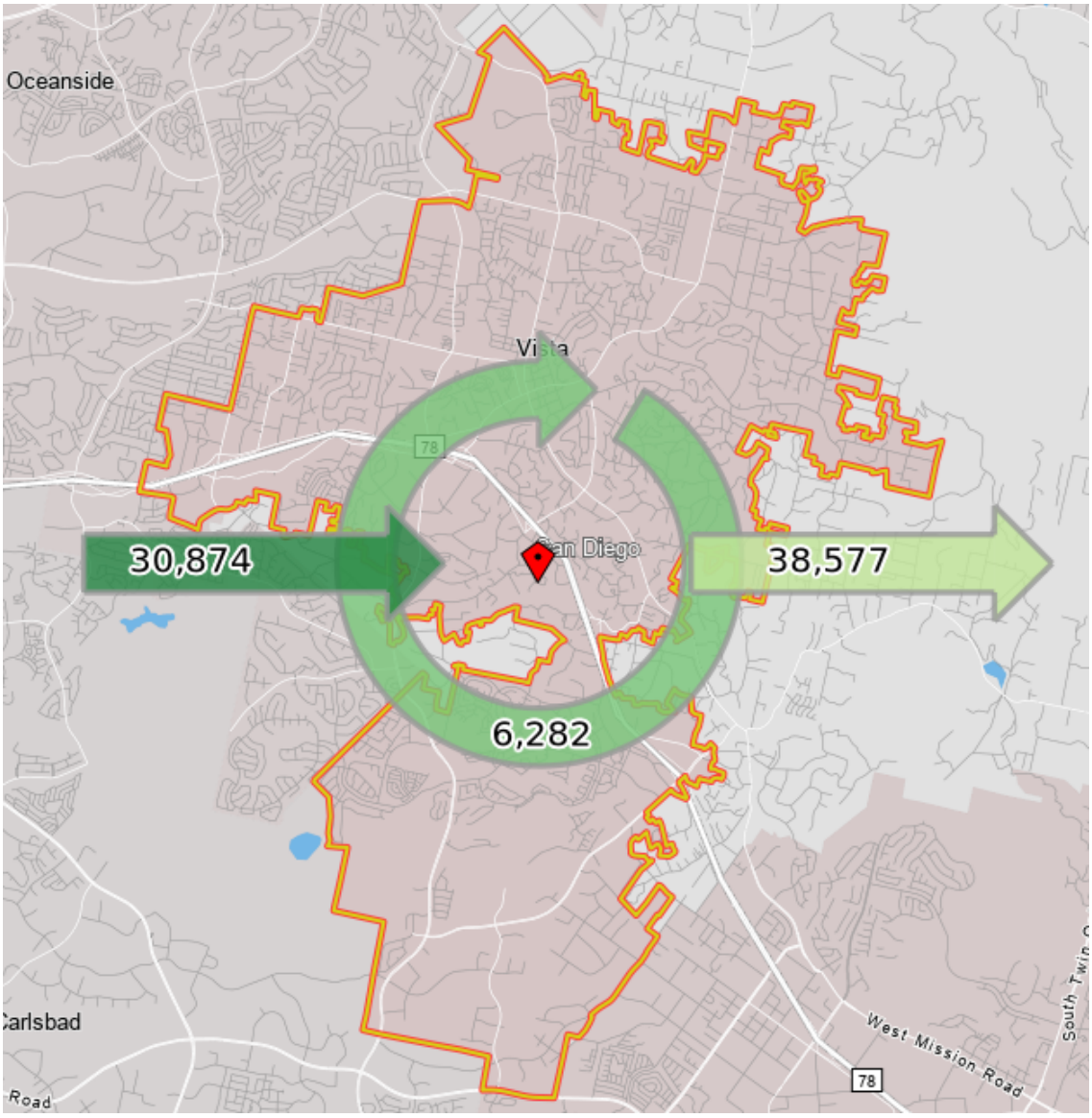
Figure 4.8: Zero Vehicle Households by Census Block Groups



Source: American Community Survey 2020 5-Year Estimate

Figure 4.9 shows the estimated number of persons (30,874) who live outside the City of Vista but are employed within the City limits, the number of employed persons (38,577) who live in Vista but work outside of the City limits, and the number of employed persons (6,282, just over 8 percent) who both live and work in the City of Vista using the 2020 US Census data.

Figure 4.9: Inflow/Outflow of Employees in Relation to the City of Vista



Source: US Census, 2020 American Community Survey 5-Year Estimates (2022)

Table 4.2 displays the distance residents in Vista travel for work. Approximately 50.7 percent of residents travel less than 10 miles to work. With appropriate infrastructure improvements, some of these trips can be potentially converted into active transportation and transit trips.

Table 4.2: Commute Distance for People that Live in Vista

Distance to Work	% of Residents
Less than 10 miles	50.7%
10 – 24 miles	17.9%
25 – 50 miles	13.7%
Greater than 50 miles	17.7%
Total	**100%**

Source: US Census, 2020 American Community Survey 5-Year Estimates (2022)

Table 4.3 displays the distance people who work in Vista travel from their residences in adjacent communities. As displayed, 53.1 percent of people who commute to Vista for work, travel less than 10 miles.

Table 4.3: Commute Distance for People that Work in Vista

Distance to Work	% of Employees
Less than 10 miles	53.1%
10 – 24 miles	13.9%
25 – 50 miles	15.8%
Greater than 50 miles	17.2%
Total	**100%**

Source: US Census, 2020 American Community Survey 5-Year Estimates (2022)

Means of Transportation to Work (Commute Mode Share)

Table 4.4 compares means of transportation to work for the City of Vista, other SR-78 Corridor Cities, and San Diego County. Vista has higher rate of people who drove alone to work (81.9 percent) and lower rate of using public transportation when comparing to other SR-78 Corridor Cities and San Diego County. As for other rates such as active transportation, Vista has similar walk and bike to work rate as other SR-78 Corridor Cities, but lower than the county as a whole.

Table 4.4: Means of Transportation to Work

Means of Transportation to Work	Vista	SR-78 Corridor Cities	San Diego County
Drove Alone	81.9%	77.8%	63.6%
Carpooled	7.0%	8.6%	7.3%
Public Transportation	1.1%	1.8%	1.7%
Walked	1.6%	1.6%	3.2%
Bicycle	0.2%	0.3%	0.4%
Other	1.6%	2.3%	1.7%
Worked from Home	6.6%	7.6%	22.1%
Total	**100%**	**100%**	**100%**

Source: US Census, 2020 American Community Survey 5-Year Estimates (2022)

Figure 4.10 shows the percentage of Vista commuters who walk to work. One of the census block groups with the greatest percentage of walking commuters is located in the north portion of the City, south of Vale Terrace Drive and east of Vista Village Drive; the other one is located at the far south portion of the City, west of S. Melrose Drive and south of the Agua Hedionda Creek. The high percentages of commuters who walk to work in this census block may be due to the proximity to the many industrial and retail jobs along Sycamore Avenue and Business Park Drive.

Figure 4.11 shows the percentage of Vista commuters who bike to work. One of the census block groups with the greatest percentage of bicycle commuters is located just north of SR-78, surrounded by Civic Center Drive, S. Santa Fe Avenue and Vista Village Drive. This census block encompasses the Downtown Vista area with both residential and work opportunities. The other census block is located at the far south portion of the City, east of S. Melrose Drive and south of Sycamore Avenue and it is surrounded by industrial and retail jobs. Both census blocks provide proximity between residences and job concentrations which increases the potential and feasibility of trips by bike.

Figure 4.10: Percent of Commuters Who Walk to Work by Census Block Group

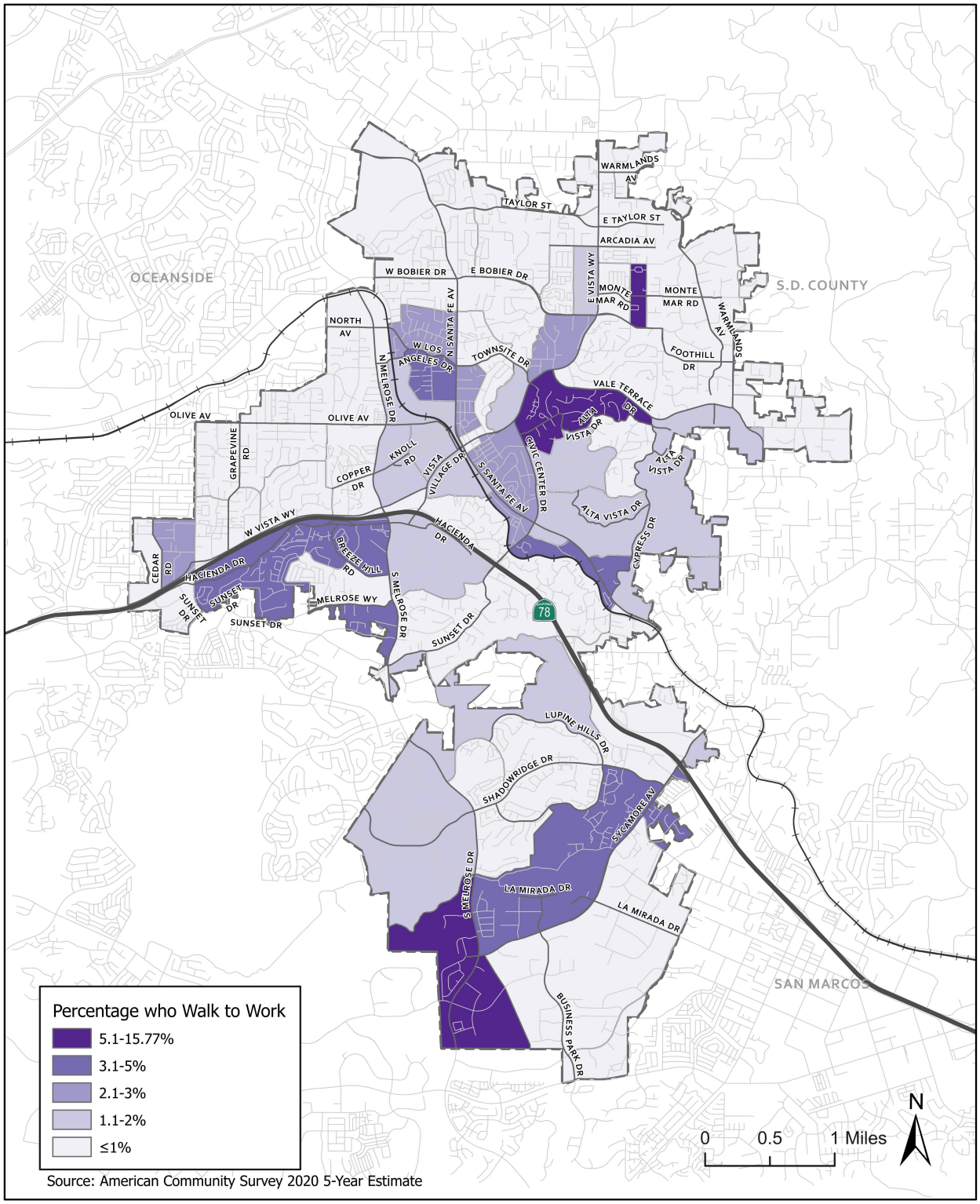


Figure 4.11: Percent of Commuters Who Bicycle to Work by Census Block Group

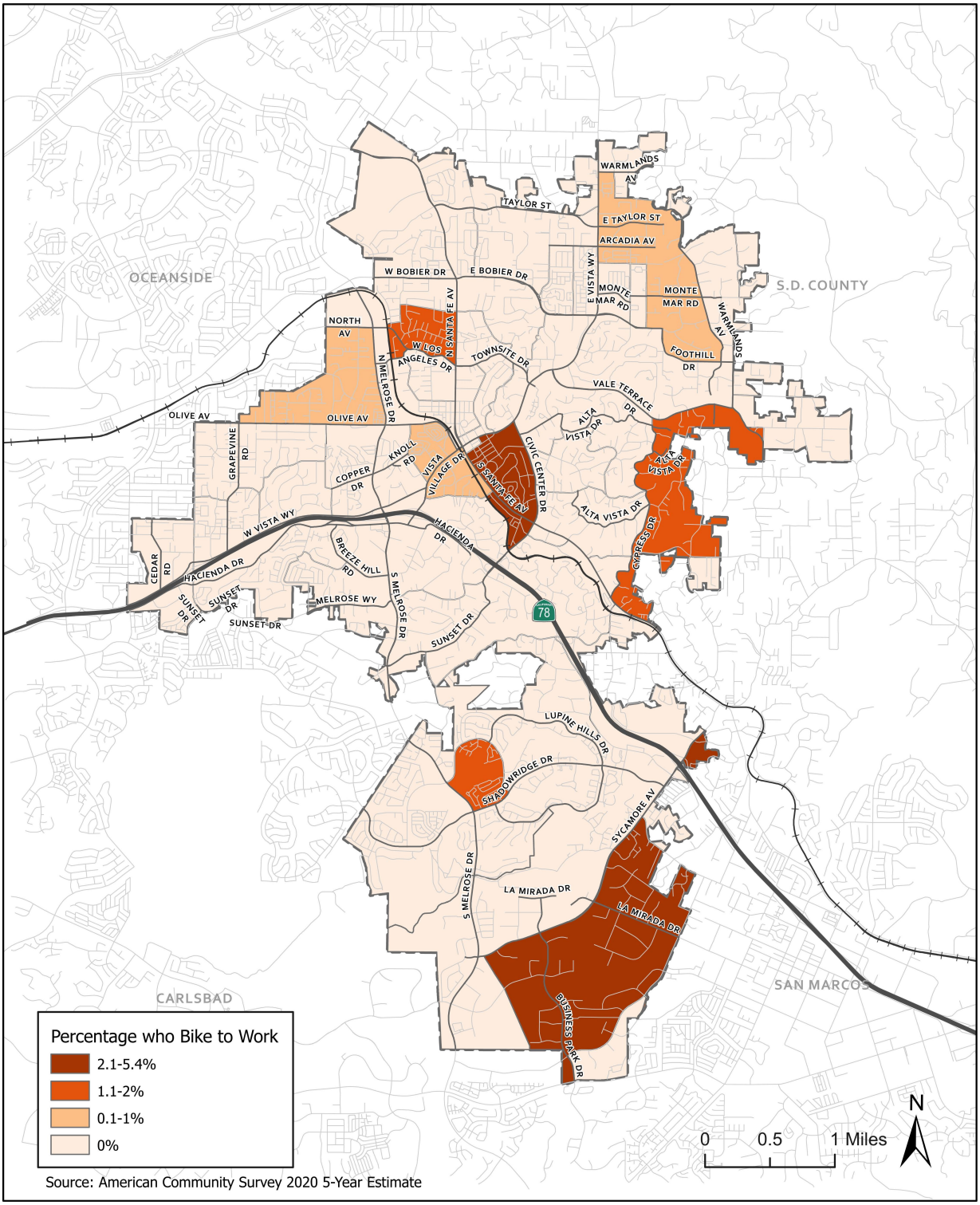


Figure 4.12 displays the percentage of commuters who take transit to work. Four of the highest transit commuter census block groups are directly adjacent or near Sprinter Stations (Melrose Drive and Buena Creek stations). These census block groups are within walking distance/biking of the transit routes. Also, there is an overlap between the census block group located immediately south of SR-78, south of Hacienda Drive and west of Sunset Drive, which has elevated percentages of transit commuters as well as elevated percentages of low median household income (Figure 4.7) and zero-vehicle households (Figure 4.8).

4.3 Analysis Methodology

This section describes the study area and the mobility network analysis methodologies employed throughout the existing conditions analysis.

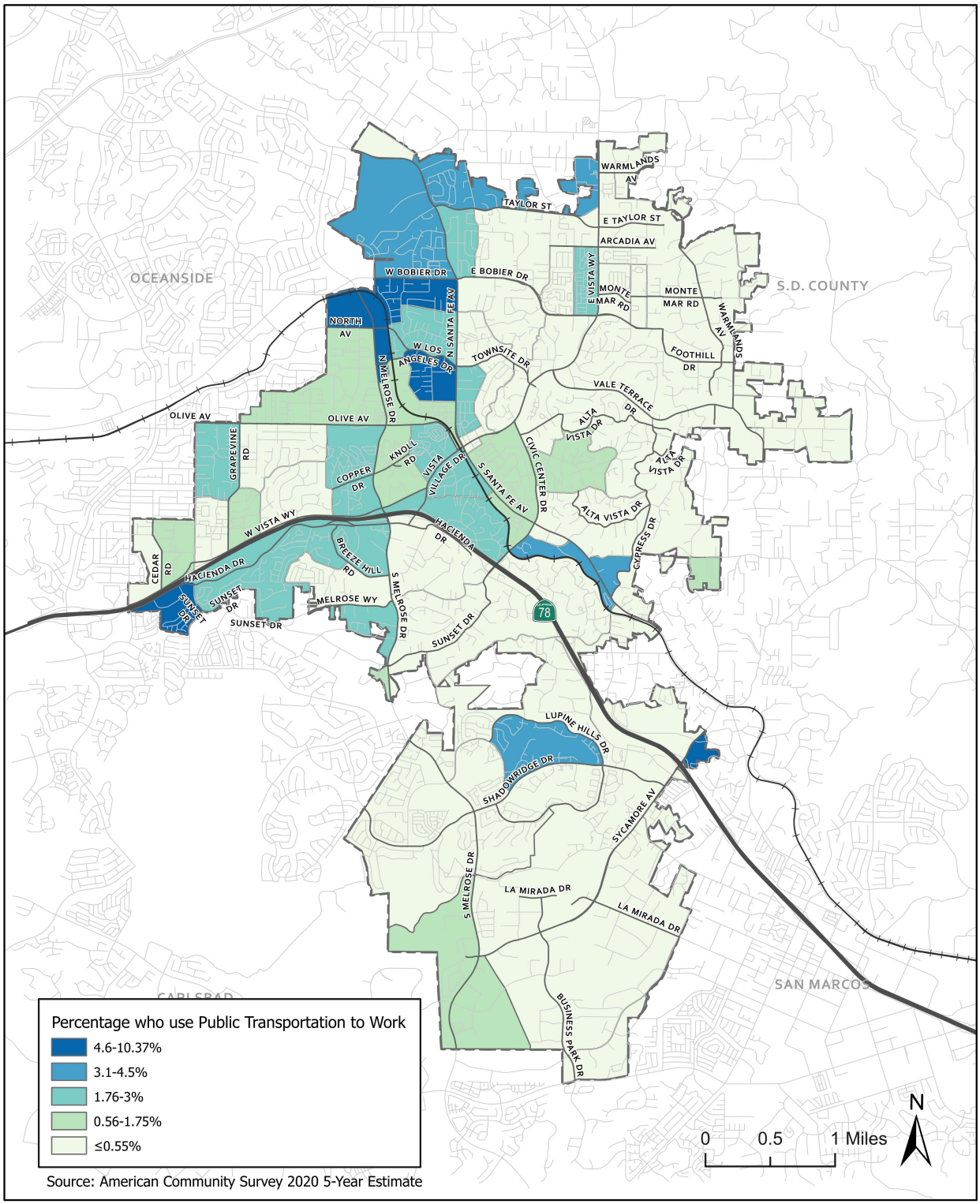
Table 4.5 summarizes performance measures used to evaluate each transportation mode, while the remaining sections of this chapter outline methodologies employed to analyze facility demand, network connectivity and quality, and safety associated with each of the four major modes of travel (pedestrian, bicycle, transit and auto) in the study area.

Table 4.5: Multimodal Performance Measures

Performance Measure	Pedestrian	Bicycle	Transit	Vehicular System
Connectivity	Sidewalk Inventory	Existing Bicycle Facilities	Existing Transit Routes and Stop Locations	Vehicular Network and Roadway Classifications
Demand	Travel Survey Data & Active Transportation Propensity Model	Travel Survey Data & Active Transportation Propensity Model	Boardings and Alightings information from NCTD	Vehicular Segment and Intersection Counts and Future Travel Demand Forecast
Quality	Pedestrian Environment Score (PES)	Bicycle Level of Traffic Stress (LTS)	Station Quality – Presence of Amenities; Service Quality – On – Time Route Performance	Roadway Segment and Intersection Level of Service
Safety (Existing Conditions Only)	Historic Pedestrian Collisions (5-Yr)	Historic Bicycle Collisions (5-Yr)	Historic Collisions near Transit Stations/Stops (5-Yr)	Historic Auto Collisions (5-Yr)

Source: CR Associates (2022)

Figure 4.12: Percent of Commuters Who Take Transit to Work by Census Block Group



4.3.1 Defining the Study Area

The primary study area is defined by Vista's city boundary. Study area roadways were segmented as follows:

1. Street segments between study area intersections.
2. Street segments where a geometry change was observed.
3. Street segments that were identified as potential candidates for a road-diet in the future such as E. Bobier Drive from E. Vista Way to Anza Avenue and W. Bobier Drive from N. Santa Fe to Marabou Lane.

A total of 68 roadway segments were evaluated. A total of 40 intersections were analyzed including key signalized intersections as well as ramp intersections that provide access to the community. The study area roadway segments and key study intersections are displayed in **Figure 4.13.**

4.3.2 Pedestrian Analysis

Pedestrian Network Connectivity

Pedestrian network connectivity was evaluated by identifying the presence of existing sidewalks study area roadways.

Pedestrian/Active Transportation Demand

To understand how the pedestrian network is currently being used, historical pedestrian count data was obtained from the City's *Traffic Congestion Management Plan (TCMP* - January 2020). The data was collected during the AM and PM peak commute periods (7-9 AM and 4-6 PM) at intersections between November 2017 and August 2018. Additional counts were collected in September 2022 to supplement the historical counts at locations not included in the Vista TCMP. Count sheets are provided in **Appendix C.**

In addition, the latent demand was analyzed. A common analysis technique used to understand latent demand for walking and cycling – or the likelihood to make a walk or bike trip – is through an assessment of population and land use characteristics. This latent demand is depicted in an active transportation propensity model. The propensity model combines walk and bike trip generator inputs – population, employment, transit, pedestrian, and bicycle commuters, and senior population concentrations; and destinations with walk and bike trip attractors – schools, retail, parks, recreational spaces, and beaches. When combined, the active transportation generators and attractors provide a foundation for understanding active transportation latent demand across the City.

Figure 4.13: Vista Project Study Area and Key Study Intersections

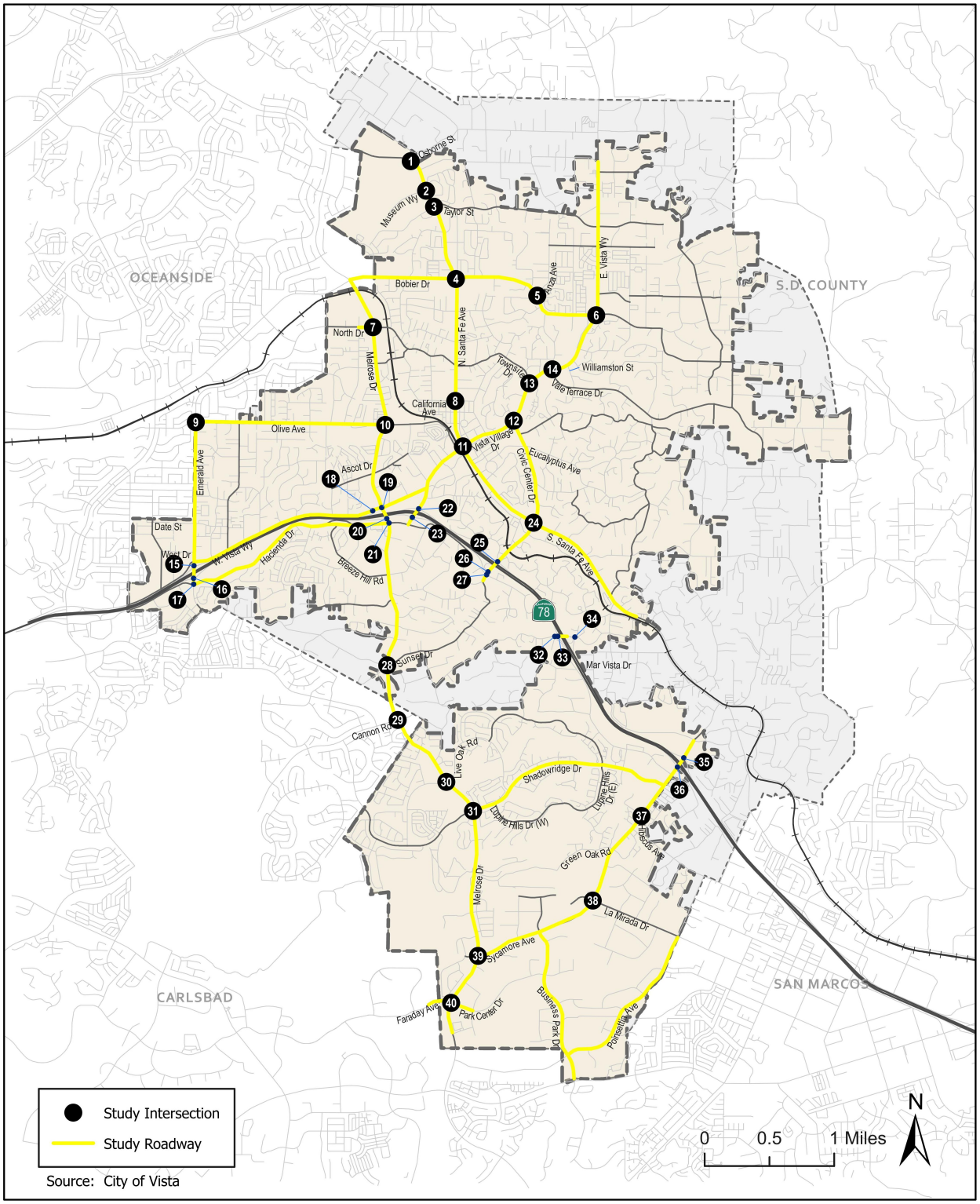


Table 4.6 displays the inputs, thresholds, and multiplier values used to create the active transportation trip generator submodel. Generator input values listed as "high" reflect conditions with a greater likelihood of generating an active transportation trip. Generator input values in the "low" range are understood to generate relatively fewer trips.

Table 4.6: Active Transportation Trip Generator Submodel Inputs

Generator Inputs	Multipliers	Point Values				
		Very High 4 points	High 3 points	Medium 2 points	Low 1 point	Very Low 0 points
Population Density (persons per acre)	3	>20	15.1 – 20	10.1 – 15	5.1 – 10	5 and <
Employment Density (jobs per acre)	3	>8	6.1 – 8	4.1 – 6	2.1 – 4	2 and <
Bicycle Commuters (% of commuters)	2	>4%	2% - 4%	1% - 1.9%	0.1% - 0.9%	0%
Pedestrian Commuters (% of commuters)	2	>5%	3% - 5%	1% - 2.9%	0.1% - 0.9%	0%
Transit Commuters (% of commuters)	2	>6%	4% - 6%	2% - 3.9%	0.1% - 1.9%	0%
Median Annual Household Income	1	≤ 40,000	$40,001 - $60,000	$60,001 - $80,000	$80,001 - $100,000	>$100,000
Households with No Vehicles (% of population)	1	>12%	9.1% - 12%	6.1% - 9%	3.1% - 6%	3% and <

Source: US Census, 2020 American Community Survey 5-Year Estimates (2022)

The Active Transportation Trip Attractor Submodel was created using the input variables displayed in **Table 4.7**. Each attractor is buffered by one-mile, with multipliers that decrease every quarter-mile interval away from the trip attractor. A point value is calculated by multiplying the distance multiplier by the weight assigned to each attractor. Land uses, garner progressively lower weights in terms of their ability to attract active transportation trips as the distance required to travel along the roadway network to reach them increases.

Table 4.7: Attractor Submodel Inputs

Attractor Inputs	Weight	Point Values			
		< ¼ mile 1.5 points	Between ¼ and ½ mile 1 point	Between ½ and ¾ mile 0.75 point	Between ¾ mile and 1 mile 0.5 point
Vista Transit Center	4	6	4	3	2
Elementary Schools	3	4.5	3	2.25	1.5
Retail Land Uses	3	4.5	3	2.25	1.5
Middle Schools	3	4.5	3	2.25	1.5
Sprinter Stations (excluding Vista Transit Center)	2	3	2	1.5	1
Parks	2	3	2	1.5	1
High Schools	1	3	2	1.5	1
Civic Land Uses	1	1.5	1	0.75	0.5

Source: CR Associates (2022)

Pedestrian Environment Score (PES)

The quality of roadway segments and designated crossing locations within the project study area were evaluated using a performance measure called Pedestrian Environment Score (PES). PES classifies roadway segments and street crossing legs into one of four categories: High, Medium, Low, and Very Low, through inventory of a robust selection of segment and street crossing variables that may influence a pedestrian's comfort or safety, such as the presence of sidewalk, separation from vehicular travel, lighting, posted speed limit, type of traffic control, crossing distance, curb ramps, and the presence of other operational and physical features at the crossing locations.

The following steps of were undertaken to determine PES:

1. A base score is assigned to a roadway segment based on a combination of posted speed limit and roadway cross-section. For example, a narrower roadway with low posted speed limit would have a higher base score than a wider and higher speed roadway.
2. Building off of the base score, physical environment features are inventoried, and the presence or absence of features are applied as points (plus or minus) to the base score:

   Features receiving negative points

   - Missing sidewalk
   - Absence of street lighting

Features receiving positive points

- Sidewalk width of 8’ or greater
- Horizontal separation from the outside travel of 14’ or greater
- Traffic calming infrastructure in the roadway (horizontal deflection, speed bumps, etc.)
- Landscaping within or along the right-of-way which provides a tree canopy
- Pedestrian scale lighting

The base PES for crossing locations are determined with a similar approach, however with intersection-specific inputs, such as type of traffic control and the number of lanes to cross. Crossing locations that are wider or with a less restrictive traffic control (uncontrolled, yield or permissive) receives a lower base score. The following features are inventoried and applied:

Features receiving negative points

- Missing or substandard curb ramps
- Lack of corner daylighting (line-of-sight)

Features receiving positive points

- Lead Pedestrian Interval (LPI) for the pedestrian crossing phase
- No Turn on Red at a signalized intersection
- Curb extensions or median refuges
- High visibility crosswalks (continental stripes or similar) with advanced stop bars at traffic-controlled locations or Rectangular Rapid-Flashing Beacon (RRFB)/HAWK signals at non-traffic-controlled locations
- Other pedestrian signal enhancements (e.g., countdown timers, audible signals, automated signals)
- Raised crosswalks
- Pedestrian scramble phases for pedestrian crossings

Pedestrian Safety

Vehicle-pedestrian collision data utilized in this report is consistent with the Vista Local Roadway Safety Plan (February 2021) for the 5-year period between 2015 and 2019. Additional focus will be placed on these locations when considering pedestrian-related improvements. Collision causes were tabulated to further understand pedestrian safety and trends.

4.3.3 Bicycle Analysis

Bicycle Network Connectivity

Bicycle network connectivity was assessed by reviewing the existing bicycle facilities.

Bicycle/Active Transportation Demand

To understand how the bicycle network is currently being used, historical bicycle count data was obtained from the City's *Traffic Congestion Management Plan (TCMP* - January 2020). The data was collected during the AM and PM peak commute periods (7-9 AM and 4-6 PM) at intersections between November 2017 and August 2018. Additional counts were collected in September 2022 to supplement the historical counts at locations not included in the Vista TCMP. Count sheets are provided in **Appendix C.**

Additionally, the propensity model discussed above in the Pedestrian Demand/Active Transportation Propensity section helps identify latent demand across all active transportation modes.

Bicycle Facility Quality

The bicycle environment was assessed using the bicycle Level of Traffic Stress (LTS) methodology for characterizing cycling environments, as developed by Mekuria, et al. (2012) of the Mineta Transportation Institute and reported in *Low-Stress Bicycling and Network Connectivity*. LTS classifies the street network into categories according to the level of stress it causes cyclists, taking into consideration a cyclist's physical separation from vehicular traffic, vehicular traffic speeds along the roadway segment, number of travel lanes, and factors related to intersection approaches with dedicated right-turn lanes and unsignalized crossings.

Table 4.8 identifies the four LTS categories and provides a description of the traffic stress experienced by the cyclist and the environmental characteristics consistent with the category. LTS scores range from 1 (lowest stress) to 4 (highest stress) and correspond to roadways that different populations may find suitable for riding on, considering their stress tolerance.

Table 4.8: Level of Traffic Stress Classifications and Descriptions

LTS Category	LTS Description	Description of Environment	Comfort Level
LTS 1	Presenting little traffic stress and demanding little attention from cyclists; suitable for almost all cyclists, including children trained to safely cross intersections.	• Facility that is physically separated from traffic or an exclusive cycling zone next to a slow traffic stream with no more than one lane per direction • A shared roadway where cyclists only interact with the occasional motor vehicle with a low-speed differential • Ample space for cyclist when alongside a parking lane • Intersections are easy to approach and cross	Interested but Concerned – Vulnerable Populations
LTS 2	Presenting little traffic stress but demanding more attention that might be expected from children.	• Facility that is physically separated from traffic or an exclusive cycling zone next to a well-confined traffic stream with adequate clearance from parking lanes • A shared roadway where cyclists only interact with the occasional motor vehicle (as opposed to a stream of traffic) with a low-speed differential • Unambiguous priority to the cyclist where cars must cross bike lanes (e.g., at dedicated right-turn lanes); design speed for right-turn lanes comparable to bicycling speeds • Crossings not difficult for most adults	Interested but Concerned – Mainstream Adult Populations

Table 4.8: Level of Traffic Stress Classifications and Descriptions

LTS Category	LTS Description	Description of Environment	Comfort Level
LTS 3	Presenting enough traffic stress to deter the Interested but Concerned demographic	• An exclusive cycling zone (lane) next to moderate-speed vehicular traffic • A shared roadway that is not multilane and has moderately low automobile travel speeds • Crossings may be longer or across higher-speed roadways than allowed by LTS 2, but are still considered acceptably safe to most adult pedestrians	Enthused & Confident
LTS 4	Presenting enough traffic stress to deter all but the Strong & Fearless demographic	• An exclusive cycling zone (lane) next to high-speed and multilane vehicular traffic • A shared roadway with multiple lanes per direction with high traffic speeds • Cyclist must maneuver through dedicated right-turn lanes containing no dedicated bicycling space and designed for turning speeds faster than bicycling speeds	Strong & Fearless

Source: Mekuria, et al., (2012)

Bicycle Safety

Vehicle-bicycle collision data utilized in this report is consistent with the Vista Local Roadway Safety Plan (February 2021) for the 5-year period between 2015 and 2019. Additional focus will be placed on these locations when considering bicycle-related improvements. Collision causes were tabulated to further understand bicycle safety and trends.

4.3.4 Transit Analysis

Transit Network Connectivity

Transit Network Connectivity looks at the bus routes within Vista and the destinations which can be accessed by them.

Demand

Demand for public transit in Vista was assessed by quantifying the number of people who currently board and disembark, also referred to as "alight," at each bus stop within the City.

Transit Facility Quality

Two metrics were reviewed regarding the quality of the transit service provided, the on-time performance and the presence of amenities at the bus stops.

On Time Performance

The on-time performance of the transit routes in Vista was evaluated.

Presence of Amenities

Each bus stop was reviewed for the presence of the following amenities:

- Bus stop sign & Pole
- Route Designation
- Transit Information
- Schedule Display
- Route Map
- System Map
- Red Curb
- Seating
- Passenger Shelter
- ADA Compliant
- Bus Pad
- Extended Sidewalks
- Digital Display
- Bicycle Rack
- Kiosk
- Trash Receptacle

The North County Transit District (NCTD) has a Bus Stop Development Handbook (March 2018) which offers uniform guidance for the design and placement of bus-related facilities and amenities. NCTD's guidelines for providing bus stop amenities are based on the following considerations:

1. Basic bus operations and safety requirements;
2. Current engineering practices in North San Diego County;
3. Amenities necessary for attracting and increasing transit ridership;
4. Anticipated benefits to developers or agencies in providing transit services to their future residents, tenants, and customers;
5. Compatibility of the improvements with other roadway uses; and
6. The Americans with Disabilities Act (ADA)

Table 4.9 lists the designation criteria, required, recommended, and optional transit stop amenities for each stop type.

Table 4.9: Transit Stops Amenity Guidelines

Stop Type	Designation Criteria	Required Amenities	Recommended Amenities	Optional Amenities
Basic Stops	• Less than 20 daily boardings at urban stops • Less than 10 daily boardings at suburban stops	• Bus stop sign • ADA accessible pad	N/A	N/A
Bench Stops	• 20 to 30 daily boardings at urban stops • 10 to 20 daily boardings at suburban stops	• Bus stop sign • ADA accessible pad • Bench • Connection to adjacent sidewalk/pathways • Trash receptacle	• Lighting • Bicycle racks/lockers • Transit Route information	• Shading elements • Transit system information
Shelter Stops	• Greater than 30 daily boardings at urban stops • Greater than 20 daily boardings at suburban stops	• Bus stop sign • ADA accessible pad • Bench • Shelter • Connection to adjacent sidewalk/pathways • Trash receptacle	• Lighting • Bicycle racks/lockers • Transit Route information	• Digital messaging signs
Station Stops	• Sprinter Light Rail service • Breeze Rapid service	• Bus stop sign • ADA accessible pad • Bench • Connection to adjacent sidewalk/pathways • Trash receptacle • Single shelter or double shelter with integrated station marker • Station marker with integrated seats • Solar-powered LED lighting	• Transit route and schedule information • Transit system information • Wayfinding signage • Digital messaging signs	N/A

Source: North County Transit District (2022)

Safety Near Transit Stop/Station

Historic collision data within 500 feet of a transit stop or station was obtained from the Vista Local Roadway Safety Plan (February 2021) the 5-year period between 2015 and 2019. Additional focus will be placed on these locations when considering improvements near transit stops or stations.

4.3.5 Vehicular Analysis

The vehicular analysis provides an evaluation of vehicular operations at intersections and along roadway segments. A description of the methodologies employed to evaluate vehicular travel is outlined throughout this section.

Vehicular Network Connectivity

The existing roadway cross-sections for study area roadways were analyzed. This included a description of each study roadway, as well as, the segment functional classification, median type, pavement width, posted speed limit, parking availability, presence of sidewalks, bicycle facilities, and transit routes.

Demand

To understand how the vehicular network is currently being used, historical traffic count data was obtained from the City's Traffic Congestion Management Plan (TCMP - January 2020). The data was collected during the AM and PM peak commute periods (7-9 AM and 4-6 PM) at intersections between November 2017 and August 2018. Additional counts were collected in September 2022 to supplement the historical counts at locations not included in the Vista TCMP. Count sheets are provided in **Appendix C.**

Vehicular Facility Quality

Vehicular LOS is a quantitative measure describing how well a transportation facility operates from a driver's perspective. These conditions are generally described in terms of speed, travel time, freedom to maneuver, comfort, convenience, and safety. LOS A represents optimum operating conditions from a driver's perspective, while LOS F represents the worst. **Table 4.10** describes generalized definitions of vehicular LOS A through F.

Table 4.10: Vehicular Level of Service Definitions

LOS	Characteristics
A	Primarily free-flow operation. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Controlled delay at the boundary intersections is minimal. The travel speed exceeds 85 percent of the base free-flow speed.
B	Reasonably unimpeded operation. The ability to maneuver within the traffic stream is only slightly restricted and control delay at the boundary intersections is not significant. The travel speed is between 67 percent and 85 percent of the base free-flow speed.
C	Stable operation. The ability to maneuver and change lanes at mid-segment locations may be more restricted than at LOS B. Longer queues at the boundary intersections may contribute to lower travel speeds. The travel speed is between 50 percent and 67 percent of the base free-flow speed.
D	Less stable condition in which small increases in flow may cause substantial increases in delay and decreases in travel speed. This operation may be due to adverse signal progression, high volume, or inappropriate signal timing at the boundary intersections. The travel speed is between 40 percent and 50 percent of the base free-flow speed.
E	Unstable operation and significant delay. Such operations may be due to some combination of adverse signal progression, high volume, and inappropriate signal timing at the boundary intersections. The travel speed is between 30 percent and 40 percent of the base free-flow speed.
F	Flow at extremely low speed. Congestion is likely occurring at the boundary intersections, as indicated by high delay and extensive queuing. The travel speed is 30 percent or less of the base free-flow speed. Also, LOS F is assigned to the subject direction of travel if the through movement at one or more boundary intersections have a volume-to-capacity ratio greater than 1.0.

Source: Highway Capacity Manual (7th Edition).

Roadway Segment Level of Service Standards and Thresholds

Roadway segment level of service standards and thresholds provide the basis for analysis of arterial roadway segment and intersections performance. The analysis of roadway segment level of service is based on the functional classification of the roadway, maximum capacity, roadway geometrics, and existing or forecasted average daily traffic (ADT) volumes. **Table 4.11** presents the roadway segment capacity and LOS standards utilized to analyze roadways evaluated in this report.

These standards are generally used as long-range planning guidelines to determine the functional classification of roadways. The actual capacity of a roadway facility varies according to its physical and operational attributes. LOS D is considered acceptable for the City of Vista according to City's Circulation Element Policy 1.2 and the Transportation Impact Analysis Guidelines.

Table 4.11: City of Vista Roadway Segment Daily Capacity (ADT) and Level of Service Standards

Roadway Functional Classification	Level of Service				
	A	B	C	D	E
6-Lane Prime Arterial	36,000	42,000	48,000	54,000	60,000
5-Lane Prime Arterial	30,000	35,000	40,000	45,000	50,000
4-Lane Prime Arterial	24,000	28,000	32,000	36,000	40,000
6-Lane Urban Major	30,000	35,000	40,000	45,000	50,000
5-Lane Urban Major	25,000	29,167	33,333	37,500	41,667
4-Lane Major Arterial	24,000	28,000	32,000	36,000	40,000
3-Lane Major Arterial	18,000	21,000	24,000	27,000	30,000
4-Lane Collector	15,000	17,500	20,000	22,500	25,000
3-Lane Collector	11,250	13,125	15,000	16,875	18,750
2-Lane Collector with TWLTL	9,000	10,500	12,000	13,500	15,000
2-Lane Collector	5,280	6,160	7,040	7,920	8,800
2-Lane Semi-Rural	<7,900				

Source: City of Vista Transportation Impact Analysis Guidelines (December 2020)

Peak Hour Intersection Level of Service Standards and Thresholds

This section presents the methodologies used to perform weekday peak hour intersection capacity analysis, for both signalized and unsignalized intersections. The following assumptions were utilized in conducting all intersection level of service analyses:

- Pedestrian Calls per Hour: An assumption of five pedestrian calls per hour for low activity areas, ten pedestrian calls per hour for medium level activity areas, and twenty or more pedestrian calls per hour for high activity areas;
- Heavy Vehicle Factor: A two percent heavy vehicle favor was assumed for all intersections;
- Peak Hour Factor: Obtained from existing peak hour counts (included in **Appendix C**); and
- Signal Timing: Obtained from existing signal timing plans (as of September 2022).

Signalized Intersection Analysis

The signalized intersection analysis utilized in this study conforms to the operational analysis methodology outlined in Highway Capacity Manual (HCM) 6th Edition. This method defines LOS in terms of delay, or more specifically, average control delay per vehicle (seconds/vehicle).

The HCM 6th Edition methodology sets 1,900 passenger-cars per hour per lane (pcphpl) as the ideal saturation flow rate at signalized intersections based upon the minimum headway that can be sustained between departing vehicles at a signalized intersection. The service saturation flow rate, which reflects the saturation flow rate specific to the study facility, is determined by adjusting the ideal saturation flow rate for lane width, on-street parking, bus stops, pedestrian volume, traffic composition (or percentage of heavy vehicles), and shared lane movements (e.g. through and right-turn movements sharing the same lane). The LOS criteria used for this technique are described in **Table 4.12**. The computerized analysis of intersection operations was performed utilizing the Synchro 11.1.2.9 (HCM 6th Edition methodology) traffic analysis software (by Trafficware, 2022).

The HCM 6th Edition analysis methodology requires strict adherence to standard dual ring NEMA phasing. Conflicting phase overlaps, clustered intersections, or other non-compliant phasing sequences cannot be analyzed using this method. **Figure 4.14** depicts a NEMA phasing diagram, which assigns numbers to each of the four left-turn movements and four through movements and provides a logical process through which each of the movements is served in turn. Each movement is controlled by a phase, with the eight phase numbers accounting for the basis of a NEMA phasing plan. Phases in the diagram that are located above/below each other operate concurrently (i.e., Phase 1 and Phase 5), hence they do not conflict with each other. Phases that are next to each other (i.e., Phase 1 and Phase 2) operate sequentially (i.e. when Phase 1 ends, Phase 2 begins).

Figure 4.14: NEMA Phasing Diagram

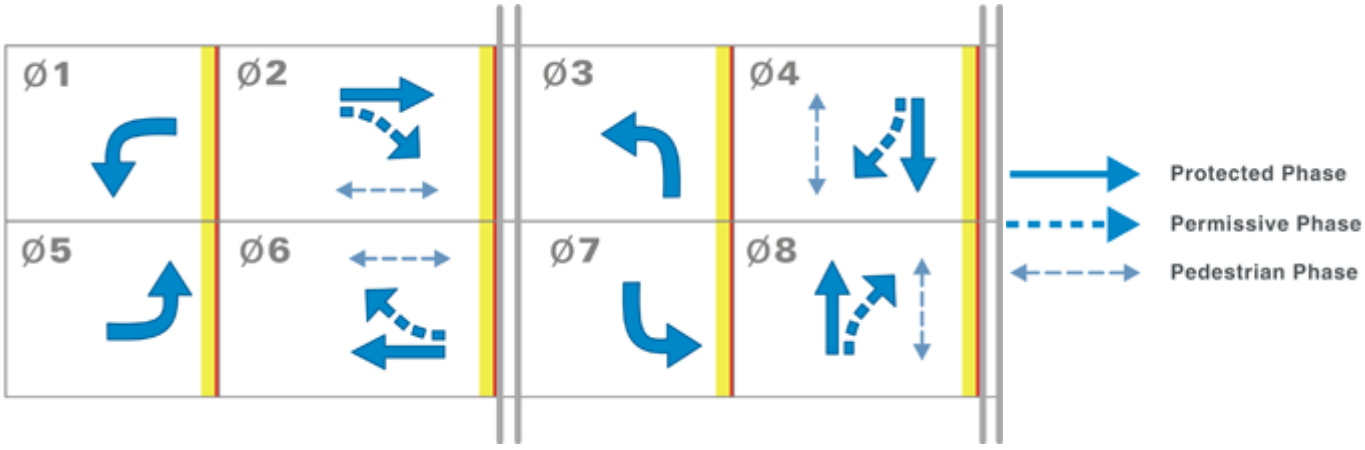


Table 4.12: Signalized Intersection Level of Service HCM Operational Analysis Method

Average Control Delay Per Vehicle (seconds)	Level of Service (LOS) Characteristics
<10.0	*LOS A* occurs when the volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.
10.1 – 20.0	*LOS B* occurs when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.
20.1 – 35.0	*LOS C* occurs when progression is favorable or the cycle length is moderate. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.
35.1 – 55.0	*LOS D* occurs when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.
55.1 – 80.0	*LOS E* occurs when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.
>80.0	*LOS F* occurs when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

Source: Highway Capacity Manual (7th Edition).

Unsignalized Intersection Analysis

Unsignalized intersections, including two-way and all-way stop controlled intersections were analyzed using the HCM 6th Edition unsignalized intersection analysis methodology. The Synchro 11.1.2.9 software supports this methodology and was utilized to produce LOS results. The LOS for a two-way stop controlled (TWSC) or a side-street stop controlled (SSSC) intersection is determined by the computed or measured control delay and is defined for each minor movement, and the worst movement is reported. The LOS for an all-way stop controlled (AWSC) intersection is determined by the computed or measured average control delay of all movements, and intersection-level LOS is reported. **Table 4.13** summarizes the level of service criteria for unsignalized intersections. Consistent with City policy, LOS D was used in this study as the minimum acceptable LOS for peak hour intersection operations.

Table 4.13: Level of Service Criteria for Stop Controlled Unsignalized Intersections

Average Control Delay (seconds)	Level of Service (LOS)
<10.0	A
10.1 – 15.0	B
15.1 – 25.0	C
25.1 – 35.0	D
35.1 – 50.0	E
>50.0	F

Source: Highway Capacity Manual (7th Edition).

Freeway/Highway Level of Service

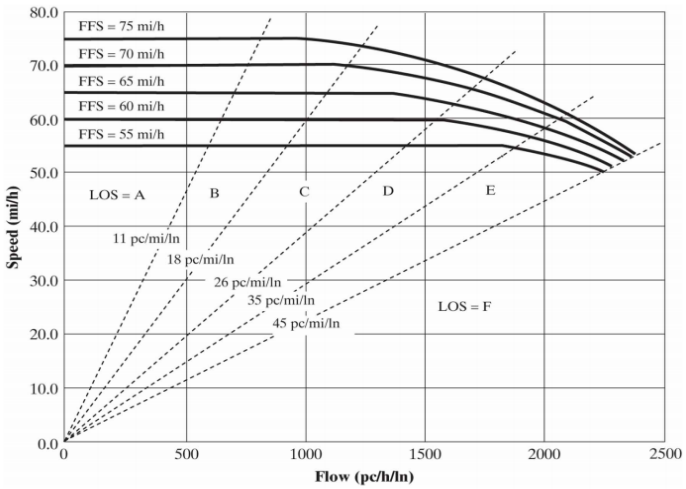
Freeway level of service analysis is based upon procedures developed by Highway Capacity Manual 6th Edition. The procedure for calculating freeway LOS involves estimating the vehicle speed (mi/h) and density/flow (pc/mi/ln).

HCS7 software, developed by McTrans, was used to calculate both the vehicle speed and density/flow along the study area freeway segments. The HCS7 software required the following inputs to complete the speed and density/flow calculations:

- AADT – Caltrans Traffic Census 2018 AADT Volumes Report
- K (peak hour percentage) – Caltrans Traffic Census 2018 AADT Volumes Report
- D (directional split) – Caltrans Traffic Census 2018 AADT Volumes Report
- $AADT_{adj}$ – Calculated using AADT and D values provided by Caltrans using the following equation:
- $AADT_{adj} = (\frac{D}{1-D})AADT$
- represents the direction in the opposite direction of the Peak Direction
- PHF – Assumed to be a typical value of 0.95
- P_T (% Trucks and Busses) – Caltrans Traffic Census 2018 AADT Truck Volumes Report
- P_R (% RVs) – Assumed to be 0, HCM 6 recommends grouping RV volumes with Trucks in Buses as the value is assumed less than a 5:1 ratio
- General Terrain – Assumed to be less than 2 percent grade and therefore Level Terrain (HCM 6 11-16,17)
- f_p – Driver population factor assumed one as traffic is largely commuter traffic
- E_T – Value of 1.5 as terrain is Level (HCM 6 11-15)
- E_R – Value of 1.2 as terrain is Level (HCM 6 11-15)

- Lane Width – Assumed 12’ maximum value by Google Earth survey
- Rt-Side Lat. Clearance – Assumed 6’ maximum value by Google Earth survey
- Total Ramp Density, TRD – Calculated based on Google Earth survey
- Density calculated by total number of on/off ramps in single direction within segment length plus 3 miles in both directions, divided by the total length
- Base free-flow Speed, BFFS – Assumed 75.4 mph (HCM 6 11-11)

Using the calculated freeway speed and density/flow, the LOS is determined using the chart to the right.



Source: Highway Capacity Manual (6th Edition)

Vehicular Network Safety

Vehicle-vehicle collision data utilized in this report is consistent with the Vista Local Roadway Safety Plan (February 2021) for the 5-year period between 2015 and 2019. This data was geocoded and mapped to display vehicular collision locations within the City. Collision causes were tabulated to further understand safety and trends.

4.4 Mobility Analysis

Pedestrian Mobility

The existing pedestrian environment is described and assessed as it relates to connectivity, demand, quality, and safety. Providing adequate pedestrian access and quality infrastructure helps contribute towards a safe and comfortable walking environment. The degree to which people walk for transportation and leisure and their selected routes of travel are influenced by the comfort, safety, and convenience of their experience.

Pedestrian comfort is influenced by separation from traffic, topography, the presence of sidewalks, and climate. Safety is determined by the speed and volume of vehicular traffic, crossing distances, traffic control, number of conflict points, and infrastructure design. Convenience is affected by distance and directness of travel. As connectivity increases, travel distances decrease.

4.4.1 Pedestrian Network Connectivity

Pedestrian infrastructure generally consists of sidewalks, pathways, and crosswalks. Pedestrian mobility is further supported by wayfinding signs, regulatory signs, street crossing features, and various amenities that all further contribute to pedestrian safety and comfort. Existing pedestrian infrastructure was inventoried to understand the existing network and identify locations with deficiencies. The inventory identified locations of sidewalks.

Figure 4.15 displays the locations of missing sidewalks along public roads. Sidewalks are generally absent throughout the City, especially in the older neighborhoods concentrated in the middle of the City north of SR-78. These areas are predominantly single-family residential neighborhoods developed prior to standards requiring sidewalks.

There are also sidewalks missing along some of the Mobility Element designated roadways, however, generally only along one side of the street without active adjacent land uses. The north side of W. Vista Way, between Copper Avenue and Santa Clara Drive is an example of this, where no land uses are accessible, thus negating the need for a sidewalk. Additional examples include segments along North Avenue, Bobier Drive, and Olive Avenue. Constructing these sidewalks should be dependent on adjacent developments.

4.4.2 Pedestrian Demand

Historical pedestrian count data was obtained from the City's *Traffic Congestion Management Plan (TCMP* - January 2020). The data was collected during the AM and PM peak commute periods (7-9 AM and 4-6 PM) at intersections between November 2017 and August 2018. Additional counts were collected in September 2022 to supplement the historical counts at locations not included in the Vista TCMP. This data helps round out the understanding of how the pedestrian and bicycle networks are currently used.

Figure 4.16 displays pedestrian volumes observed at each of the 40 count locations during the morning commute hours and the five locations with the highest activities include:

- S. Melrose Drive & Live Oak Road - Longhorn Drive (553)
- N. Santa Fe Avenue & Taylor Street (182)
- N. Melrose Drive & Olive Avenue (163)
- N. Santa Fe Avenue & E. California Avenue (152)
- N. Santa Fe Avenue & E. Bobier Drive (144)

All five intersections above are adjacent to schools, and the high activities are likely associated with students walking to school in the morning.

Figure 4.15: Missing Sidewalks

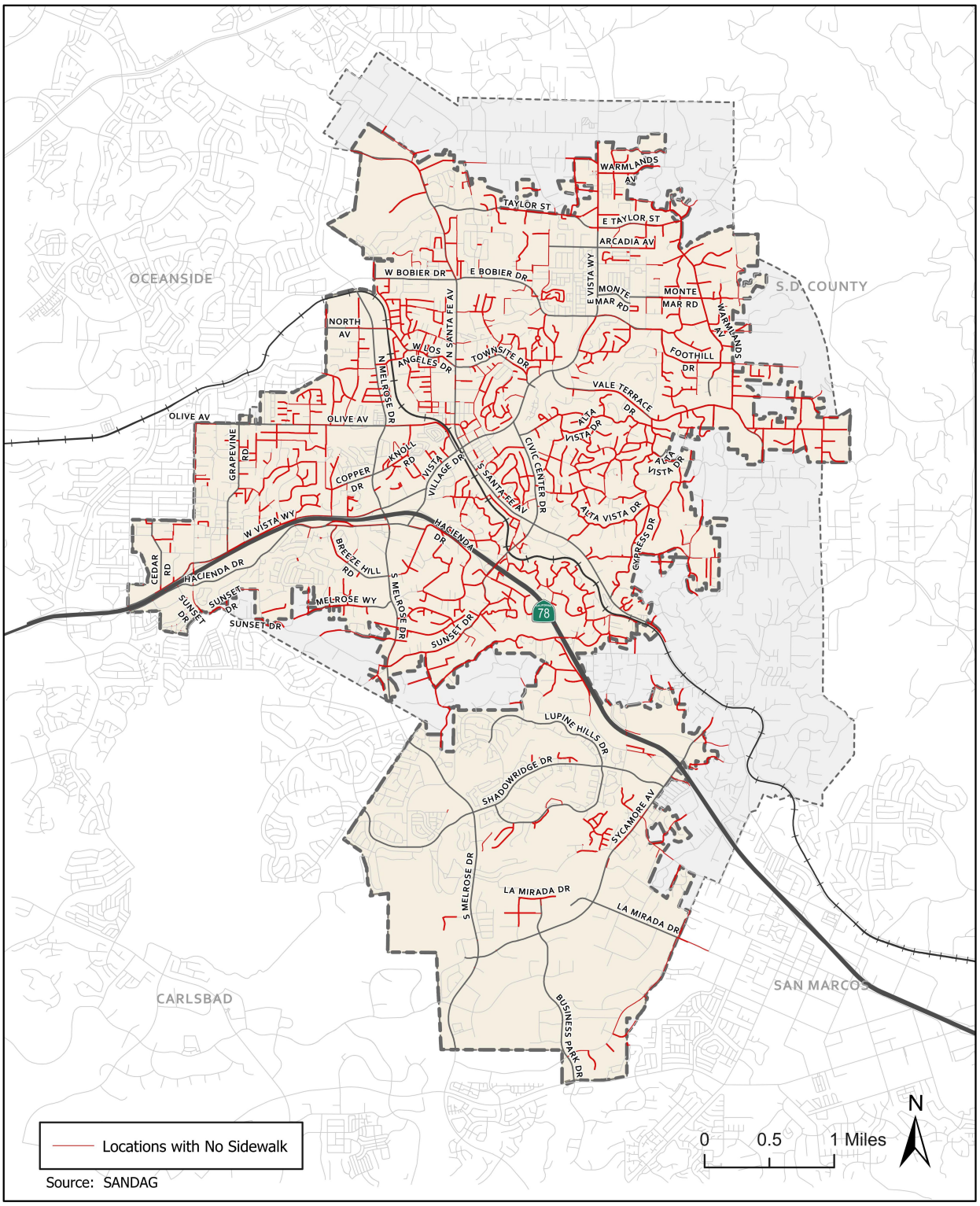
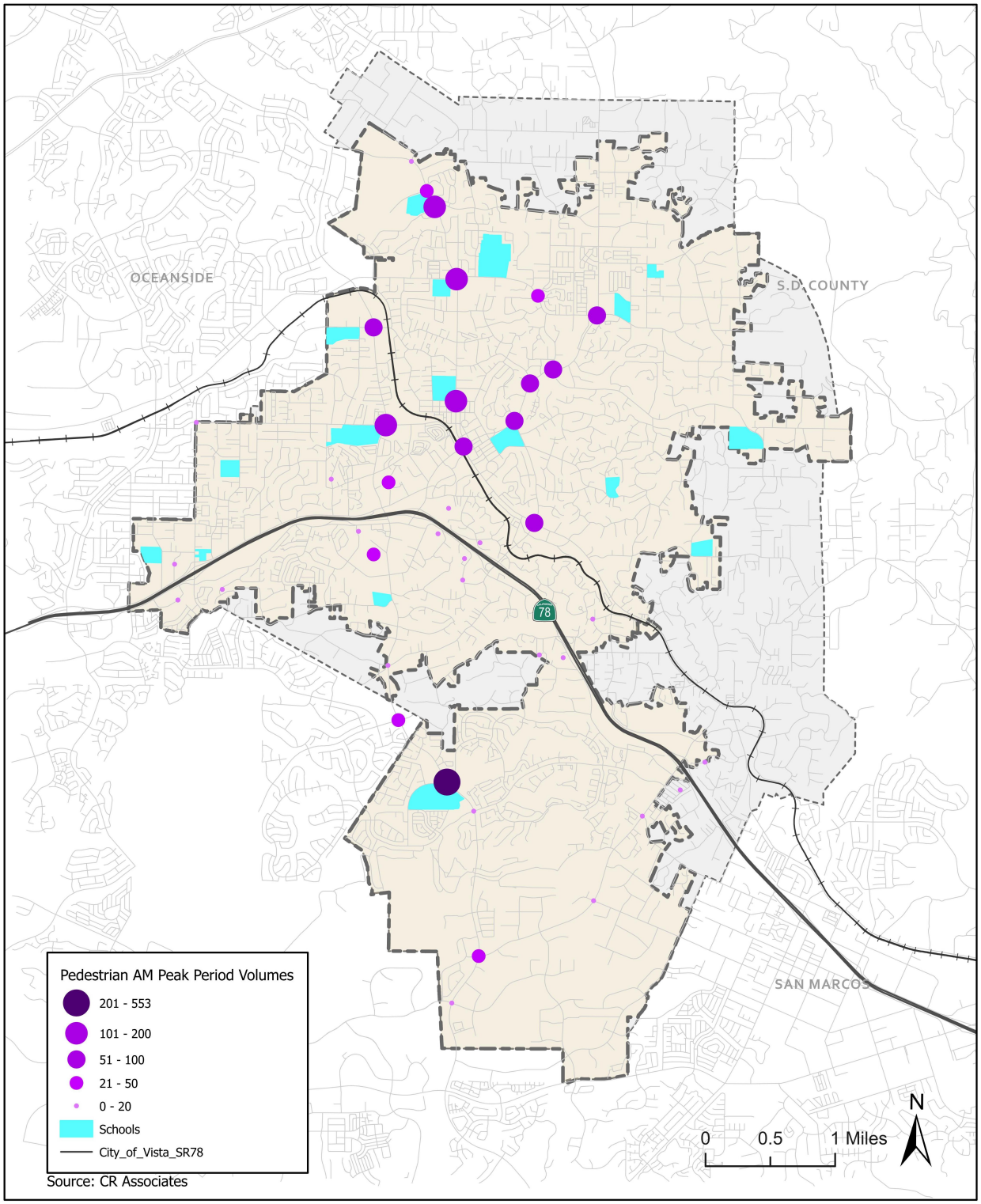


Figure 4.16: AM Peak Period Pedestrian Counts



Source: CR Associates

Figure 4.17 displays pedestrian volumes observed at each of the 40 count locations during the afternoon commute hours and the five locations with the highest activities include:

- E. Vista Way & E. Bobier Drive (94)
- N. Melrose Drive & Olive Avenue (85)
- N. Santa Fe Avenue & Vista Village Drive (74)
- E. Vista Way & Townsite Drive (72)
- E. Vista Way & Anza Avenue - Vale Terrace (69)

All five intersections above are adjacent to schools, a transit center, and retail/restaurant land uses. Therefore, the high volumes present at these sites could be related to the pedestrian flow of students during the PM peak period and from residents of the adjacent neighborhoods.

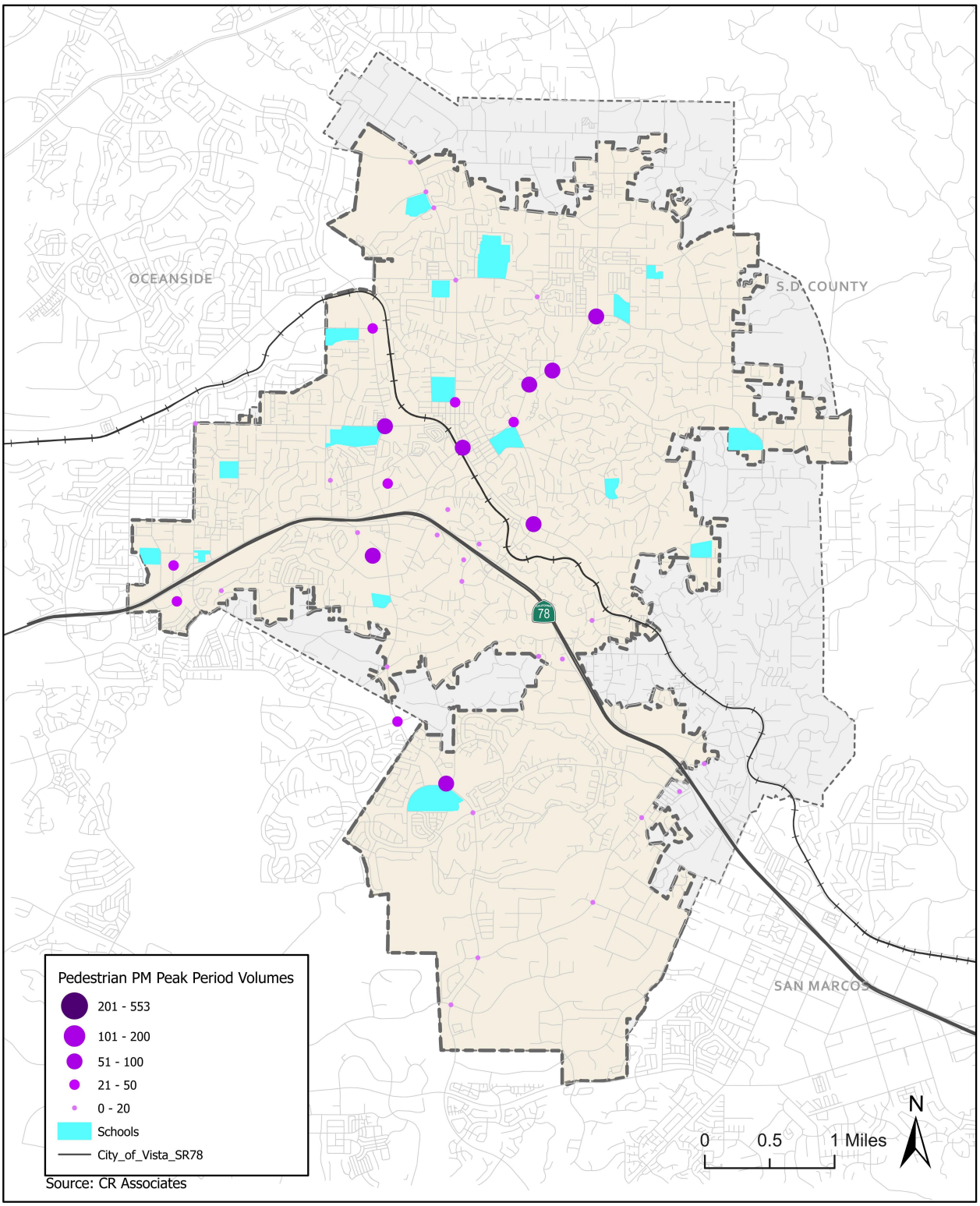
Figure 4.18 displays the AM and PM peak period pedestrian movements at the respective intersection legs.

As mentioned previously in the methodology sections, latent demand provides another indicator as where pedestrians could potentially travel. The active transportation propensity model includes to submodels:

- Active Transportation Trip Generator Submodel – where trips originate or are generated from
- Active Transportation Trip Attractor Submodel – where trips are going to or are attracted to

Figure 4.19 shows the active transportation generator submodel results. Higher population and employment densities are associated with potentially higher levels of active transportation trip generation. Bicycle and pedestrian commute rates, as well as zero-vehicle households, are also contributing factors to trip generation propensity. There are a few census block groups with high active transportation trip generation propensity. The majority of these census blocks are located along Santa Fe Avenue, at the intersection with W. Los Angeles Drive and Civic Center Drive, respectively. Some of these census block groups have a high percentage of commuters who bike and take public transportation to work.

Figure 4.17: PM Peak Period Pedestrian Counts



Source: CR Associates

Figure 4.18: AM/PM Peak Period Pedestrian Volumes – Existing Conditions

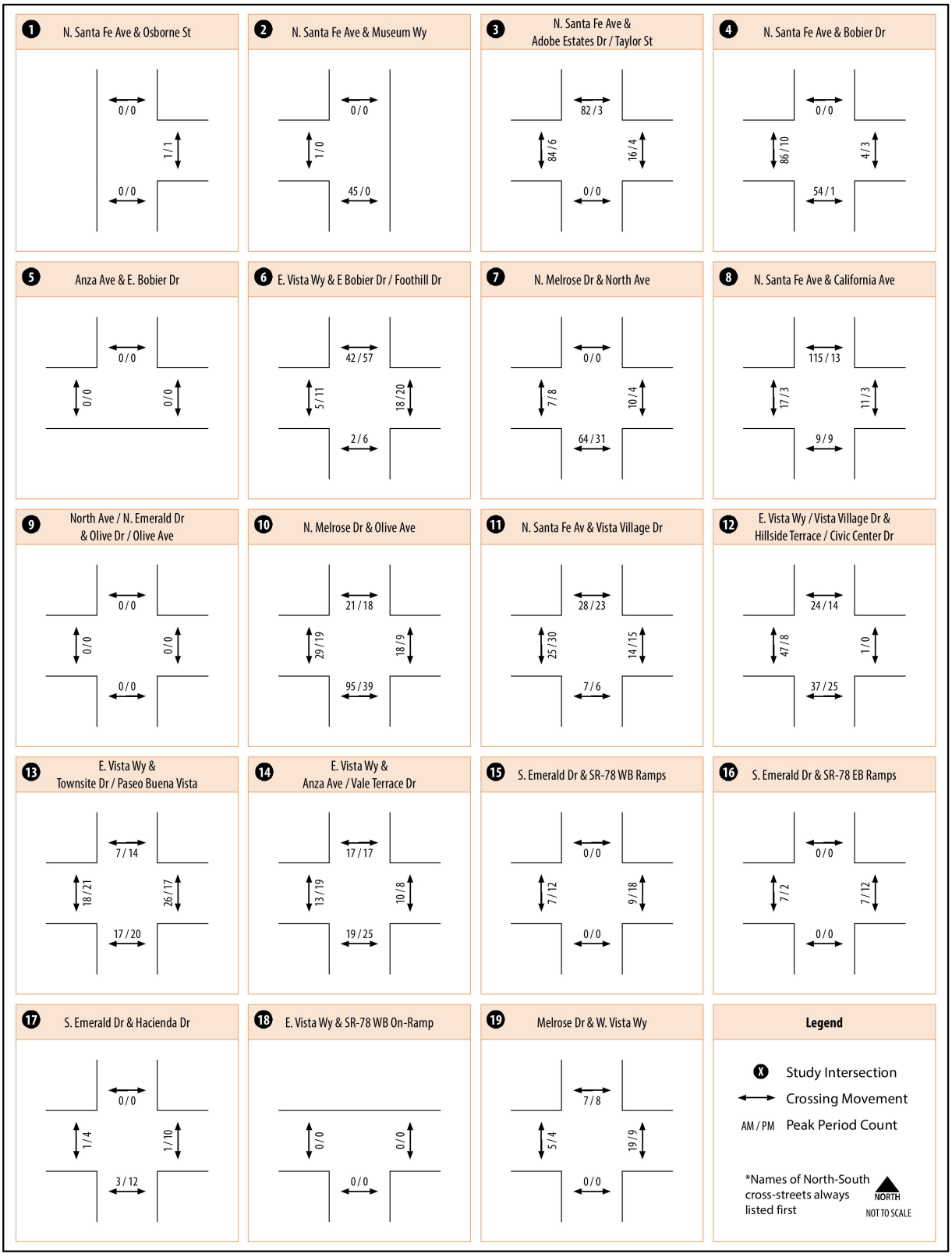


Figure 4.18: AM/PM Peak Period Pedestrian Volumes – Existing Conditions

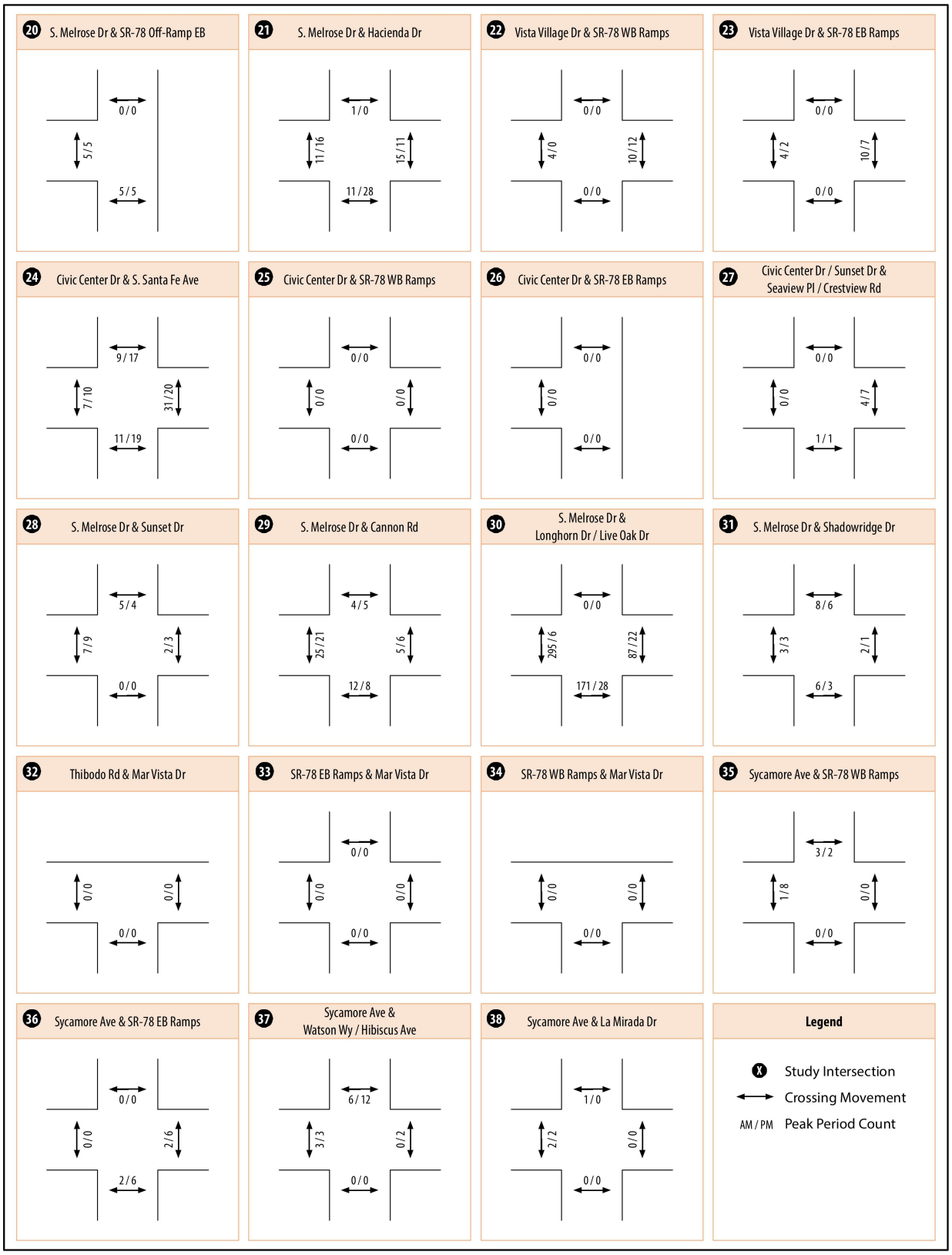


Figure 4.18: AM/PM Peak Period Pedestrian Volumes – Existing Conditions

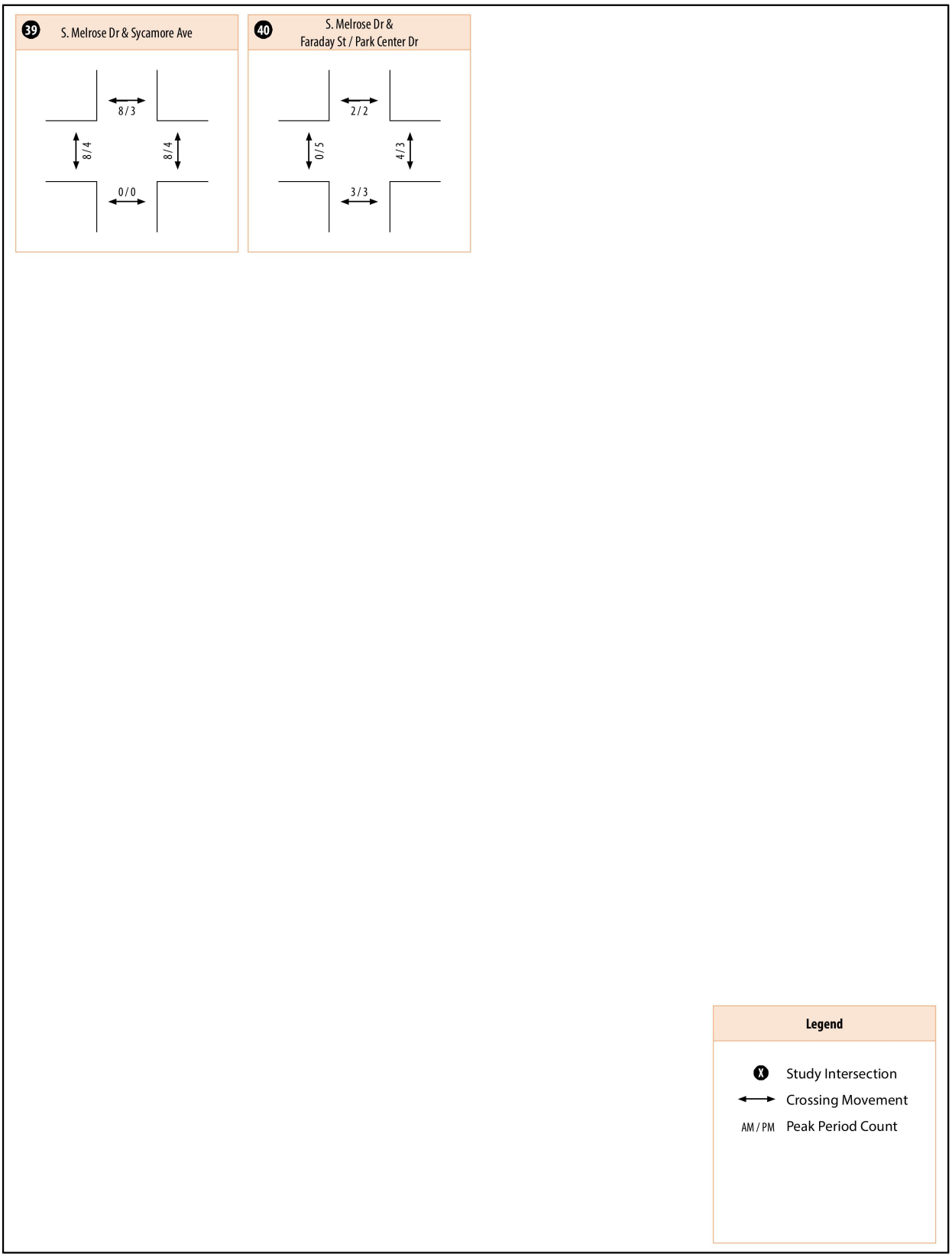


Figure 4.19: Active Transportation Trip Generator Submodel

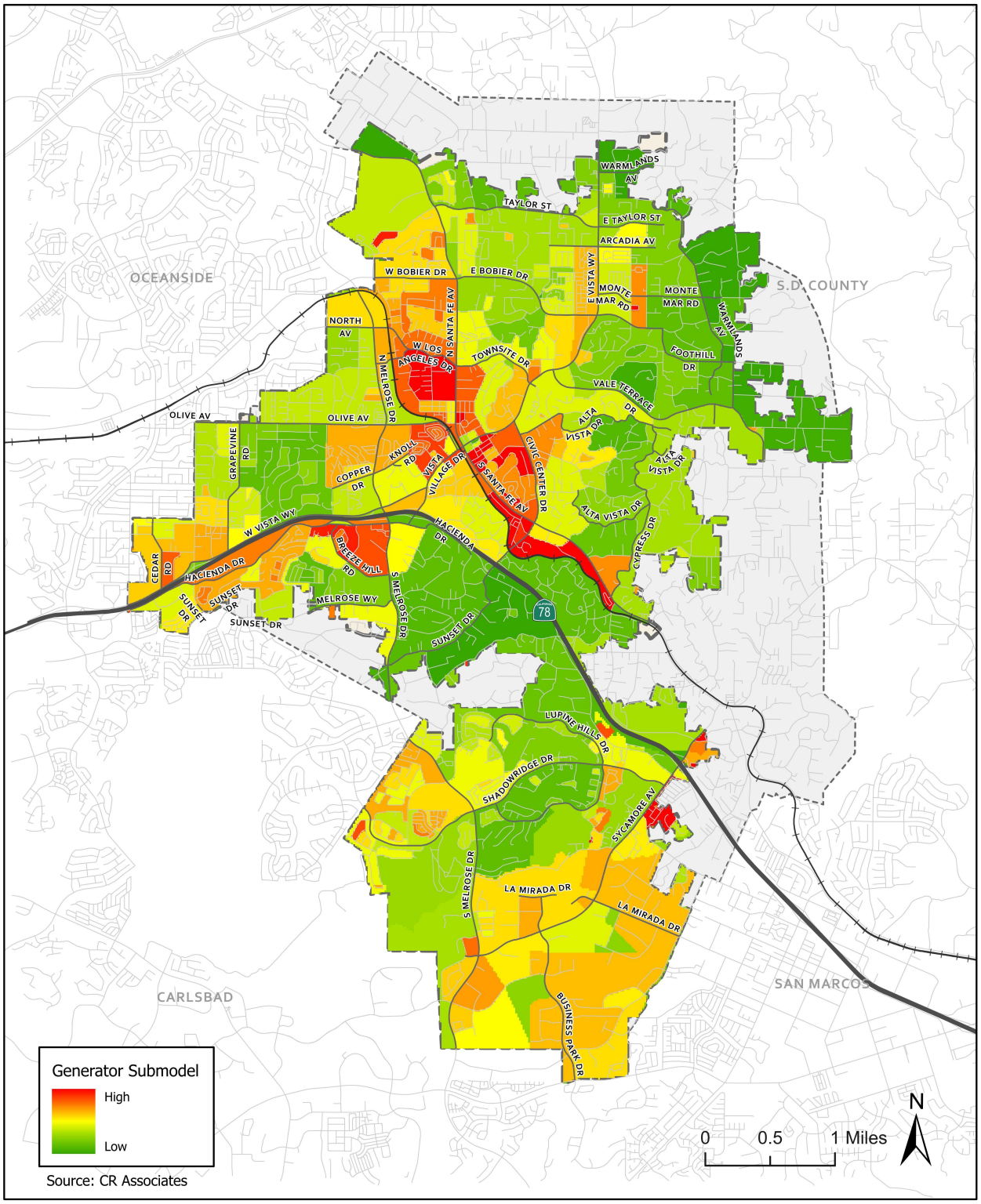


Figure 4.20 displays the active transportation trip attractor submodel results. Trip attractors include schools, parks, retail and office land uses, etc. The greatest concentrations of trip attractors are shown surrounding Downtown Vista, where the Vista Transit Center, Vista's Academy of Visual and Performing Arts, Linda Rhoades Recreation Center, Cinepolis Cinemas, The Wave (waterpark), and several other retail shops and restaurants are located. Smaller concentrations of trip attractors are shown along S. Melrose Drive near Breeze Hill Park and Breeze Hill Elementary School, as well as near the N. Melrose Drive and Olive Avenue intersection, including Vista's Innovation & Design Academy.

Figure 4.21 displays the active transportation propensity model. Higher propensity (red and orange on the figure) is indicative of areas with increased potential for active transportation due to relatively higher levels of trip attractors and trip generators. It is particularly important to examine the quality of infrastructure in this high propensity area.

4.4.3 Pedestrian Environment Score (PES)

Pedestrian Environment Score (PES) is an assessment of the quality of the pedestrian environment along both sides of the roadways and at select crossing locations. **Figure 4.22** displays the results of the assessment and **Table 4.14** summarizes the PES scores by roadway segment mileage (on both sides of the street) and scores of all crossing locations by percentage total. The PES criteria tables were introduced in Section 4.3.2 and provided in **Appendix D**.

Table 4.14: Roadway Segment Mileage and Intersection Crossing Legs by PES Rating

Rating	Segment Mileage (both sides of street)		Intersection Crossing Legs		Mid-Block Crossing Leg	
	Miles	%	# of Legs	%	# of Crossings	%
High	8.4	6.6%	32	6.3%	0	0%
Medium	6.6	5.1%	111	21.9%	2	66.7%
Low	10.5	8.1%	184	36.3%	0	0%
Very Low	103.4	80.2%	180	35.5%	1	33.3%
Total	**128.9**	**100%**	**507**	**100%**	**3**	**100%**

Source: CR Associates (2022)

Figure 4.20: Active Transportation Trip Attractor Submodel

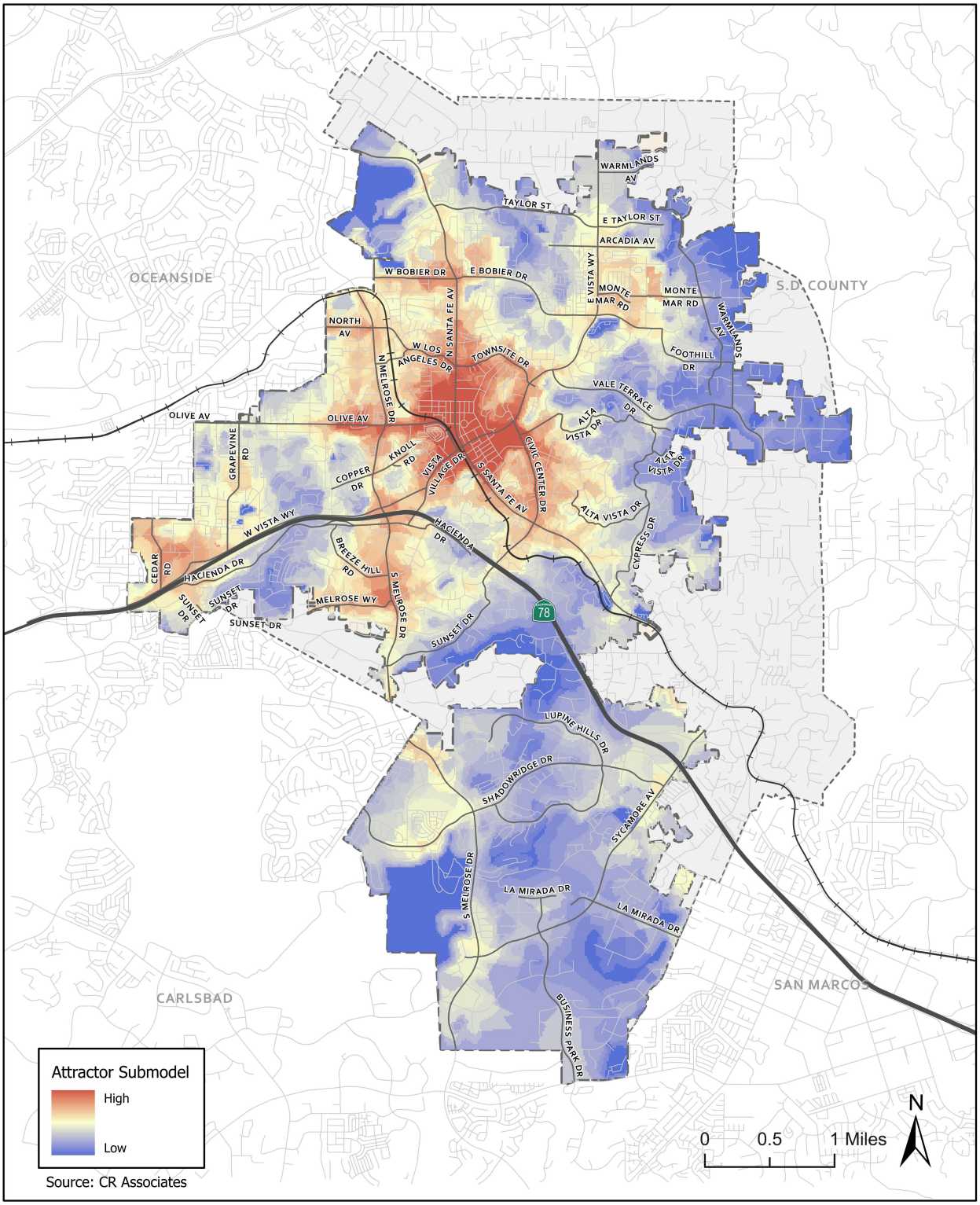


Figure 4.21: Active Transportation Propensity Model

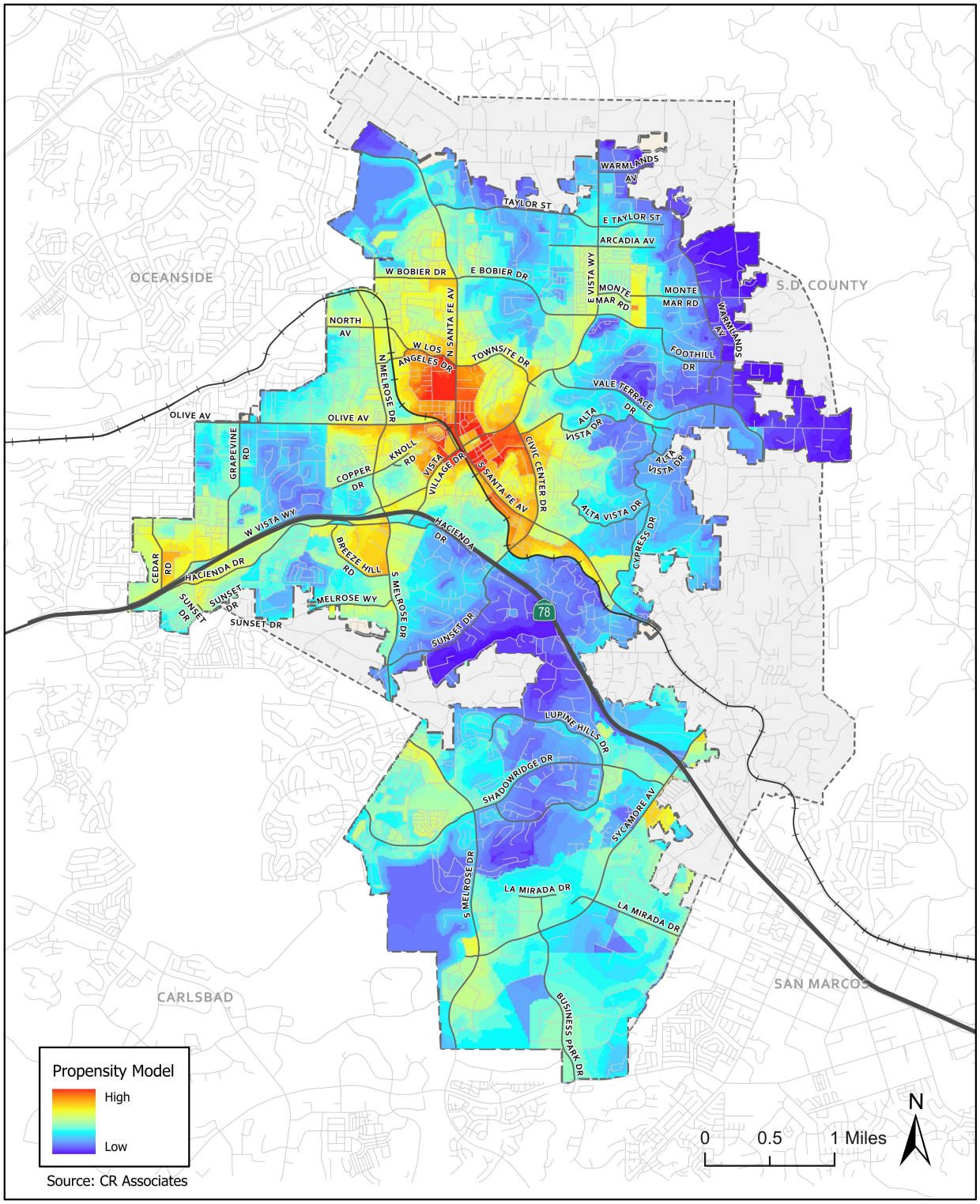
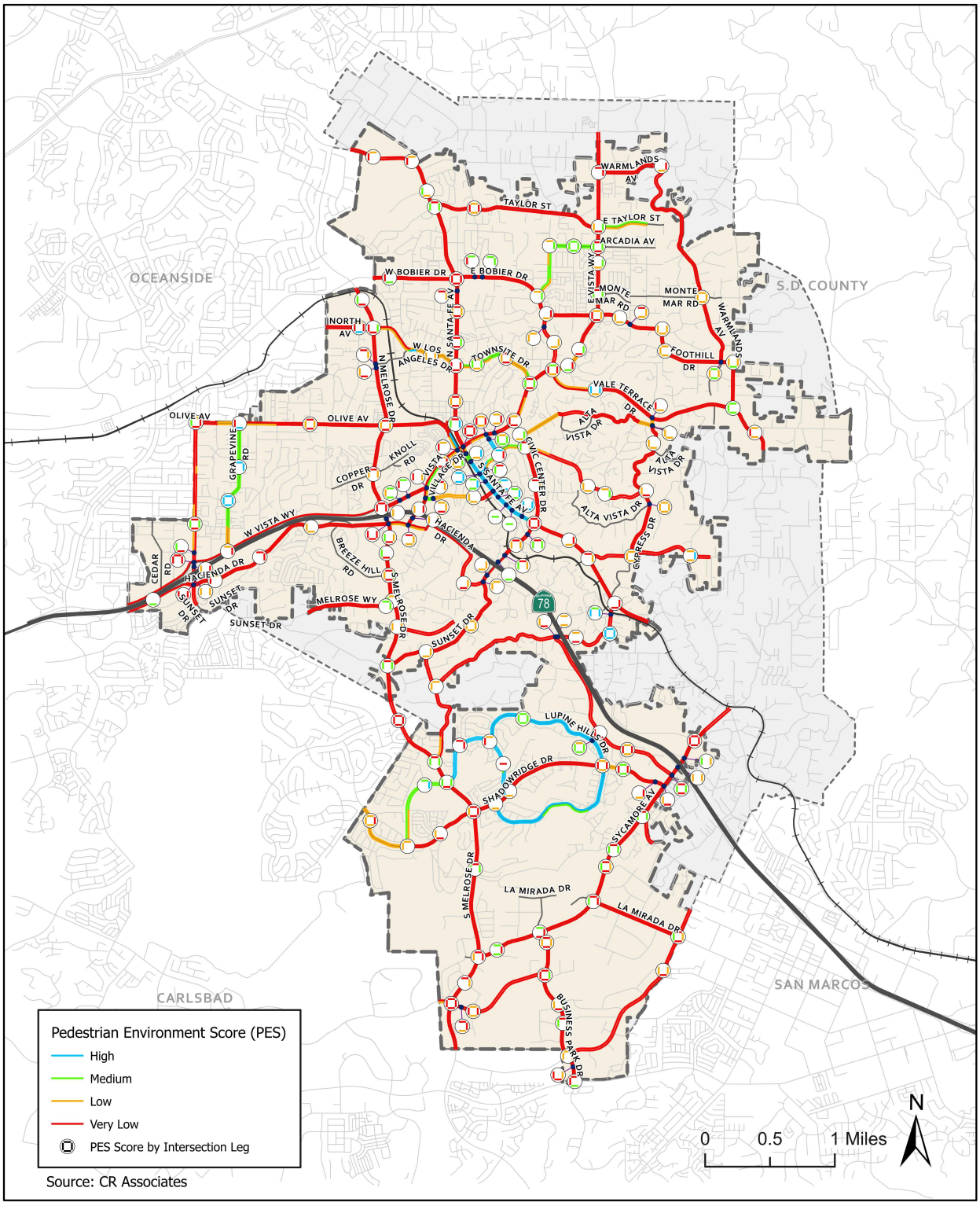


Figure 4.22: Pedestrian Environment Score (PES)



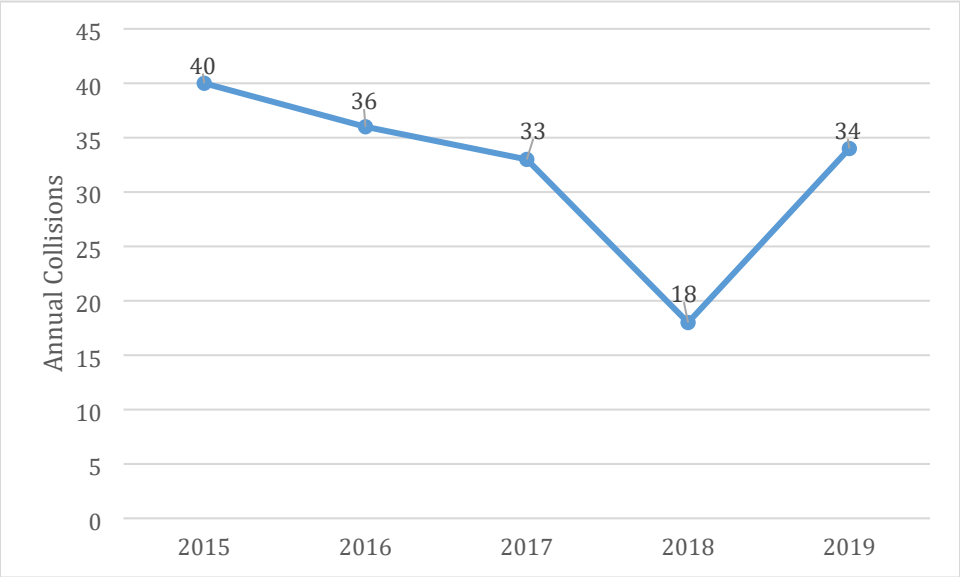
Source: CR Associates

As shown, pedestrian environment quality along walkways is 'Very Low' along most of the City's circulation element roadways. This was influenced by two factors mainly: the absence of sidewalks along many of the City's circulation network roadways – this influenced the 'Very Low' score of about 58 miles of walkways, and by the high posted speed limits along most City's circulation network roadways, many of which are in excess of 35 MPH. Some roadways received a 'High' PES score, including S. Santa Fe Avenue through Downtown Vista, and Lupine Hills Drive and Live Oak Road in southern Vista. The S. Santa Fe Avenue 'High' score was aided by the pedestrian-friendly improvements to the streetscape, which introduced a road diet, slower speeds, pedestrian scale lighting and traffic calming. The 'High' scores along the roadways in southern Vista were influenced by low posted speed limits and sidewalks with shade producing elements. Many of the 'High' scoring crossing legs were also along S. Santa Fe Avenue in Downtown Vista, where some of the streetscape improvements enhanced the crossing locations with curb extensions and median pedestrian refuges (at the roundabout crossings).

4.4.4 Pedestrian Safety

During the 5-year period (2015-2019), a total of 161 pedestrian-involved injury collisions were reported. **Figure 4.23** displays pedestrian collisions by year.

Figure 4.23: Pedestrian Collisions by Year (2015 – 2019)



Source: Vista Local Roadway Safety Plan (February 2021)

Figure 4.24 displays pedestrian-involved collisions across the City. As shown, collisions are largely concentrated at intersection locations along major roadways, including E. Vista Way, W. Vista Way, Vista Village Drive, N. Santa Fe Avenue, and Melrose Drive. A large cluster is prevalent along Vista Village Drive between W. Vista Way and Civic Center Drive, and N. Santa Fe Avenue between East Drive and W. California Avenue. These locations align with the areas demonstrating the highest propensity for active transportation travel as previously depicted in Figure 4.21.

Figure 4.24: Pedestrian Involved Collisions

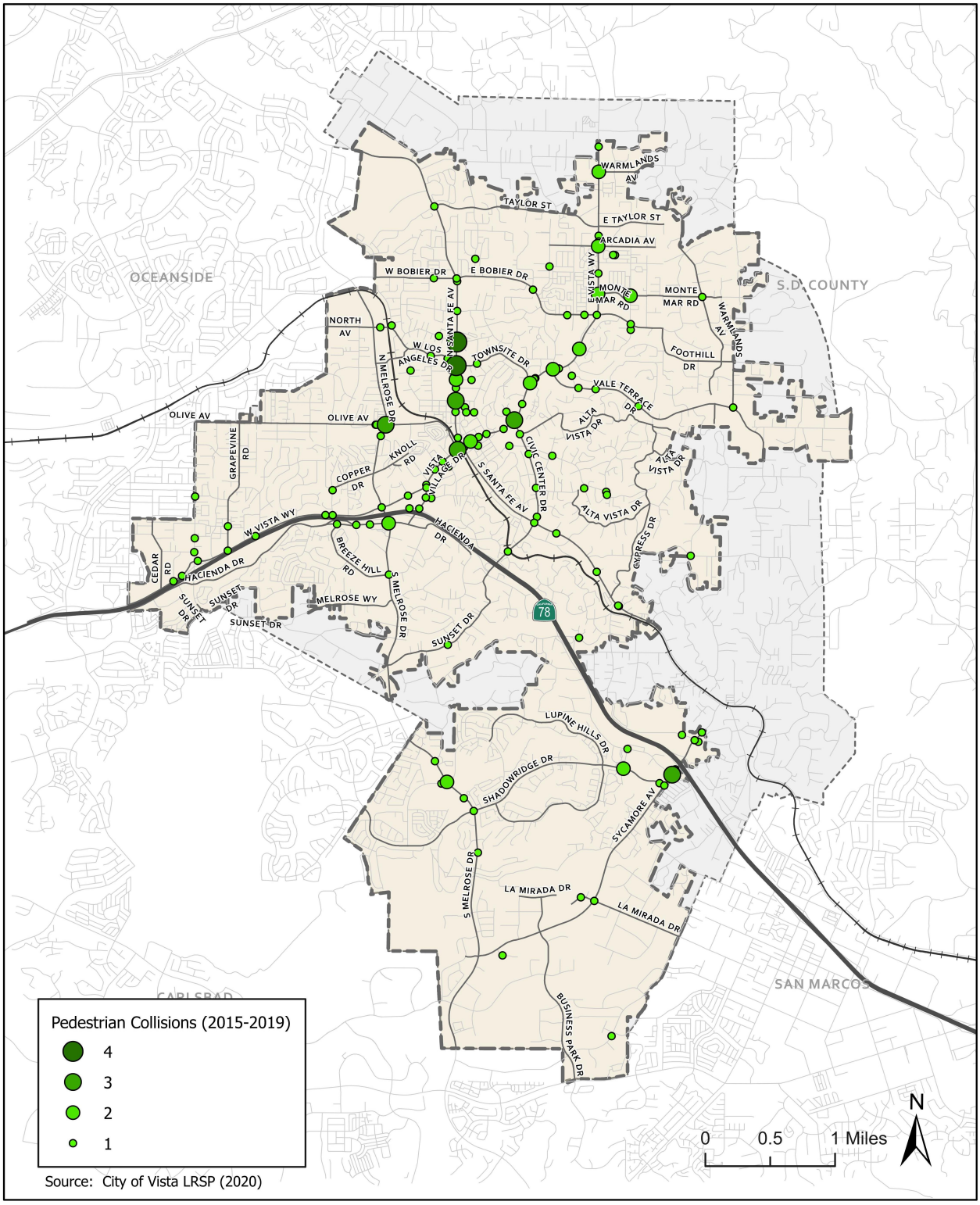


Table 4.15 identifies the intersections with the most pedestrian-involved injury collisions. Three of the seven locations with three or more collisions occurred along N. Santa Fe Avenue, including the two locations tied for most in the City.

Table 4.15: Leading Pedestrian Collision Locations (2015 – 2019)

Rank	Intersection	Number of Collisions
1	N. Santa Fe & W. Los Angeles Drive / Townsite Drive	4
2	N. Santa Fe Ave & East Drive	4
3	N. Melrose Drive & Olive Avenue	3
4	Olive Avenue & Vista Village Drive	3
5	Vista Village Drive / E. Vista Way & Civic Center Drive	3
6	N. Santa Fe Avenue & California Avenue	3
7	Sycamore Avenue & Thibodo Road / Plumosa Avenue	3

Source: Vista Local Roadway Safety Plan (February 2021)

The seven violation codes attributed to the most pedestrian injury collisions are displayed in **Table 4.16**. Combined, these violations were assigned to almost 90 percent (142 of 161 collision records) of all pedestrian involved collisions. The violations indicate incidents of both pedestrians and motorists engaging in unsafe behaviors.

Table 4.16: Leading Pedestrian Collision Violation Codes (2015 – 2019)

Violation Code	Description	Number of Collisions
21954	Pedestrian outside crosswalk	60
21950	Pedestrian crosswalk violation	51
21456	Failure to yield at the right-of-way to pedestrians crossing the road at an intersection within a marked or unmarked crosswalk	9
21955	Jaywalking	8
21952	Failure to yield to right-of-way to approaching pedestrian over or upon a sidewalk	5
21956	Pedestrian walking at edge of roadway	5
21453	Running a red light	4

Source: Vista Local Roadway Safety Plan (February 2021)

The most common violation code reported, 21954, involves pedestrians crossing at improper locations or times. Consideration may be given to implement additional marked crossings if they meet crosswalk warrants, including sufficient sight distance. Locations with high incidents of these violations, or high observations of mid-block crossings, may also be addressed through educational and/or enforcement programs, or traffic calming measures to reduce the potential of severe/fatal collisions.

The second leading violation code cited, 21950, is due to drivers failing to yield to pedestrians when the pedestrian is crossing at a correct location. Addressing this may include treatments that define where drivers are to stop or yield, help alert drivers to anticipate pedestrians, reduce conflicts, give pedestrians priority, and improve pedestrian visibility to drivers. Examples of potential solutions may include:

- High visibility crosswalks with advance stop bars
- Enhanced signage
- Right-turn on red restrictions at signalized intersections
- Conversion of permissive left-turn signal phasing to protected left-turn phasing
- Lead pedestrian intervals at signalized intersection

Bicycle Mobility

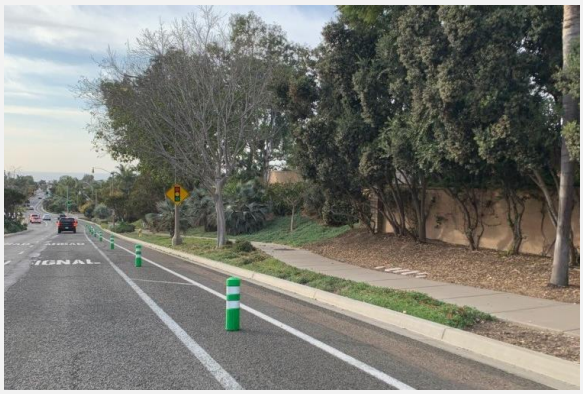
Bicycling is an important consideration for mobility within a city. In recent years, bicycling has experienced a resurgence, both in terms of ridership and infrastructure planning and construction. As both commuter and recreational bicycle use continue to grow, bicycling is increasingly viewed as one or many potential solutions that can help address societal issues, such as traffic congestion, greenhouse gas emissions, public health, transportation costs, and built-out environments.

Four different types – or classifications – of bicycle facilities are recognized in California, including Class I bike paths (also known as multi-use paths), Class II bike lanes, Class III bike routes, and Class IV separated bikeways (also known as protected bikeways or cycle tracks). **Table 4.17** describes the typical characteristics of each bicycle facility classification.

Table 4.17: Bicycle Facility Classifications

Bicycle Facility	Description
	**Class I – Bike Path:** Also referred to as a multi-use paths or shared-use paths, Class I facilities provide a completely separated right-of-way designed for the exclusive use of bicycles and pedestrians with crossflows by motorists minimized. Bike paths can provide connections where roadways are non-existent or unable to support bicycle travel. The minimum paved width for a two-way bike path is eight feet, with a two-foot wide graded area adjacent to the pavement. *Inland Rail Trail pictured*
	**Class II – Bike Lane:** Provides a striped lane designated for the exclusive or semi-exclusive use of bicycles with through travel by motor vehicles or pedestrians prohibited. Bike lanes are one-way facilities located on either side of a roadway. Pedestrian and motorist crossflows are permitted. Additional enhancements such as painted buffers and signage may be applied. The minimum bike lane width is five feet, or six feet when posted speeds are greater than 40 miles per hour. *Vista Village Drive pictured*

Table 4.17: Bicycle Facility Classifications

Bicycle Facility	Description
	**Class III – Bike Route:** Provides shared use of traffic lanes with cyclists and motor vehicles. Routes can be identified by signage and/or shared lane markings called "sharrows." Bike routes are best suited for low-speed, low-volume roadways with an outside lane of 14 feet or greater. Bike routes provide network continuity or designate preferred routes through corridors with high demand. Traffic calming features such as speed humps, traffic circles, and curb extensions can be used to help keep traffic speeds and volumes low, enhancing the comfort along these shared use facilities. *S. Santa Fe pictured*
	**Class IV – Separated Bikeway:** Also referred to as protected bikeways or cycle tracks, Class IV facilities provide a right-of-way designated exclusively for bicycle travel within the roadway that is physically protected from vehicular traffic. Cycle tracks can provide for one- or two-way travel. Examples of physical separation include grade separation, flexible posts, railing, planters, or on-street parking. The minimum bike lane width is five feet, while the minimum separation width or buffer area is two feet. *Leucadia Boulevard in Encinitas pictured*

Source: CR Associates (2022)

4.4.5 Bicycle Network Connectivity

Figure 4.25 displays the City's existing bicycle facilities. **Table 4.18** identifies the existing bicycle mileage by classification. Vista's bicycle network is currently comprised of Class I, II, and III facilities, with bike lanes making up approximately 75 percent of the network.

Table 4.18: Existing Bicycle Network Mileage by Classification

Classification	Existing Mileage
Class I Bike Path	**0.8**
Class II Bike Lanes	**25.8**
Class III Bike Route	**6.8**
Class II/III (Bike Lanes/Bike Route)	**0.4**
Total Network Mileage	**33.8**

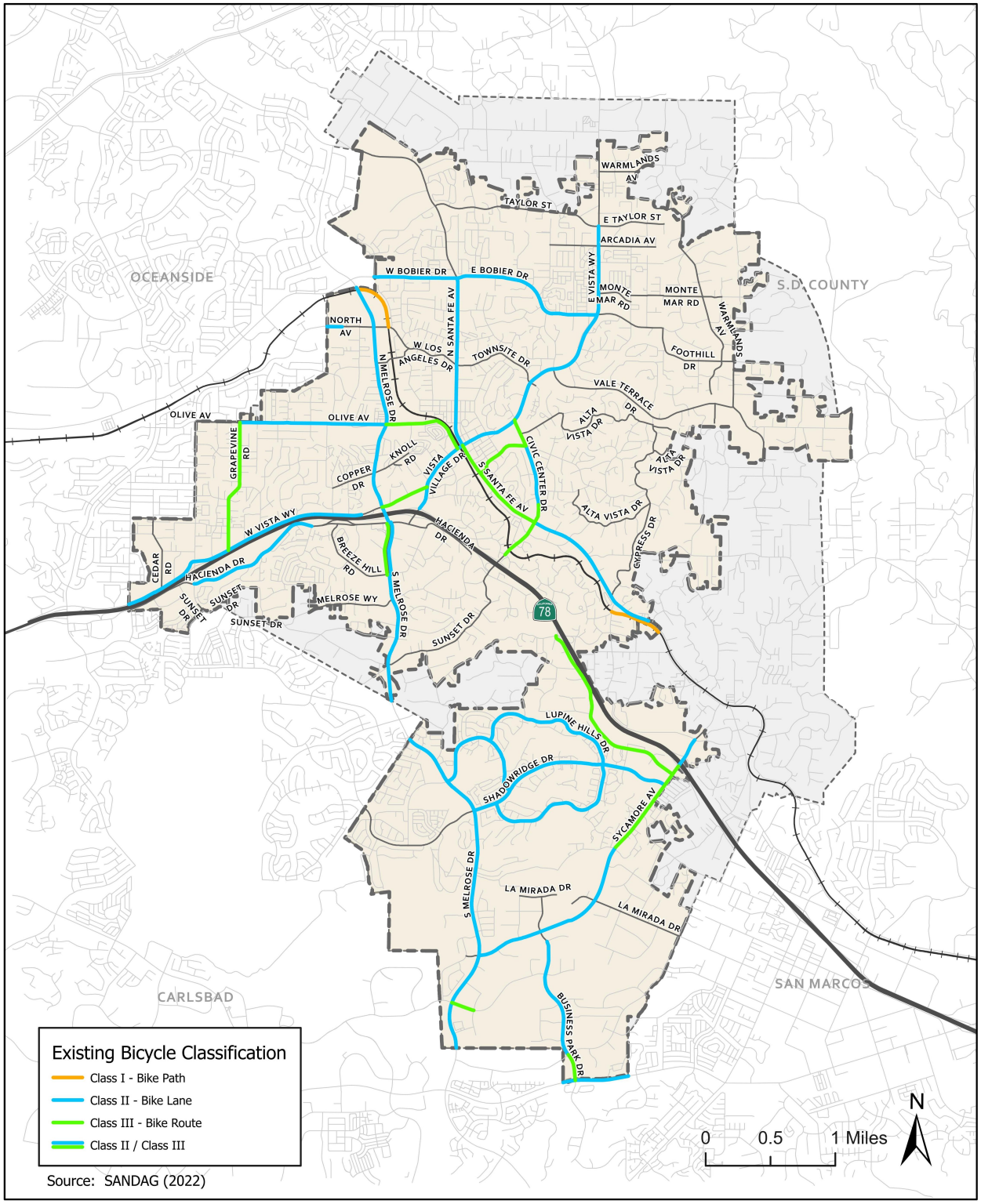
Source: CR Associates (2022)

The network provides good coverage throughout the City with facilities interconnected to one another. All Sprinter stations can be accessed via bike paths or bike lanes. Towards the northeast, largely segregated land uses can be observed. The City has many large single-family residential neighborhoods with rural characteristics, while commercial uses are largely concentrated along arterials. This potentially results in long distances for commute or shopping trips but may benefit recreational riding internal to neighborhoods and to destinations like local parks or elementary schools. The natural topography presents another challenge for cyclists, particularly in the north-south directions. The hills and valleys combined with high-speed arterials may act as deterrents.

Class III bike routes are the primary facility in areas with more constrained roadways and built out environments. Bike routes should generally be placed only along roadways having lower posted speed limits and low levels of traffic volumes. Traffic calming features, such as curb extensions, traffic circles, and speed humps can be deployed along these routes to facilitate slower traffic speeds and improve the comfort and safety for bicyclists. For example, bike routes on roadways with higher speeds or traffic volumes, like S. Melrose Drive and Sycamore Avenue, may deter the less experienced riders and result in mostly avid cyclists using these routes.

Bike lanes largely comprise the network at the south of the City where the development patterns include wider roads. Many of the arterials with bike lanes have high posted speed limits that may result in uncomfortable conditions for cyclists. Examples include Sycamore Avenue, S. Melrose Drive, Shadowridge Drive, and Business Park Drive.

Figure 4.25: Existing Bicycle Facilities



The existing Class I facilities are components of the regional Inland Rail Trail (IRT). The Inland Rail Trail is a 21-mile Class I bike path that provides an east-west connection between the Cities of Oceanside, Vista, San Marcos, and Escondido, and a portion of the unincorporated County of San Diego. The IRT has four phases and is an important element of the San Diego Regional Bike Plan, and its completion will help create an interconnected regional bike network. Currently Phase 1 and Phase 2 of the IRT have been completed. Phase 3 plans to construct the one-mile segment that will run between Mar Vista Drive and Civic Center Drive and is anticipated to begin construction in 2023. Phase 4 plans to construct the two-mile segment that will run between Civic Center Drive and North Drive and is anticipated to begin construction in 2026.

Bicycle parking is an additional component of the bicycle network. Bicycle parking can be categorized as intended for short-term or long-term parking. Short-term parking is intended for two hours or less and generally consists of single or multiple bike racks that can come in a variety of forms. Long-term parking is intended for periods greater than two hours and may serve commuters, employees, students, or residents. The City of Vista's Bicycle Master Plan includes guidance on bicycle parking siting and design considerations.

Bike racks are common at shopping centers and schools throughout the City, as well as City Hall. Bicycle lockers are present at all Sprinter stations.

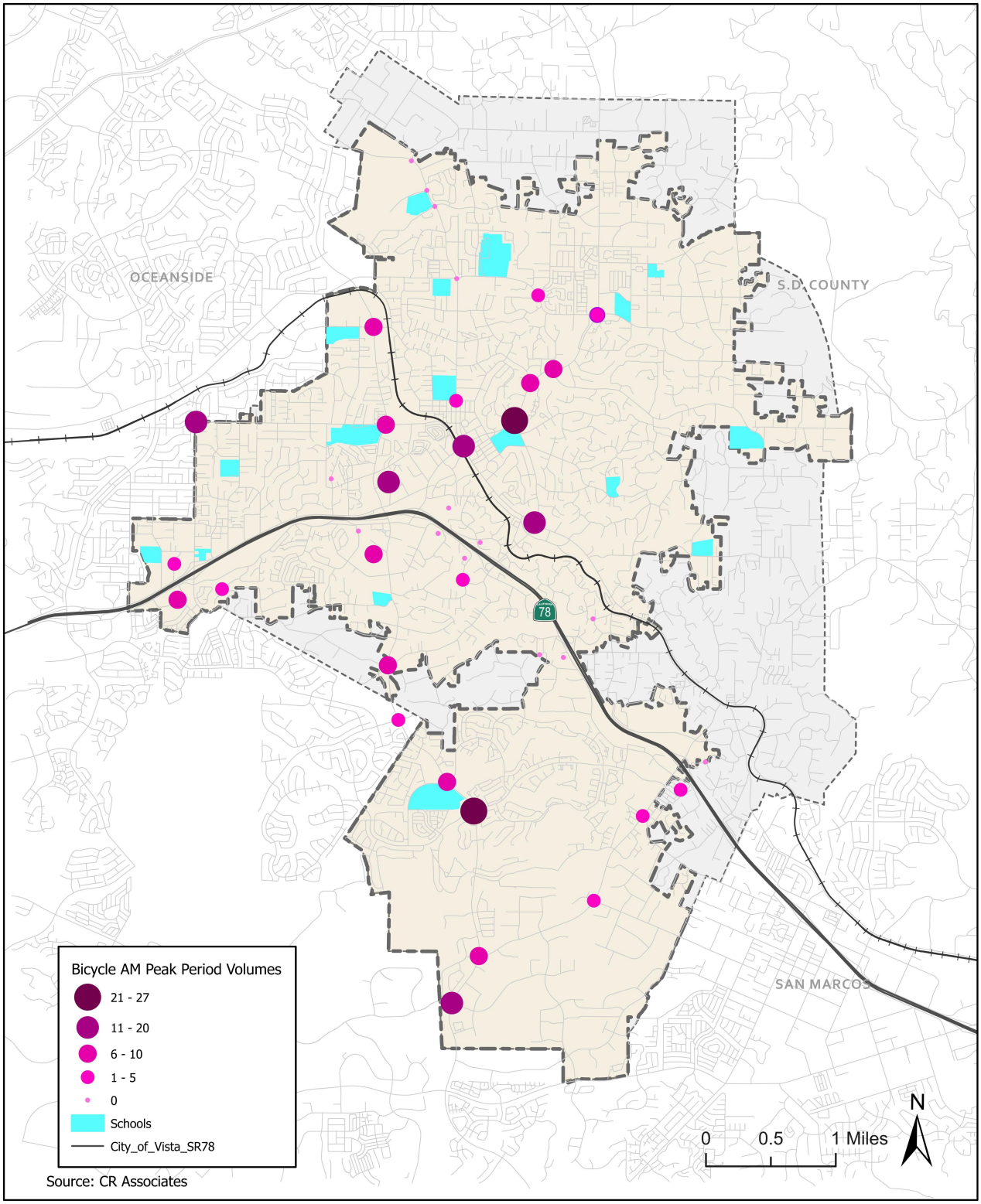
Bikes are also accommodated on public transportation services. North County Transit District buses can accommodate two-three bikes. Rail services such as the Sprinter also has provisions for bikes.

4.4.6 Bicycle Demand

The number of people on bicycles were counted at the same 40 intersections at which data was collected for all modes and during the same time frames, from 7 – 9 AM and from 4 – 6 PM. As previously noted, this data helps the understanding of how the pedestrian and bicycle networks are currently used.

Figure 4.26 displays the total number of bicyclists observed in the morning commute hours, **Figure 4.27** displays the total number of bicyclists observed in the afternoon commute hours, and **Figure 4.28** displays the AM and PM peak periods bicycle movements at the respective intersection legs.

Figure 4.26: AM Peak Period Bicycle Counts



Source: CR Associates

Figure 4.27: PM Peak Period Bicycle Counts

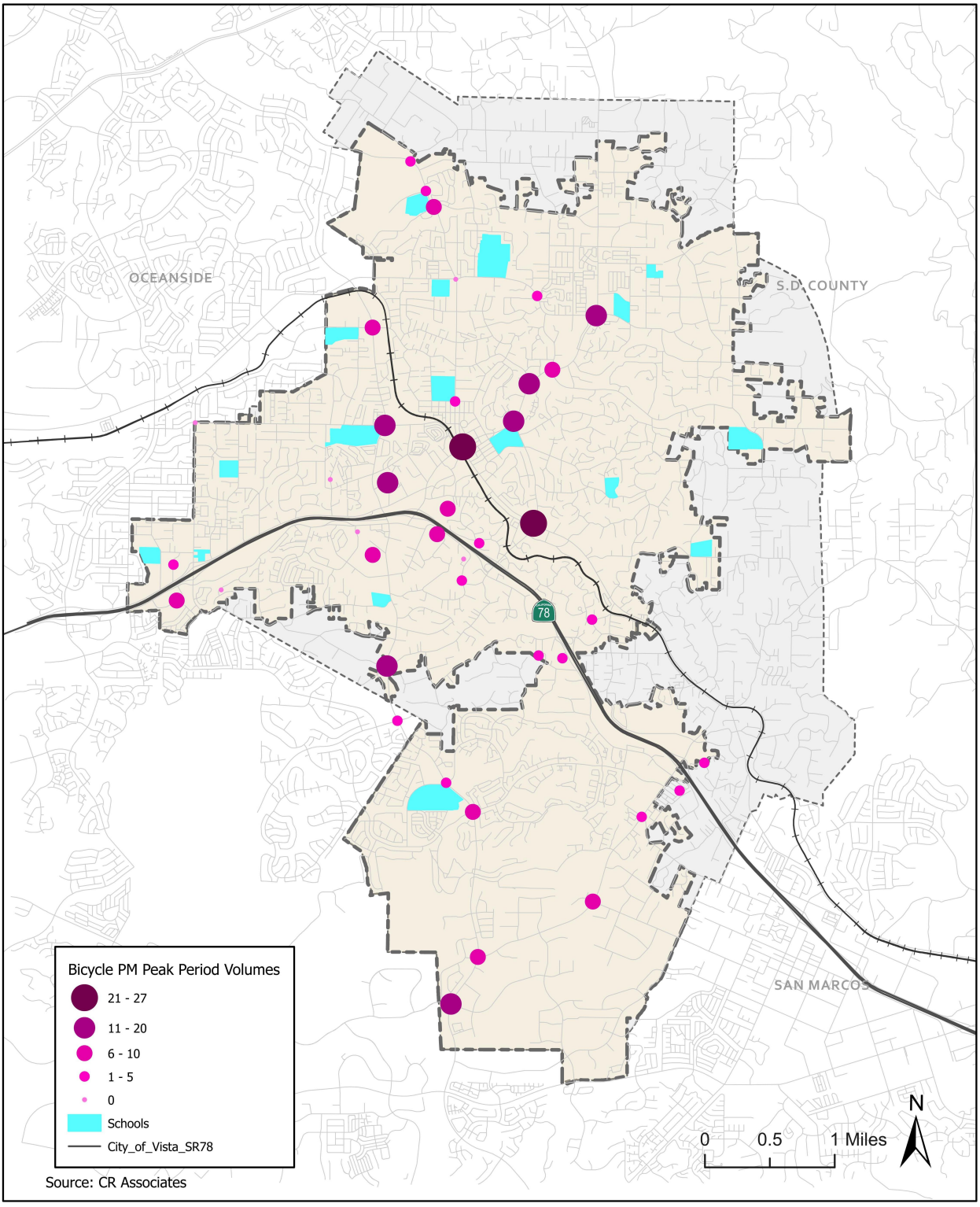


Figure 4.28: AM/PM Peak Period Bicycle Volumes – Existing Conditions

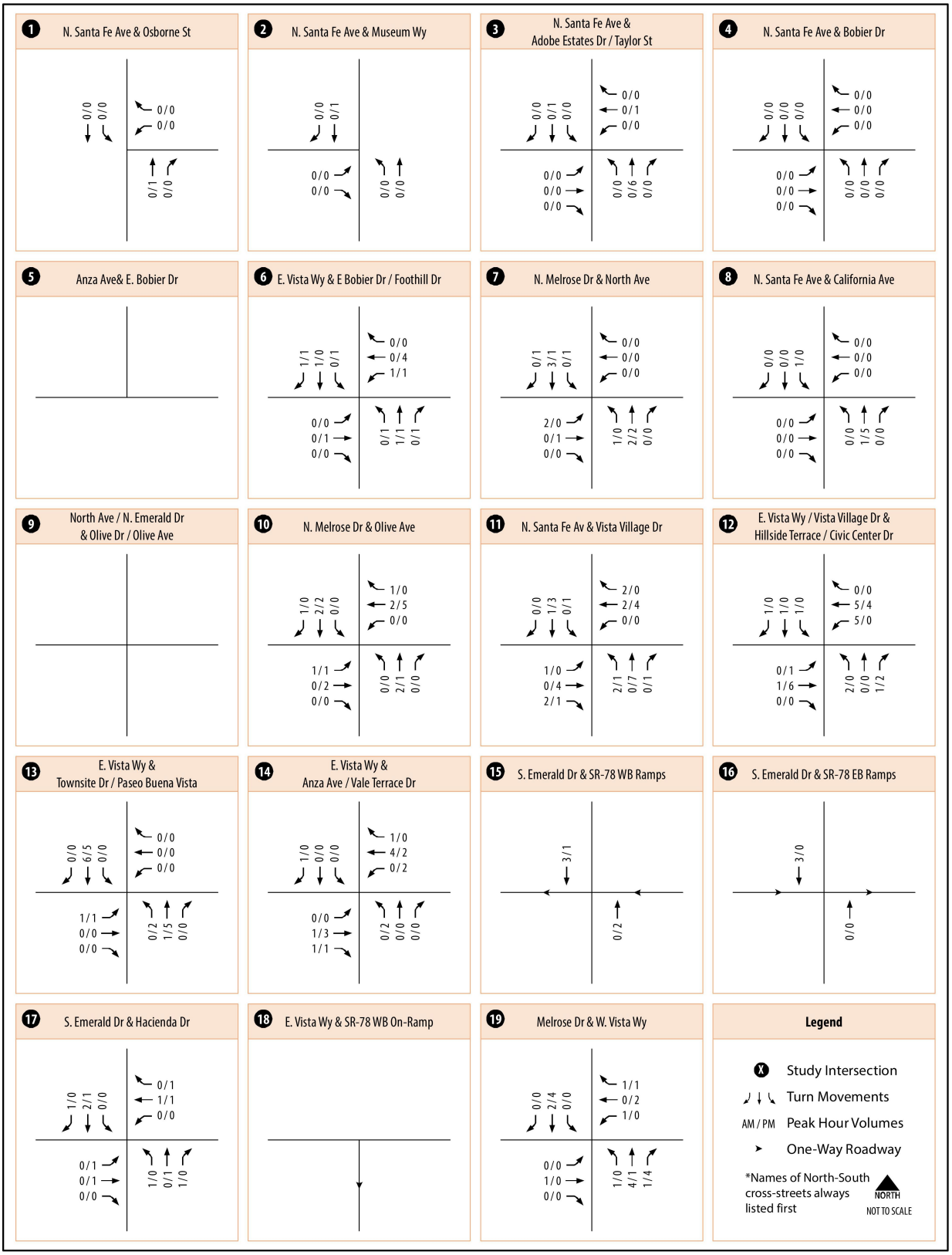


Figure 4.28: AM/PM Peak Period Bicycle Volumes – Existing Conditions

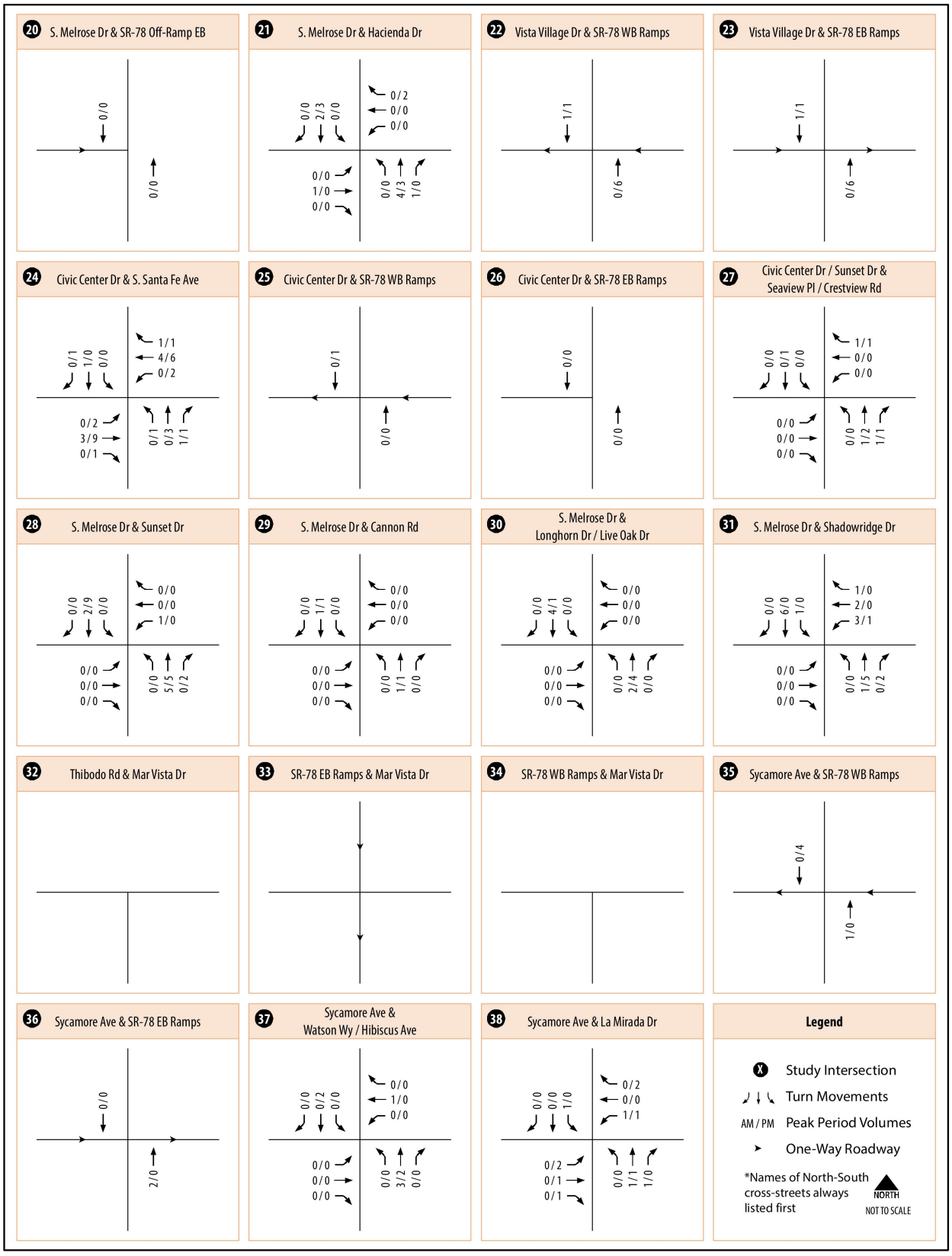
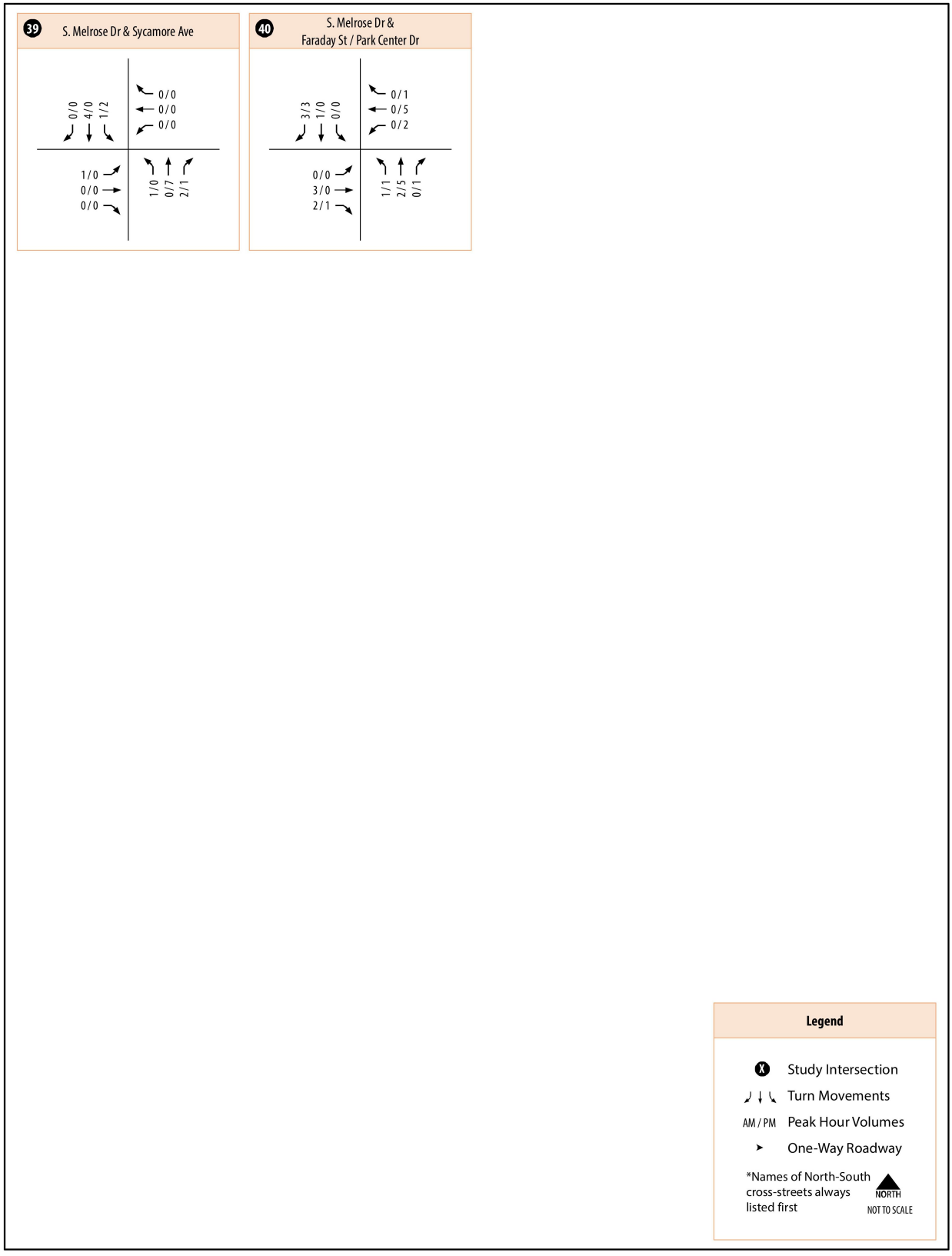


Figure 4.28: AM/PM Peak Period Bicycle Volumes – Existing Conditions



The locations with the highest observed morning commute bicycle volumes include:

- Civic Center – Hillside Terrace & E. Vista Way – Vista Village Drive (23)
- S. Melrose Drive & Live Oak Road – Longhorn Drive (14)
- N. Santa Fe Avenue & Vista Village Drive (13)
- S. Melrose Drive & Faraday Avenue – Park Center Drive (12)
- S. Melrose Drive & W. Vista Way (11)

The locations with the highest observed afternoon commute bicycle volumes include:

- Civic Center Drive & S. Santa Fe Avenue (27)
- N. Santa Fe Avenue & Vista Village Drive (22)
- S. Melrose Drive & Faraday Avenue – Park Center Drive (19)
- Civic Center Drive – Hillside Terrace & E. Vista Way – Vista Village Drive (18)
- S. Melrose Drive & Sunset Drive (16)

In addition to bicycle counts collected at the study intersections, bicycle latent demand was also evaluated through the active transportation propensity model presented in the Pedestrian Demand section.

The arterials near areas with higher propensity for active transportation trips are generally well-served by existing bicycle facilities. The importance of completing the Inland Rail Trail is emphasized by the high concentration of active transportation trip generators and attractors along the Inland Rail Trail corridor such as the Downtown area. Completing this project will provide a high-quality link to Vista's bicycle network, that is comfortable for all users and access major activity centers.

4.4.7 Bicycle Facility Quality

The bicycle environment in Vista was assessed using the bicycle Level of Traffic Stress (LTS) methodology for characterizing cycling environments, as described in Section 4.3.3. **Figure 4.29** shows the LTS results for all public roadways and paths in the City, excluding freeways.

Figure 4.29: Bicycle Level of Traffic Stress

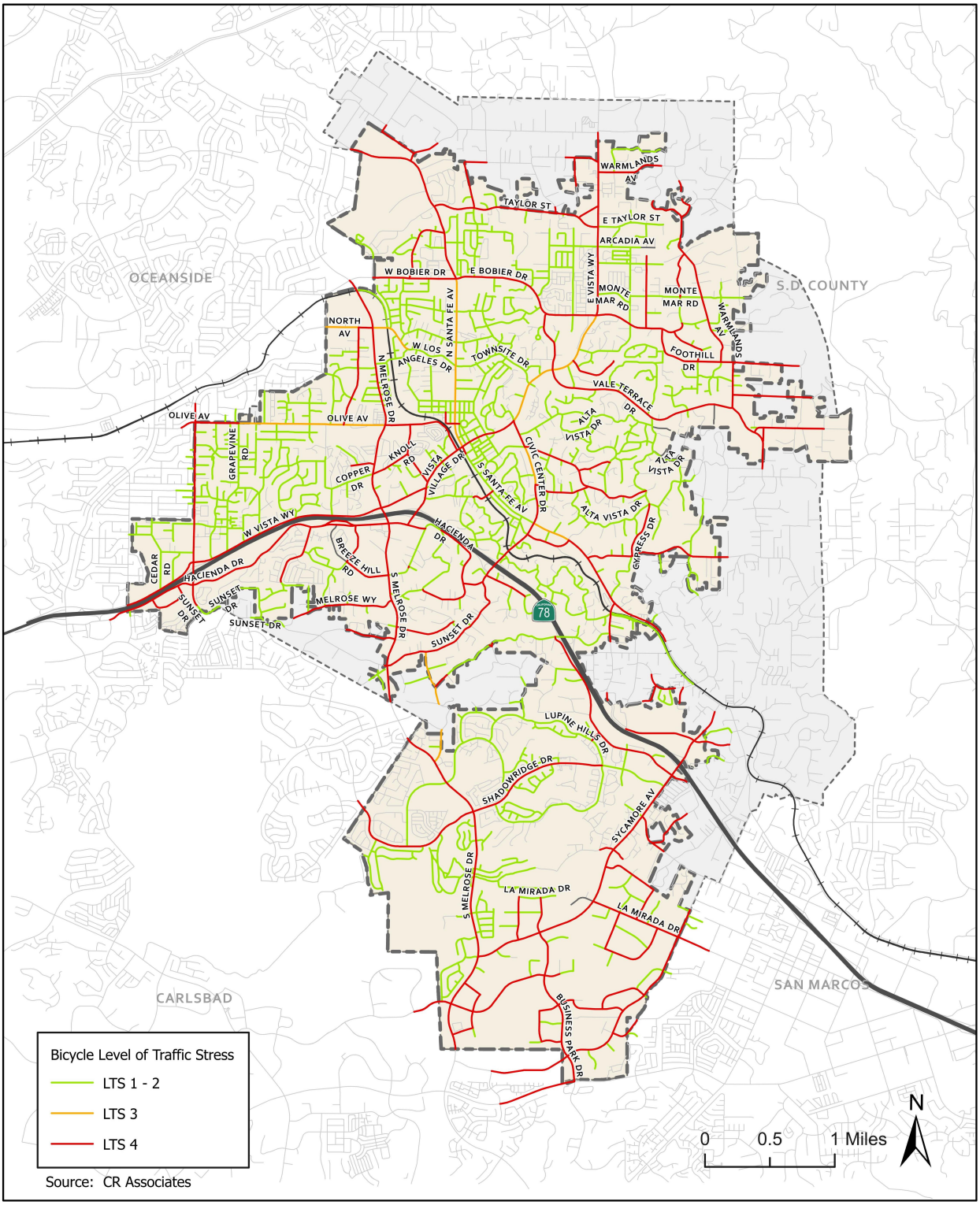


Table 4.19 summarizes the scores. Approximately 60 percent of bikeable roadways exhibit LTS 1 or 2 characteristics, meaning they are comfortable for most levels of cyclists, while approximately 37 percent of the network was scored as LTS 4. The LTS 1 or 2 roadways are largely located within residential neighborhoods, while the surrounding arterials tend to exhibit LTS 3 or 4 conditions, making it difficult for cyclists to ride between neighborhoods or to most destinations under low stress conditions. All Class I segments are automatically scored as LTS 1, as they are completely separated from vehicles.

Table 4.19: Bicycle Level of Traffic Stress Results

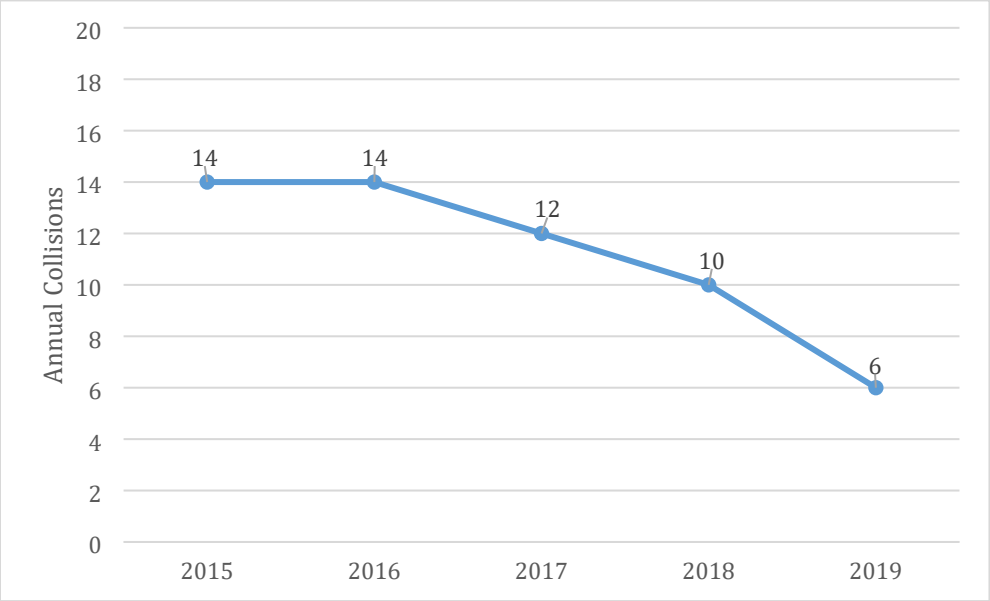
Level of Traffic Stress	Centerline Miles	%
LTS 1 or 2	113	60%
LTS 3	5.4	3%
LTS 4	69	37%
Total	**187.4**	**100%**

Source: CR Associates (2022)

4.4.8 Bicycle Safety

During the 5-year (2015-2019) period, a total of 56 bicycle-involved injury collisions were reported. **Figure 4.30** displays bicycle injury collisions by year. Annual collisions peaked in 2015 and 2016 with 14 collisions per year, while the other years ranged between 6 and 12 collisions per year.

Figure 4.30 Bicycle Collisions by Year (2015 – 2019)



Source: Vista Local Roadway Safety Plan (February 2021)

Figure 4.31 displays the location of the bicycle-involved injury collisions across Vista. As shown, collisions are largely concentrated at intersection locations along major roadways, including S. Melrose Drive, N. Santa Fe Avenue, E. Vista Way, Civic Center Drive, W. Vista Way, and Vista Village Drive.

Table 4.20 identifies the individual locations with the greatest number of bicycle collisions. As shown, the two of the three locations are located along W. Vista Way.

Table 4.20: Leading Bicycle Collision Locations (2015 – 2019)

Rank	Intersection	Number of Collisions
1	Emerald Dr & W Vista Way	2
2	N. Melrose Dr & W Vista Way	2
3	Lemon Avenue & Raintree Place	2

Source: Vista Local Roadway Safety Plan (February 2021)

Table 4.21 identifies the seven most frequent violation codes attributed to bicycle collisions. Multiple violations definitions indicate instances where bicyclists were riding against traffic or improperly positioned within the roadway. Unsafe movements, unsafe speeds, and failure to yield the right-of-way were other common violations.

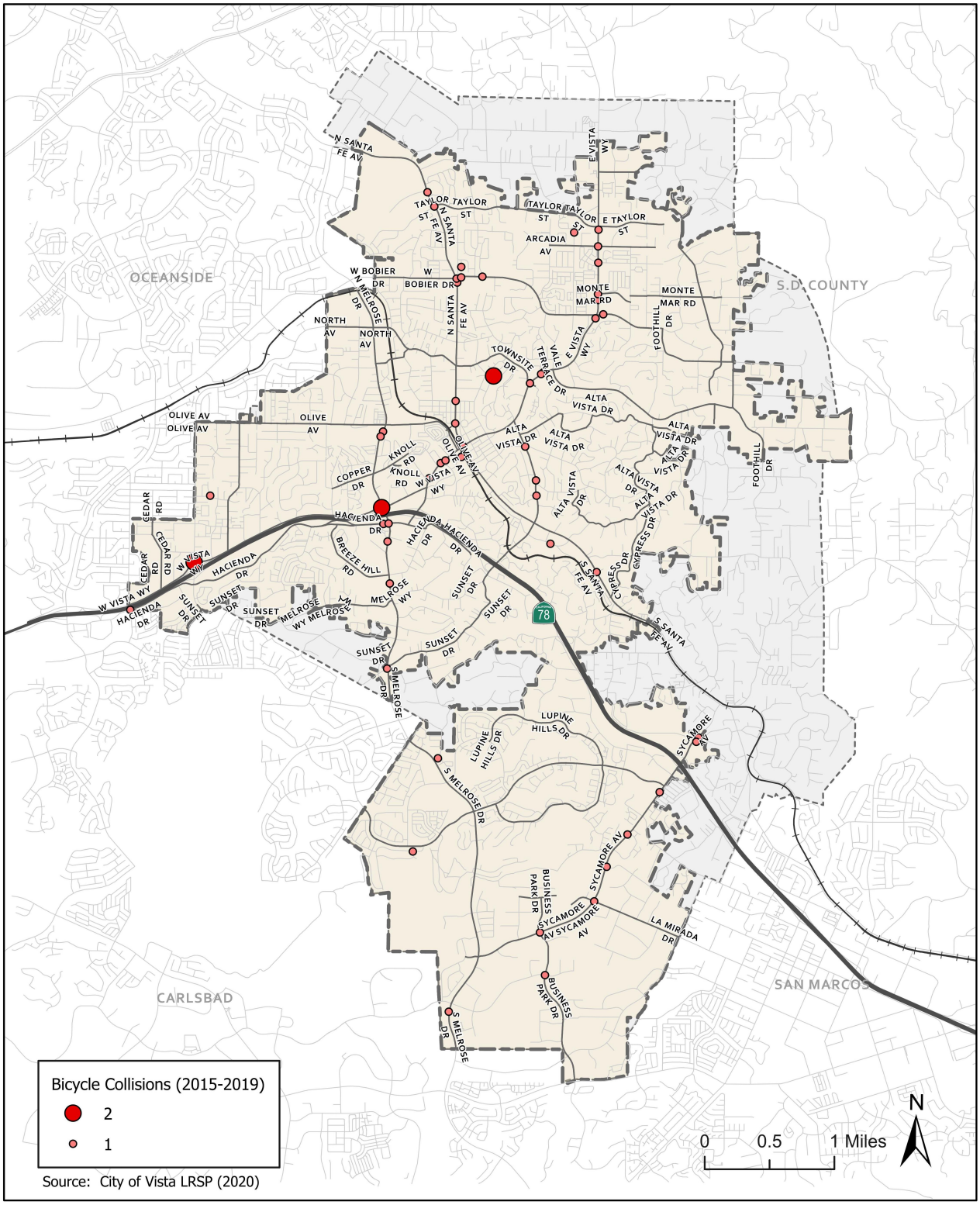
Table 4.21: Leading Bicycle Injury Collision Violation Codes (2015 – 2019)

Violation Code	Description	Number of Collisions
21650	Right hand lane violation	14
21804	Failure to yield when entering from an alley or driveway	7
22107	Unsafe lane change	6
22350	Violating basic speed law	5
21453	Running a red light	4
22100	Failure to safely make right-hand or left-hand turn	4
21208	Bicyclist failed to ride/maneuver appropriately within and/or from bicycle lane	4

Source: Vista Local Roadway Safety Plan (February 2021)

Continuing the educational offerings to inform bicyclists about safe riding behaviors and raising driver awareness to better anticipate the presence of cyclists may help encourage safe riding and driving. Similarly, the provision of high-quality infrastructure dedicated to bicyclists can encourage cyclists to operate within designated spaces and better avoid conflicts with motorists.

Figure 4.31: Bicycle-Involved Collisions



Transit

This section identifies the existing public transportation routes and stops, ridership and demand, as well as quality of transit stops and services. Pedestrian and bicycle collision data near transit stops is also presented, considering many people walk or ride a bicycle to access transit stops.

Public transportation can provide many societal benefits, such as improved mobility options, reduced roadway congestion, and reduced greenhouse gas emissions. To realize these benefits, many variables must align. Transit offerings must be efficient and well-connected, serve trip origins and key destinations, and be dependable. Transit planning is a coordinated effort due to its regional importance, involving local jurisdictions, SANDAG and the North County Transit District (NCTD).

The currently adopted Circulation Element identifies a transit-specific goal for the City, supported by several policies. The goal reads as follows:

- Encourage alternative forms of transportation to private automobiles that meet the needs of all City residents by providing improved access to transit connections to employment and other activity centers.

The City of Vista Climate Action Plan (CAP) (2021) recognizes the important role public transit can play towards reducing greenhouse gas emissions. A variety of strategies identified in the CAP are based around transit, including encouraging smart growth development concentrated near public transit stops, a transit subsidy program, improvements to transit stop amenities, and enhanced walking and biking connections to transit stops. These strategies will help improve access to transit services and improve the comfort of transit riders which further encourages use. Focusing development near transit stops may increase the viability of transit as a commute mode for future community members.

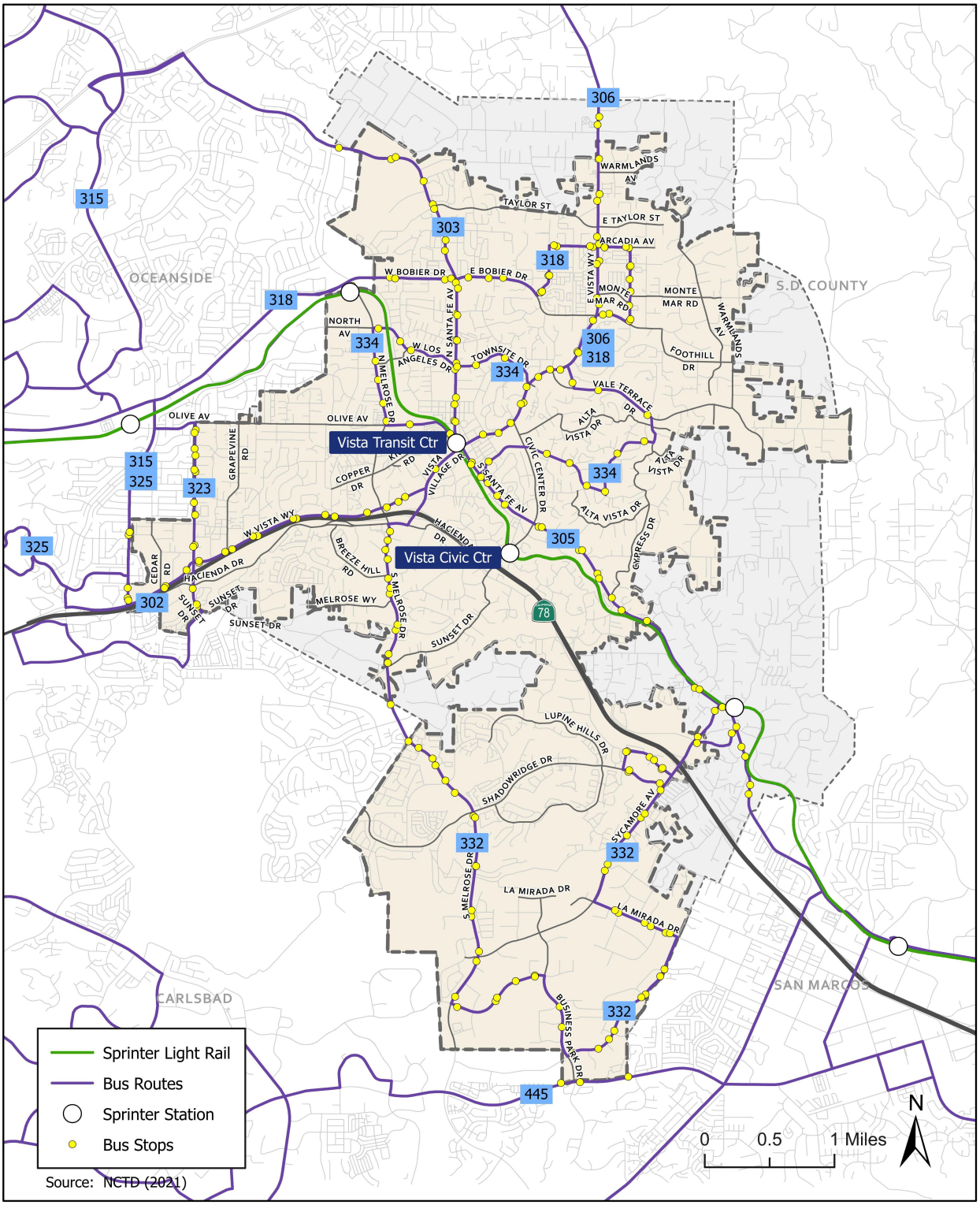
There are two Sprinter stations located in the City. One of them, Vista Transit Center serves as the City's main transit hub with numerous connecting Breeze bus services. Civic Center Sprinter Station, however, is relatively isolated to from population density and activity centers, and has no connecting bus services.

4.4.9 Transit Routes and Stops

Figure 4.32 displays the existing public transportation routes and stops within Vista. Most neighborhoods have transit options running along arterials surrounding the periphery. Transit is less accessible in neighborhoods with lower residential density, such as Shadowridge Heights, Twin Oaks, and neighborhoods in central Vista.

Appendix G provides a detailed description of the existing transit services (bus and rail) including Sprinter stations and frequency, individual route maps, route descriptions, and service frequency for each transit route within the City.

Figure 4.32: Existing Public Transportation Routes and Stops



4.4.10 Transit Demand and Ridership

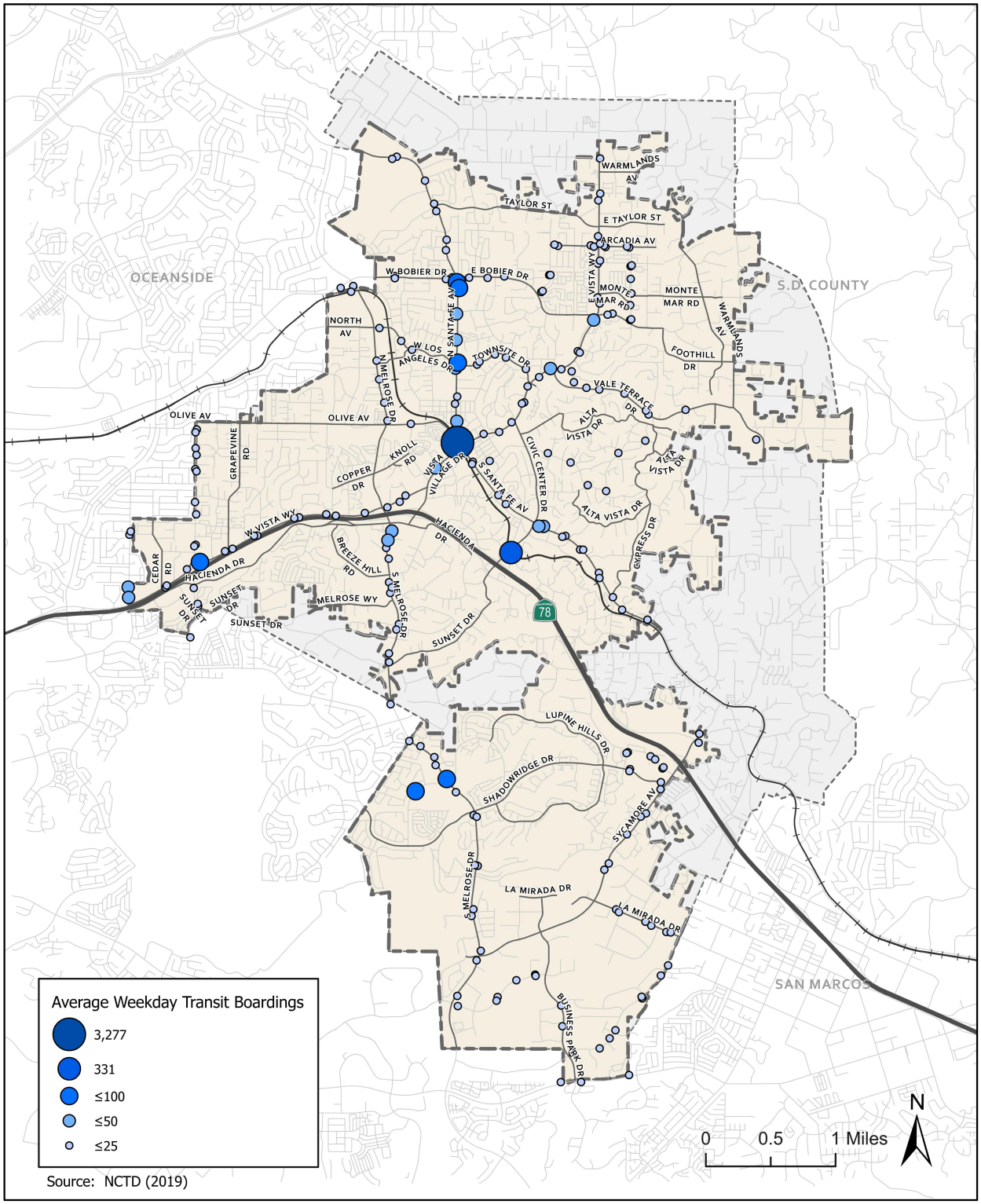
Estimated daily transit ridership by stop is presented in **Figure 4.33**, representing data obtained from NCTD for FY2019. Greater ridership is generally prevalent at both transit centers including Sprinter stations and bus stops along N. Santa Fe Avenue which is primarily served by Route 303.

The ten stops with the greatest total estimated daily ridership (boardings) are identified in **Table 4.22**, along with the routes serving the locations.

Table 4.22: Transit Stops with Greatest Estimated Daily Ridership (FY2019)

Transit Stop	Estimated Daily Boardings	Routes
27007 – Vista Transit Center	3,277	Sprinter, 302, 303, 305, 306, 318, 332, 334
27008 – Civic Center	331	Sprinter
21174 - N Santa Fe Ave / Bobier Dr	100	303
21672 - N Santa Fe Ave / Bobier Dr	86	332
21666 - Melrose Dr / Live Oak Rd	75	302
20928 - N Santa Fe Ave / Orange St	66	332
20233 - W Vista Way / Emerald Dr	52	303
21170 - Melrose Dr / Longhorn Dr	51	303
21173 – N Santa Fe Ave / Los Angeles Dr	50	303
21670 - N Santa Fe Ave / Townsite Dr	47	306, 318

Figure 4.33: Public Transportation Ridership by Stop



4.4.11 Transit Quality

Transit Station Quality

NCTD's Bus Stop Development Handbook (2018) identifies four transit stop types: basic stops, bench stops, shelter stops, and station stops.

An inventory of amenities present at each stop was conducted by CR Associates (CRA) to better understand existing stop quality. **Appendix G** includes a table that identifies the amenities provided at each transit stop. The bus stop categories were assigned by average daily boardings and urban/suburban designation. A shaded cell in the table indicates a lacking amenity based on the guidelines for the respective stop (Table 4.9).

In 2019, NCTD issued a Staff Report identifying proposed improvements at 100 NCTD bus stops as part of an effort to improve transit stop access. Agencies were requested to fund – or identify funding sources – construction of the improvements proposed within their respective right-of-way. **Table 4.23** lists the 12 bus stops and proposed improvements identified in Vista.

Table 4.23: NCTD Recommended Transit Stop Improvements

Stop Name	Stop ID	Proposed Improvements
N. Santa Fe Avenue & Orange Street	20928	Construct sidewalk improvements to allow for ADA accessibility at this stop.
N. Santa Fe Avenue & East Drive	21671	Construct ADA compliant bus stop pad with sufficient room for installation of a bench and shelter.
Vista Village Drive & Camino Corto	20686	Construct ADA compliant bus stop pad with sufficient room for installation of a bench and shelter.
W. Vista Way & Cedar Road	21871	Construct ADA compliant bus stop pad with sufficient room for installation of a bench and shelter.
Melrose Drive & Buena Vista Drive	21165	Construct ADA compliant bus stop pad with sufficient room for installation of a bench and shelter.
N. Santa Fe Avenue & California Avenue	22560	Construct ADA compliant bus stop pad with sufficient room for installation of a bench and shelter.
N. Santa Fe Avenue & Pond Place	20926	Construct ADA compliant bus stop pad with sufficient room for installation of a bench and shelter.
N. Santa Fe Avenue & California Avenue	21171	Construct ADA compliant bus stop pad with sufficient room for installation of a bench and shelter.
N. Santa Fe Avenue & Taylor Street	21415	Construct ADA compliant bus stop pad with sufficient room for installation of a bench and shelter.
Melrose Drive & Buena Vista Drive	21660	Construct ADA compliant bus stop pad with sufficient room for installation of a bench and shelter.
Melrose Drive & 1510 (Sr Heights Apt)	22145	Construct ADA compliant bus stop pad with sufficient room for installation of a bench and shelter.
Melrose Drive & 1510 (Sr Heights Apt)	20075	Construct ADA compliant bus stop pad with sufficient room for installation of a bench and shelter.

Source: North County Transit District (2022)

Service Quality – On-Time Performance

On-time performance is an important indicator of service quality as it contributes to the users' perception of service reliability. NCTD defines on-time performance as between 59 seconds before and 5 minutes and 59 seconds behind the published schedule at the departure location. NCTD has an on-time performance standard of 90 percent for Breeze Bus and 98 percent for Sprinter.

Table 4.24 presents the on-time performance by route for the 11 NCTD Breeze Bus routes and Sprinter. Eight of the bus routes and the Sprinter met on-time performance targets. Three buses missed the on-time performance target of 90 percent. As part of the Circulation and Transportation Element update, transit signal priority will be evaluated along transit corridors which may help increase the on-time performance for bus routes.

Table 4.24: NCTD On-Time Performance

Route	% On-Time	Met Target
302	93.7%	Yes
303	90.8%	Yes
305	89.0%	No
306	92.3%	Yes
315	91.4%	Yes
325	90.8%	Yes
318	91.5%	Yes
323	91.9%	Yes
332	89.6%	No
334	95.3%	Yes
445	89.3%	No
Sprinter	98.1%	Yes

Source: North County Transit District (2022)

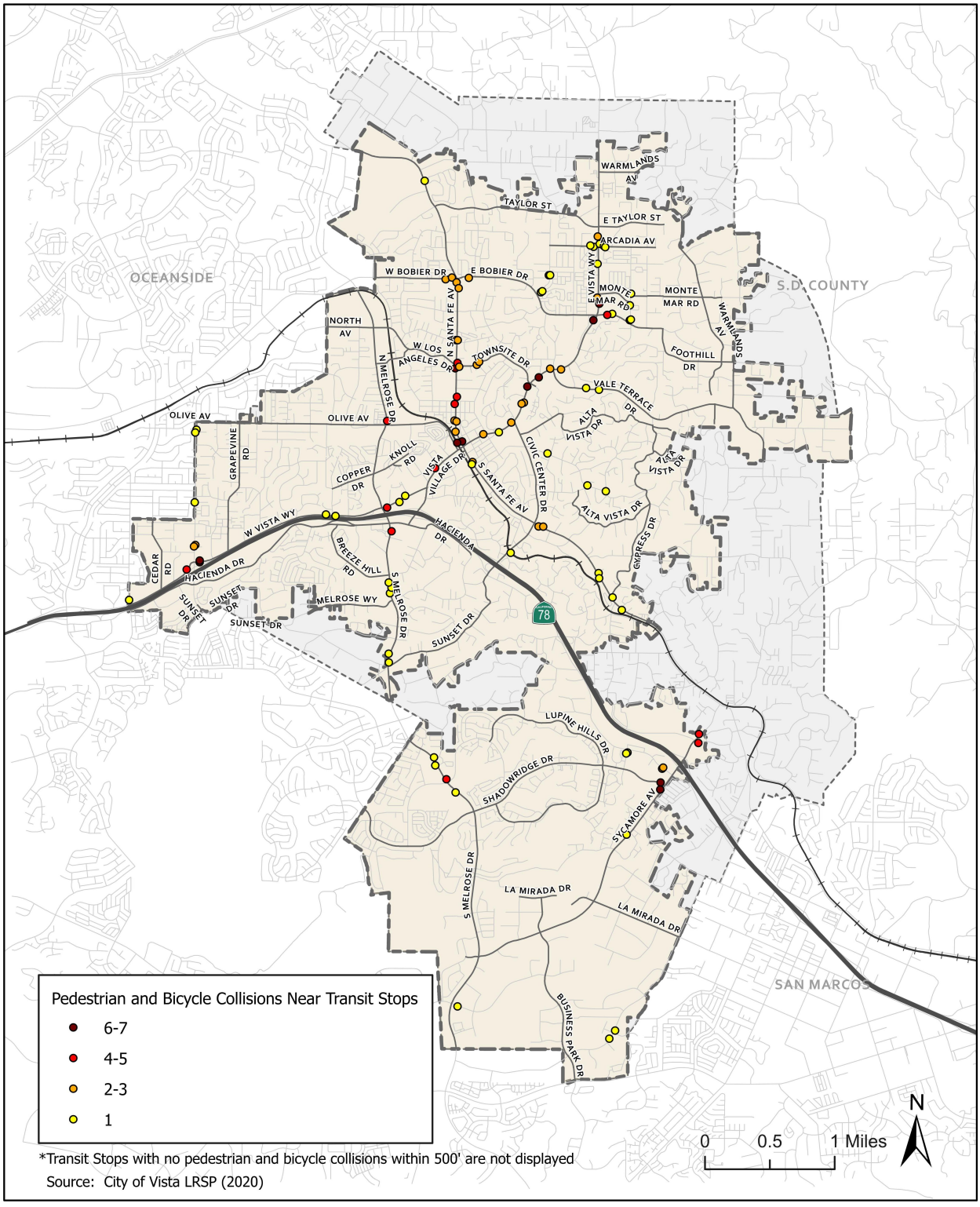
4.4.12 Safety Near Transit Stops/Stations

Safety was evaluated using pedestrian- and bicycle-involved collision records within 500 feet of all transit stops within the City of Vista. **Figure 4.34** displays transit stops with pedestrian and/or bicycle collisions within 500 feet – stops without records in the vicinity are not depicted. It is important to note that stops adjacent to each other may be counting the same collisions.

Locations with the greatest number of collisions nearby include the following:

- Emerald Drive & W. Vista Way
- N. Santa Fe Avenue & W. Los Angeles Drive / Townsite Drive
- N. Santa Fe Avenue & Vista Village Drive
- Townsite Drive & E. Vista Way
- E. Vista Way & E. Bobier Drive / Foothill Drive
- Vista Transit Center
- Sycamore Avenue / Shadowridge Drive

Figure 4.34: Pedestrian/Bicycle Collisions Near Transit Stops



Vehicular Mobility

Maintaining efficient vehicular operations is vital to the economy. City streets and the regional freeway system provide an interconnected network used to move the majority of goods and people throughout the region. Bus routes, which comprise most public transportation services in Vista, also rely on this street network.

Vehicular mobility is evaluated throughout this section in terms of connectivity, demand, quality, and safety.

This following roadway extensions and realignments related to vehicular mobility identified in the currently adopted Circulation Element (2012) will be revisited as part of the General Plan Update process to determine if they are still necessary and/or desired.

- Branding Iron Drive – This street segment, formerly named Escondido Avenue, would extend between S. Melrose Drive and the SR-78 interchange at Civic Center Drive. A portion of this roadway is currently built, with an approximate 2,400-linear foot section remaining to be constructed to form the connection. This roadway is designated as a Two-Lane Collector with a center left turn lane, which requires a 70-foot wide right-of-way. The existing portion of Branding Iron Drive serves residential properties within the Carriage Hills neighborhood and surrounding areas.
- E. Taylor Street – This street segment would create an east-west connection between the eastern end of E. Taylor Street (east of E. Vista Way) and Warmlands Avenue. E. Taylor Street currently extends approximately 2,000 linear feet east of E. Vista Way, and an additional 1,500 linear feet of roadway must be constructed to form the connection at Warmlands Avenue. This roadway is designated as a Two-Lane Collector with a center left turn lane, which requires a 70-foot-wide right-of-way. The existing portion of Taylor Street serves commercial and residential properties, providing access to Arcadia Avenue and E. Vista Way.
- Anza Avenue – This street segment would extend between the northern end of Anza Avenue and W. Taylor Street, creating a north-south connection between neighborhoods served by W. Taylor Street and Bobier Drive/Anza Avenue. Anza Avenue currently extends approximately 650 linear feet north of Arcadia Avenue, and an additional 650 linear feet must be constructed to form the connection at W. Taylor Street. This roadway is designated as a Two-Lane Light Collector, which requires a 60-fot wide right-of-way.
- Olive Avenue Overpass – This street segment would connect Olive Avenue over the NCTD railway to Orange Avenue and N. Santa Fe Avenue. Due to congestion at the existing rail crossing in the area of Olive Avenue/Vista Village Drive/Santa Fe Avenue, an alternative traffic route is proposed in the current General Plan that would connect Olive Avenue to N. Santa Fe Avenue via a railroad overpass.

This roadway is designated as a Two-Lane Collector with a center left turn lane, which requires a 70-foot wide right-of-way.

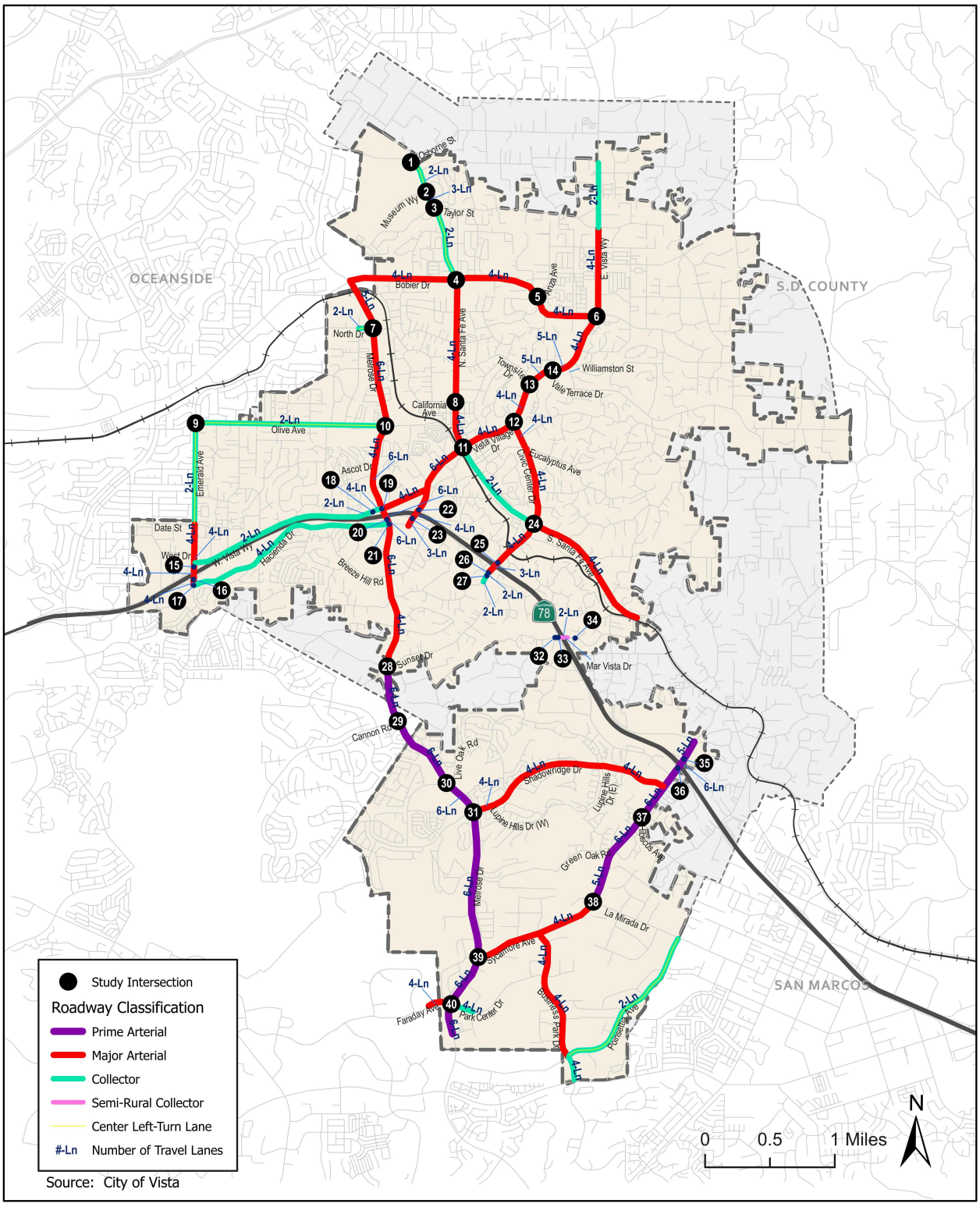
- Guajome/Lado de Loma – Guajome Street and Lado de Loma Drive currently extend through residential and commercial areas, serving as an alternate route between Vista Village Drive and S. Santa Fe Avenue. The existing streets follow a circuitous route, which is largely unimproved and includes substandard curves. The planned connection would include realigning and improving these roadways to meet accepted engineering standards.

4.4.13 Street and Freeway Network

Figure 4.35 shows the existing roadway geometry for study area roadways. Existing intersection geometry is shown in **Figure 4.36**.

Appendix G includes a table that summarizes the existing roadway characteristics for study area segments, including the existing functional classification, number of lanes, median type, posted speed limit, parking availability, sidewalk presence, and bicycle facility type.

Figure 4.35: Existing Roadway Geometry



Source: City of Vista

Figure 4.36: Existing Intersection Geometry

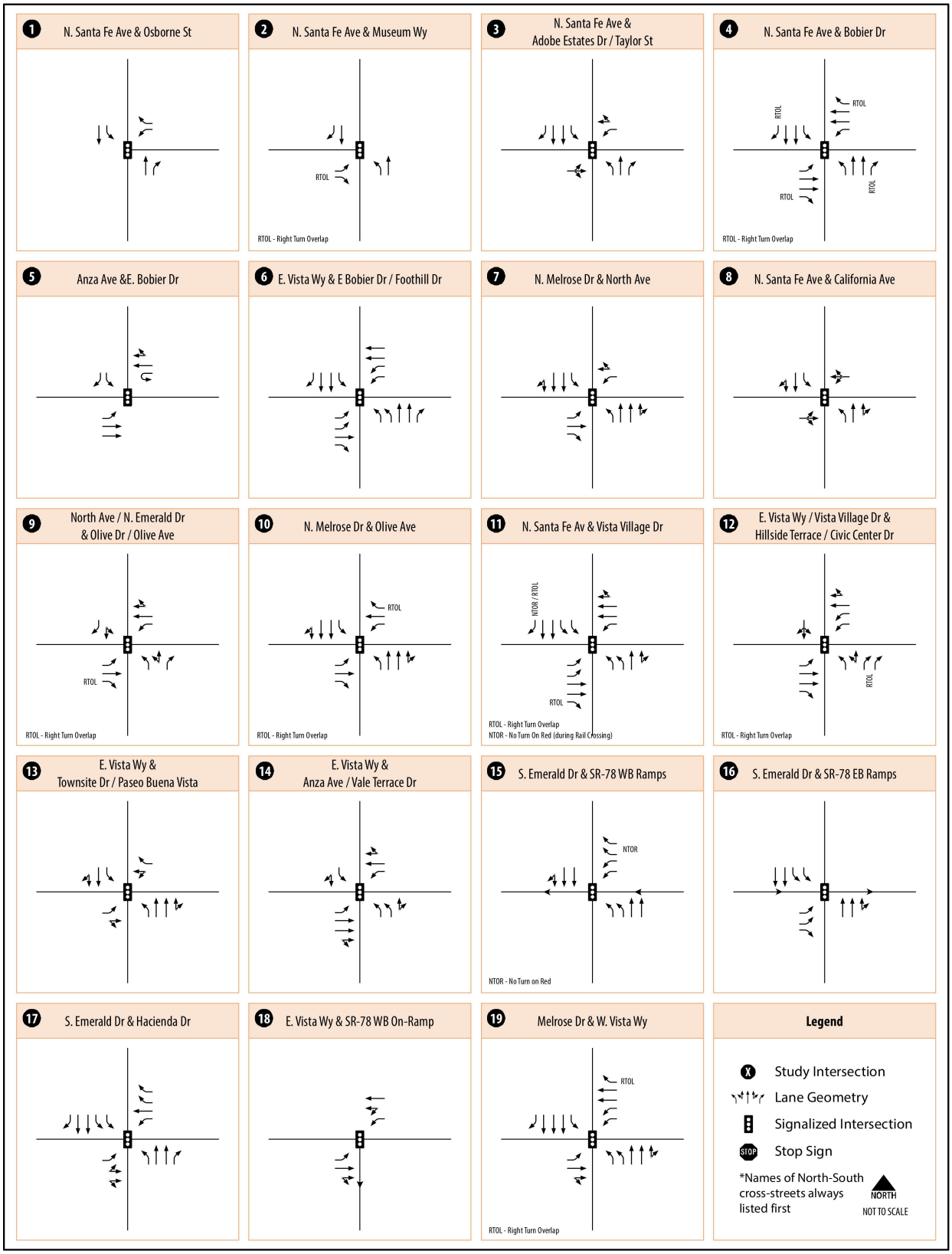


Figure 4.36: Existing Intersection Geometry

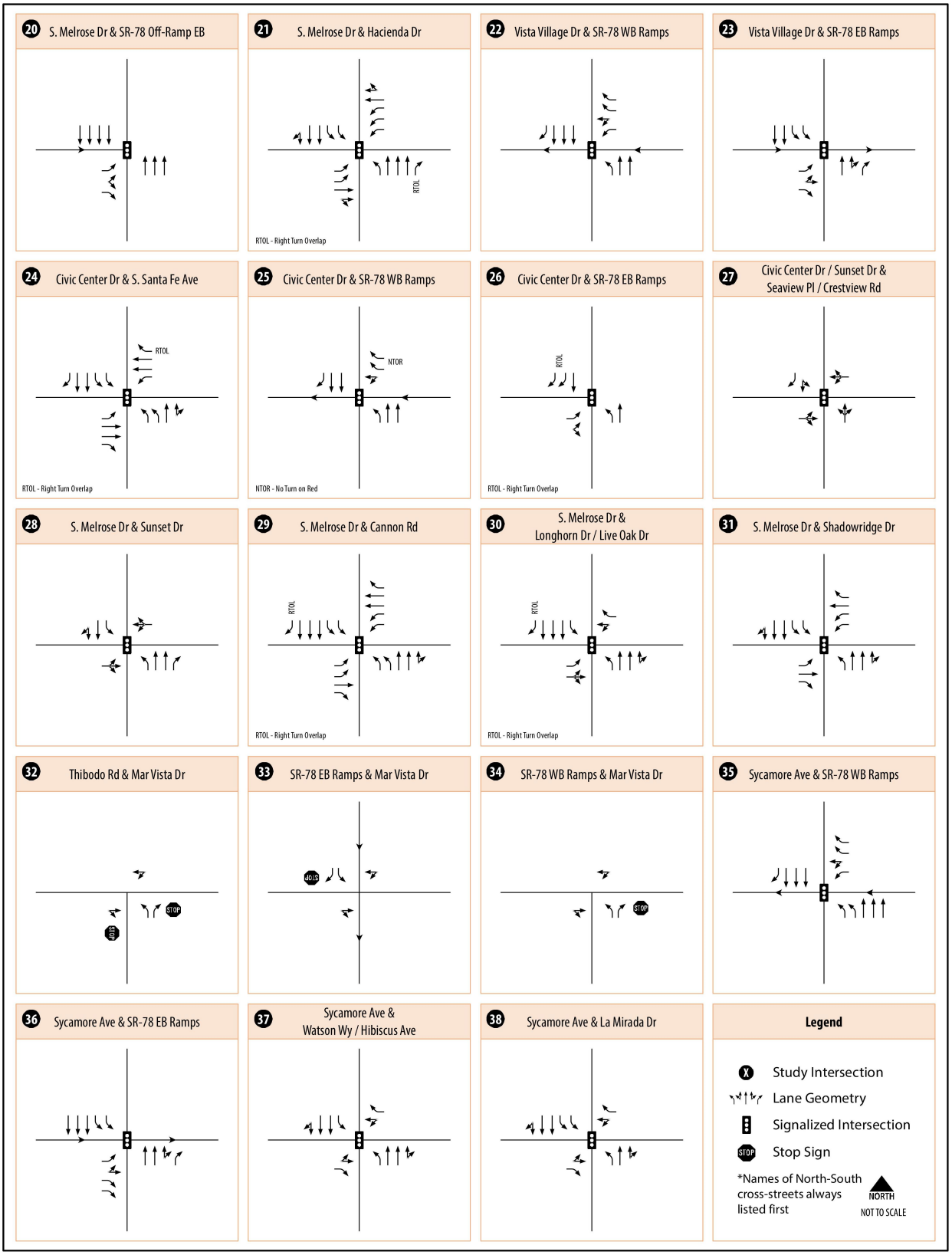
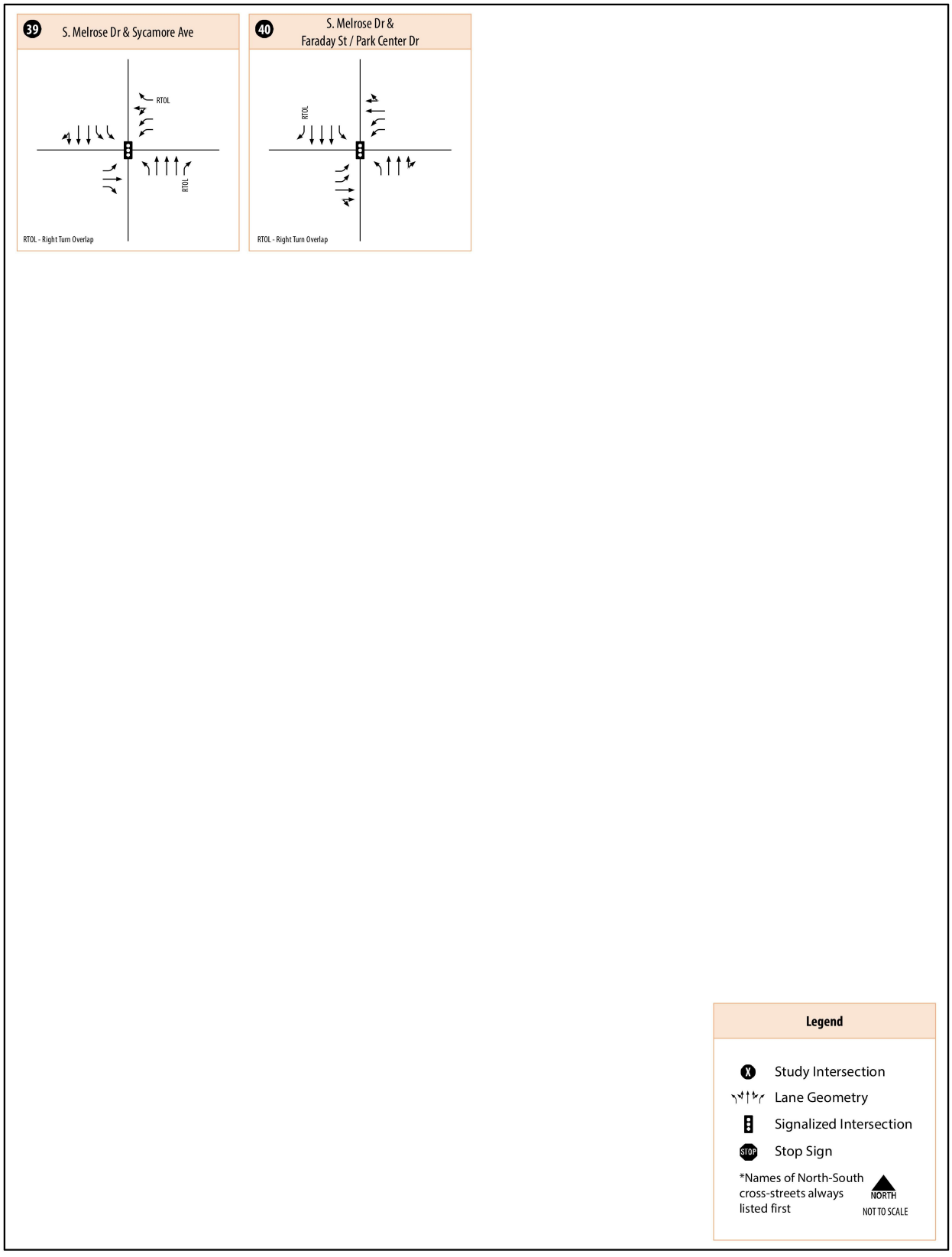


Figure 4.36: Existing Intersection Geometry



4.4.14 Traffic Volumes

Historical vehicular count data was obtained from the City's *Traffic Congestion Management Plan (TCMP* - January 2020). The data was collected during the AM and PM peak commute periods (7-9 AM and 4-6 PM) at intersections between November 2017 and August 2018. Additional counts were collected in September 2022 to supplement the historical counts at locations not included in the Vista TCMP. Count sheets are provided in **Appendix C.**

Figure 4.37 displays existing daily traffic volumes for study roadway segments. Existing AM and PM peak hour intersection turning movements are depicted in **Figure 4.38**.

4.4.15 Operational Evaluation

Roadway Segment Level of Service Analysis

Appendix G includes a table that identifies the functional classification, substandard volume threshold, average daily traffic volume, volume to capacity ratio, and resulting level of service for each study area roadway segment. Figure 4.37 also displays roadway segment level of service results for study area segments.

Segments operating at LOS E or F are largely concentrated along N./S. Santa Fe Avenue, E./W. Vista Way, and Emerald Drive corridors. The following 14 study segments currently operate at a substandard level of service (E or F):

- N. Santa Fe Avenue, from Osborne Street to Museum Way (LOS F)
- N. Santa Fe Avenue, from Museum Way to Taylor Street (LOS E)
- N. Santa Fe Avenue, from Taylor Street to Bobier Drive (LOS F)
- S. Santa Fe Avenue, from Vista Village Drive to Civic Center Drive (LOS F)
- N. Melrose Drive, from Olive Avenue to Ascot Drive (LOS E)
- E. Vista Way, from Taylor Street to City Boundary (LOS F)
- E. Vista Way, from Anza Avenue / Vale Terrace Drive to Townsite Drive (LOS F)
- E. Vista Way, from Townsite Drive to Hillside Terrace / Civic Center Drive (LOS F)
- Emerald Drive, from Olive Avenue to Date Street (LOS F)
- Emerald Drive, from SR-78 WB Ramps to SR-78 EB Ramps (LOS E)
- Emerald Drive, from SR-78 EB Ramps to Hacienda Drive (LOS E)
- W. Vista Way, from Emerald Drive to Brass Lane (LOS F)
- W. Vista Way, from Brass Lane to SR-78 WB On-Ramp (LOS F)
- Mar Vista Drive, from SR-78 EB Ramps to SR-78 WB Ramps (Over Capacity)

Figure 4.37: Roadway Daily Traffic Volumes and LOS – Existing Conditions

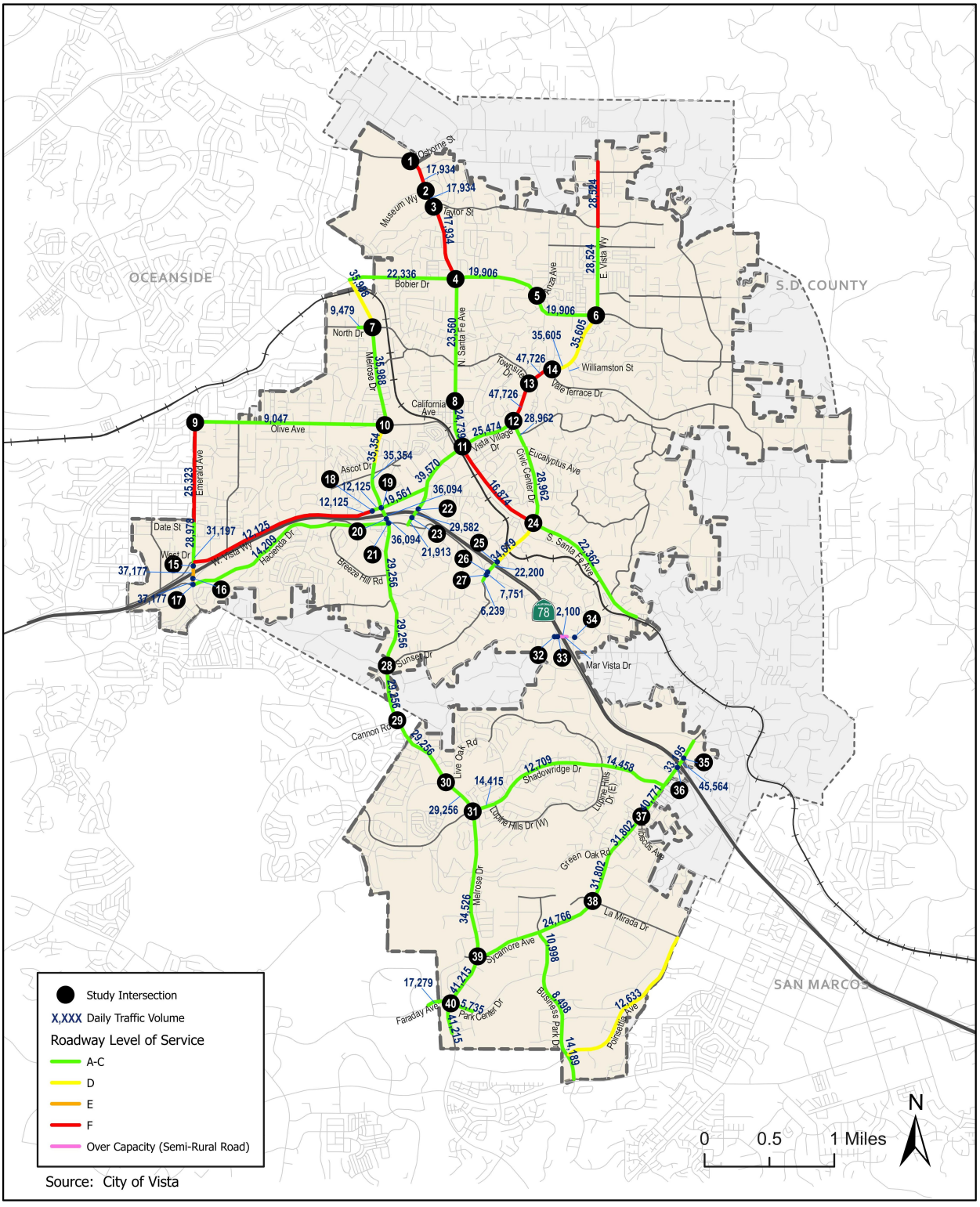


Figure 4.38: AM/PM Peak Hour Intersection Turning Movements – Existing Conditions

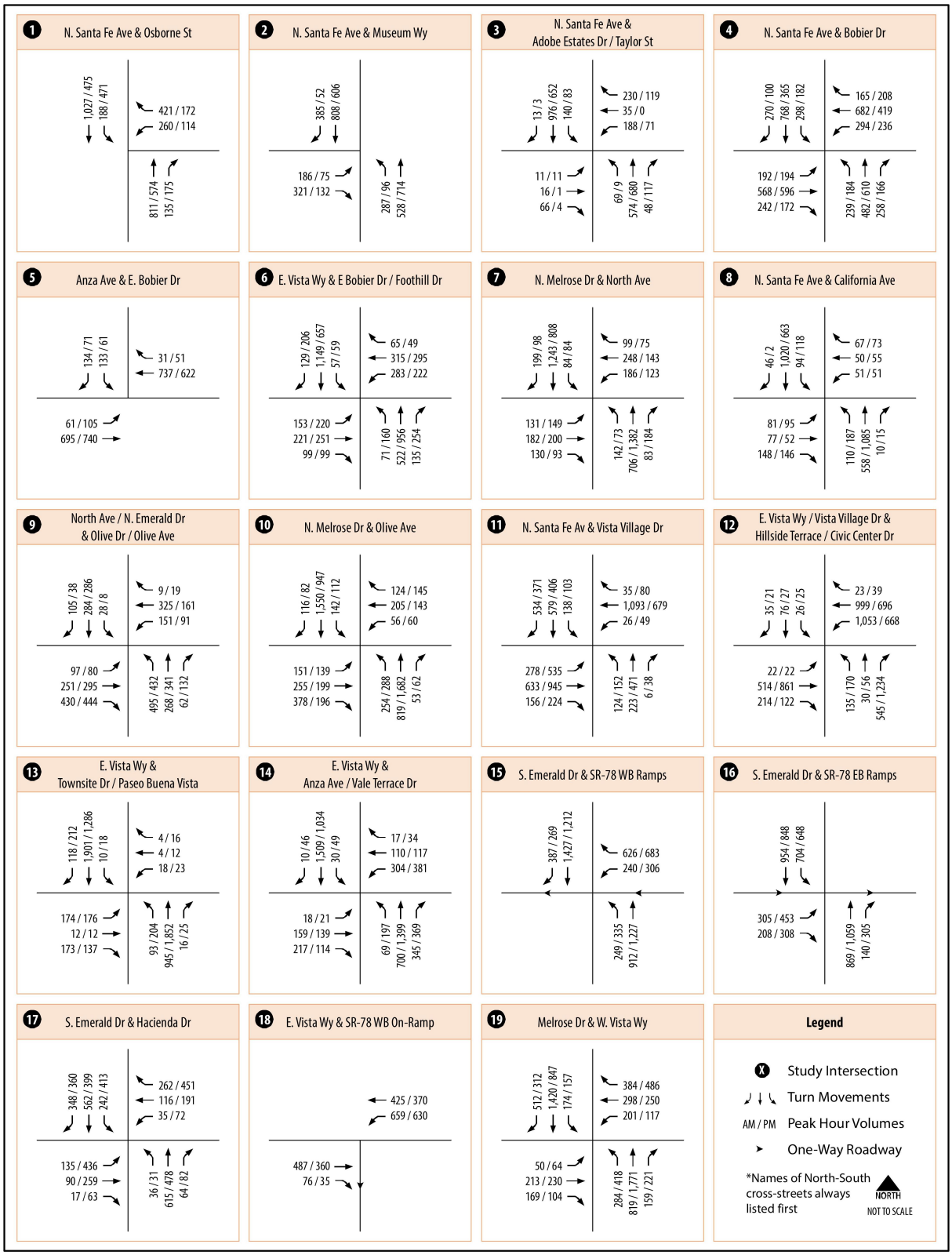


Figure 4.38: AM/PM Peak Hour Intersection Turning Movements – Existing Conditions

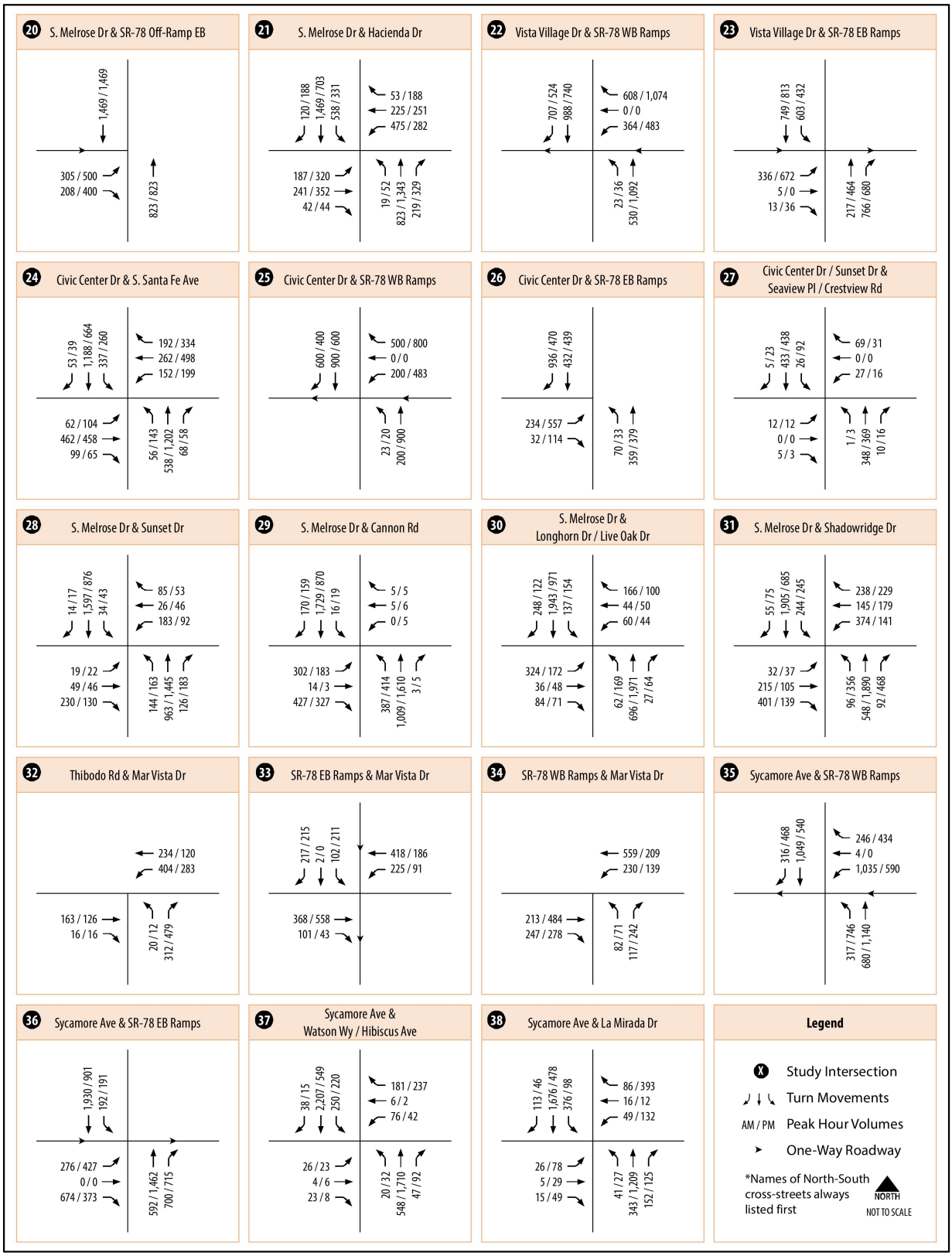
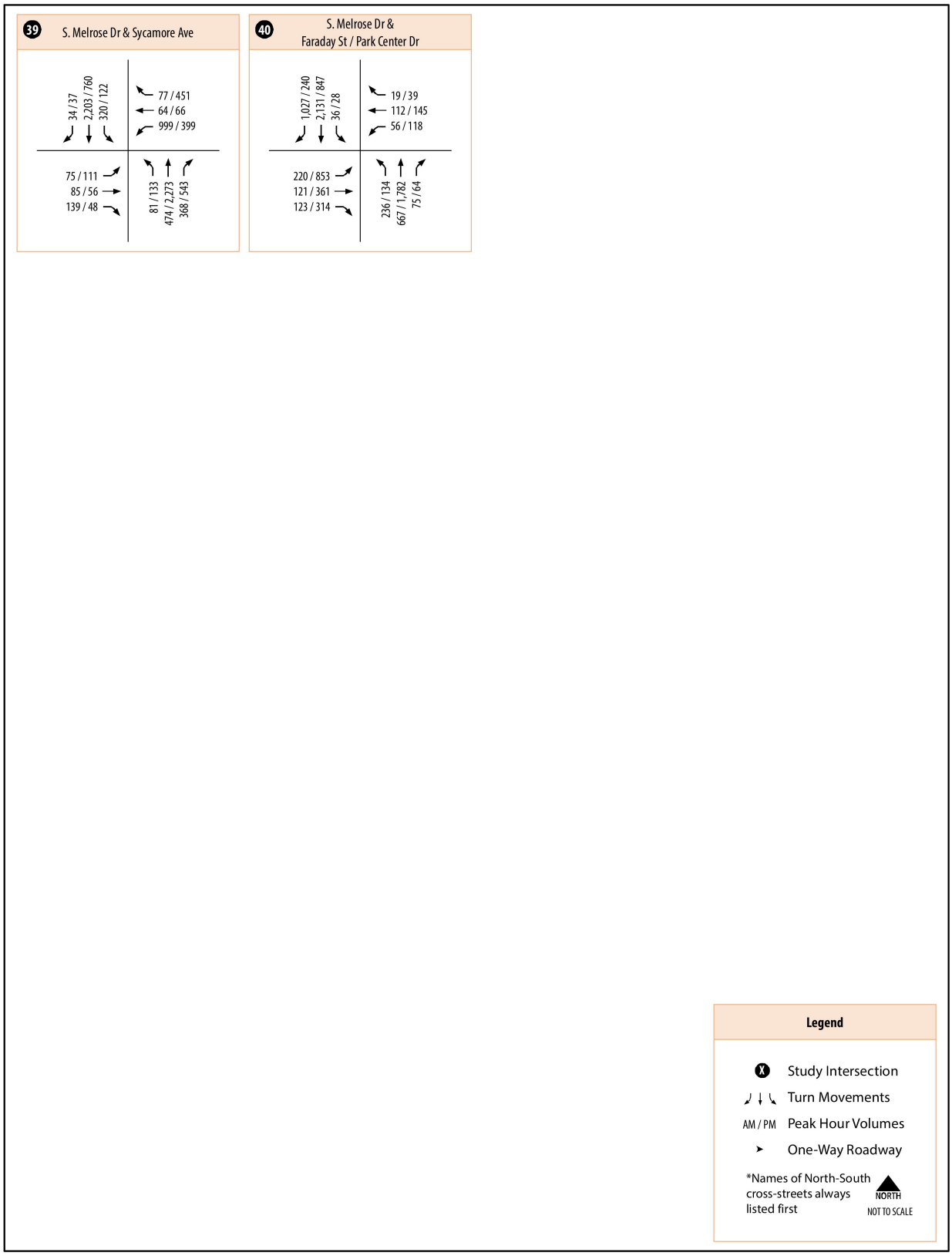


Figure 4.38: AM/PM Peak Hour Intersection Turning Movements – Existing Conditions



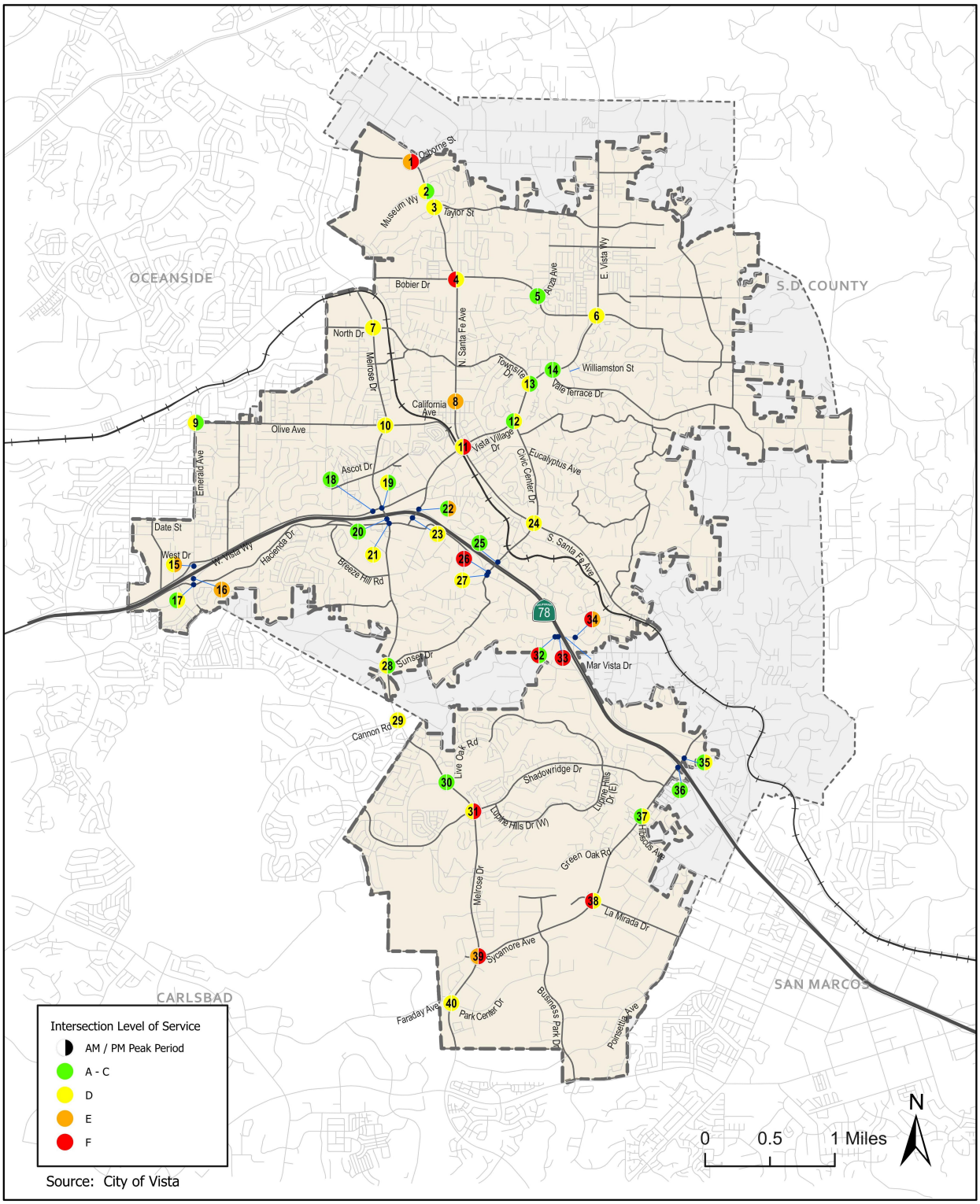
Peak-Hour Intersection Level of Service

A total of 40 intersections were evaluated, including 37 signalized intersections and three two-way stop-controlled intersections. The AM and PM peak hour intersection analysis results are presented in **Figure 4.39** for all study area intersections. **Appendix G** includes a table that identifies the traffic control, average intersection delay, and intersection level of service results during the AM and PM peak hours for all study area intersections. Intersection level of service calculation worksheets are provided in **Appendix E.**

As shown, the following 14 intersections were found to operate at a substandard level of service (LOS E or F) during the AM and/or PM peak hour:

1. N. Santa Fe Avenue & Osborne Street - AM (LOS E); PM (LOS F)
4. N. Santa Fe Avenue & Bobier Drive - AM (LOS F)
8. N. Santa Fe Avenue & California Drive - AM/PM (LOS E)
15. Emerald Drive & SR-78 WB Ramps - PM (LOS E)
16. Emerald Drive & SR-78 EB Ramps - AM/PM (LOS E)
22. Vista Village Drive & SR-78 WB Ramps - PM (LOS E)
26. Civic Center Drive & SR-78 EB Ramps - AM/PM (LOS F)
31. S. Melrose Drive & Shadowridge Drive - PM (LOS F)
32. Thibodo Road & Mar Vista Drive – AM (LOS F)
33. SR-78 EB Ramps & Mar Vista Drive – AM (LOS F); PM (LOS F)
34. SR-78 WB Ramps & Mar Vista Drive – AM (LOS F); PM (LOS E)
38. Sycamore Avenue & La Mirada Drive - AM (LOS F)
39. S. Melrose Drive & Sycamore Avenue - AM (LOS E); PM (LOS F)

Figure 4.39: AM/PM Peak Hour Intersection Level of Service



Freeway/Highway Level of Service

There is only one freeway that serves the North County region in the east-west direction, which traverses through the City of Vista. State Route 78 carries significant volumes of traffic while providing regional connections.

State Route 78

State Route 78 (SR-78) is an east-west freeway facility spanning the width of State. The facility is maintained and operated by Caltrans. Within Vista, SR-78 has three westbound and three eastbound general-purpose lanes in each direction. Access to SR-78 within Vista is provided via Emerald Drive, W. Vista Way, Melrose Drive, Vista Village Drive, Civic Center Drive, Mar Vista Drive, and Sycamore Avenue. In 2019, SR-78 carried between 123,000 to 142,000 AADT along segments within Vista. Heavy vehicle traffic was estimated to account for 4.6 percent to 5.2 percent of total daily traffic.

Appendix G includes a table that presents freeway level of service analysis results for SR-78 segments within the vicinity of Vista. The Caltrans data is representative of year 2019 and is provided in **Appendix F.**

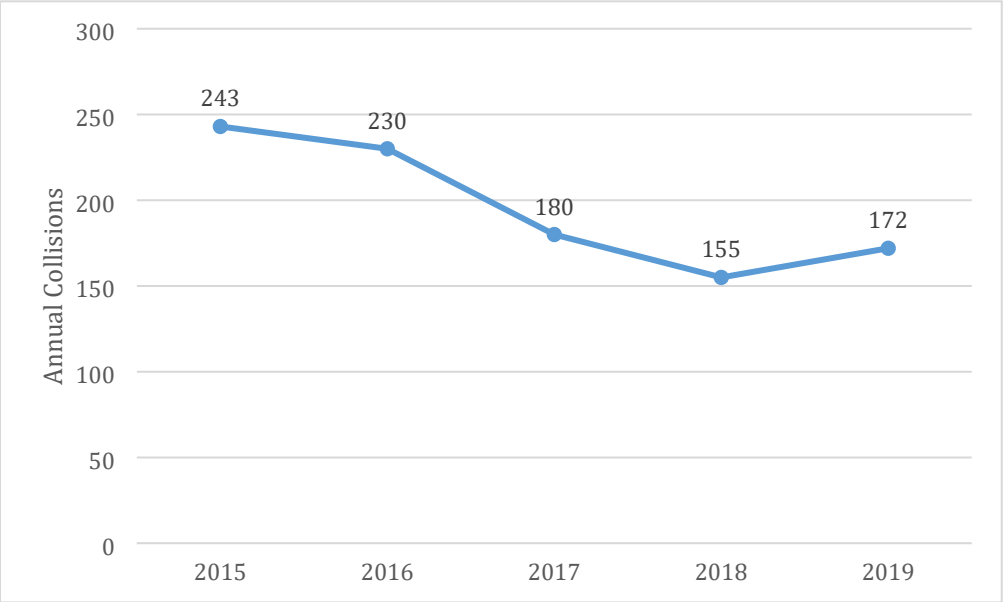
As shown, the following segment currently operates at a substandard level of service:

- SR-78 EB, from College Boulevard to Emerald Drive – PM (LOS E)

4.4.16 Vehicular Safety

During the 5-year period (2015-2019), a total of 980 vehicular injury collisions were reported, excluding those involving a pedestrian or bicyclist, or occurring on SR-78. **Figure 4.40** displays vehicular injury collisions by year. Annual vehicular injury collisions during the 5-year period peaked in 2015 with 243 collisions and declined in the subsequent years.

Figure 4.40: Vehicular Collisions by Year (2015 – 2019)

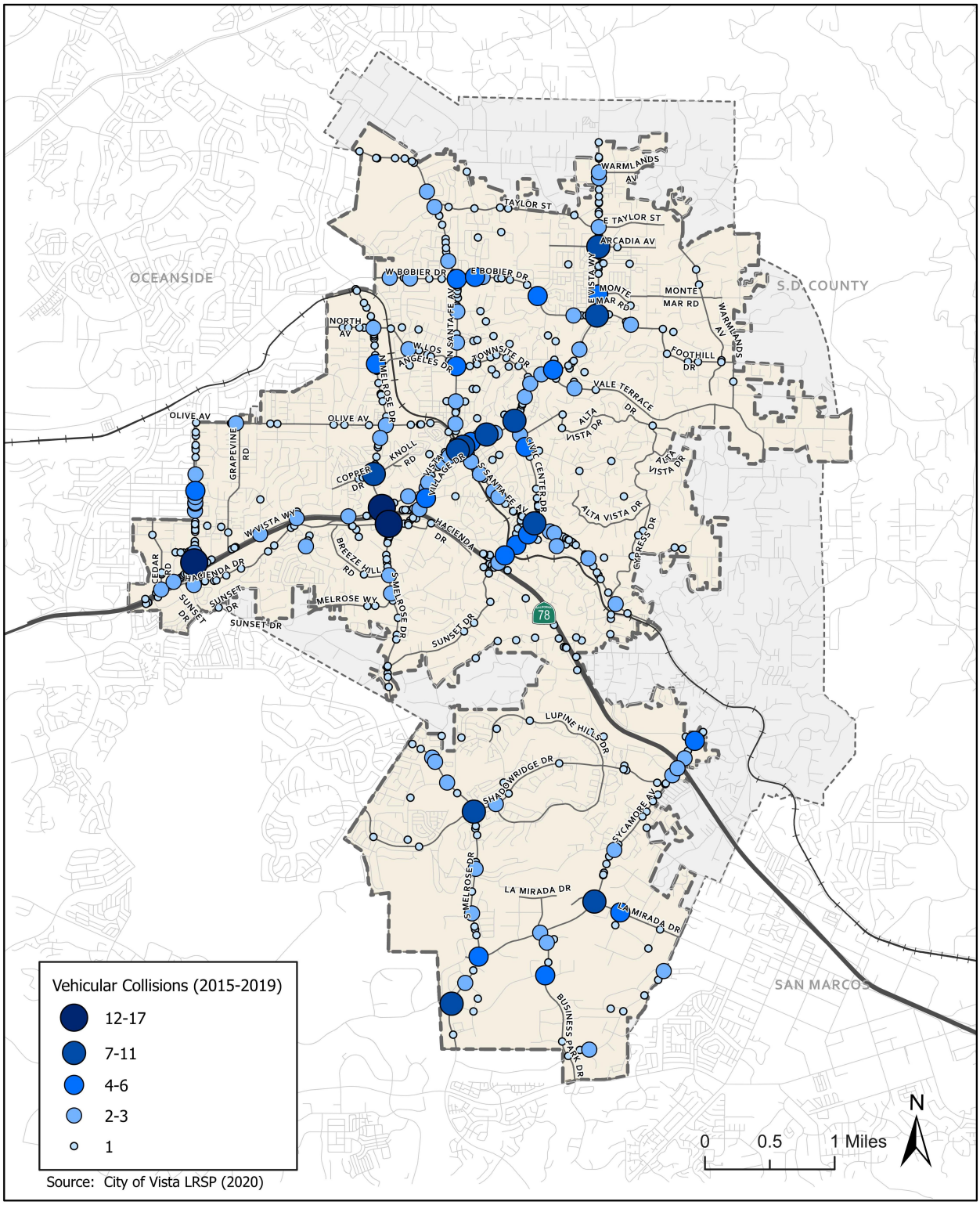


Source: Vista Local Roadway Safety Plan (February 2021)

Figure 4.41 displays vehicular injury collisions across the City. Collisions are largely concentrated at intersections along major roads, such as Vista Village Drive, W. Vista Way, E. Vista Way, Bobier Drive, and S. Melrose Drive. As previously shown in Figure 4.37, these corridors carry the City's greatest volumes of vehicular traffic. Concentrations are also shown along N. Santa Fe Avenue, which has many intersections with roadways that provide access to residential neighborhoods.

Table 4.25 identifies the intersections with the greatest vehicular injury collision frequency. Four of the intersections are located along Vista Way including the top two locations (at Emerald Drive and at Melrose Drive).

Figure 4.41: Vehicular Collisions (2015-2019)



Source: City of Vista LRSP (2020)

Table 4.25: Leading Vehicular Collision Locations (2015 – 2019)

Rank	Intersection	Number of Collisions
1	Emerald Drive & W. Vista Way	17
2	N. Melrose Drive & W. Vista Way	15
3	S. Melrose Drive & Hacienda Drive	13
4	S. Melrose Drive & Shadowridge Drive	11
5	E. Vista Way & E. Bobier Drive/Foothill Drive	11
6	Santa Fe Avenue & Vista Village Drive	9
7	E. Vista Way and Arcadia Avenue	8
8	Olive Avenue & Vista Village Drive	8
9	Civic Center Drive & S. Santa Fe Avenue	8

Source: Vista Local Roadway Safety Plan (February 2021)

Table 4.26 displays vehicular injury collisions by the reported crash type. The leading crash types are overwhelmingly broadside (339 collisions) and rear-end (338 collisions) crash types. Other common crash types included hit object and head on collisions.

Table 4.26 Vehicle Collisions by Crash Type (2015 – 2019)

Crash Type	Number of Collisions
Broadside	339
Rear-end	338
Hit Object	98
Head On	83
Sideswipe	83
Overturned	23
Other	14

Source: Vista Local Roadway Safety Plan (February 2021)

Table 4.27 identifies the six most frequent violation codes reported for vehicular collisions. The leading violation code cited was due to vehicles speeding, which accounts for 256 violations. The second most frequently reported violation code for vehicular collisions was due to drivers being under the influence of alcohol. Both violations are the result of improper driver behaviors. Combined, the 713 collisions account for nearly three-quarters of the total vehicle-only injury collisions in Vista. Improving driver behaviors through

enforcement or educational strategies targeted at these topics may help reduce vehicular collisions.

Table 4.27: Leading Vehicle Collision Violation Codes (2015 – 2019)

Violation Code	Description	Number of Collisions
22350	No person shall drive a vehicle upon a highway at a speed greater than is reasonable or prudent having due regard for weather, visibility, the traffic on, and the surface and width of, the highway, and in no event at a speed which endangers the safety of persons or property.	256
23152(a)	It is unlawful for a person who is under the influence of any alcoholic beverage to drive a vehicle.	143
21453(a)	A driver facing a steady circular red signal alone shall stop at a marked limit line, but if none, before entering the crosswalk on the near side of the intersection or, if none, then before entering the intersection, and shall remain stopped until an indication to proceed is shown, except as provided in subdivision (b).	117
21801(a)	The driver of a vehicle intending to turn to the left or to complete a U-turn upon a highway, or to turn left into public or private property, or an alley, shall yield the right-of-way to all vehicles approaching from the opposite direction which are close enough to constitute a hazard at any time during the turning movement, and shall continue to yield the right-of-way to the approaching vehicles until the left turn or U-turn can be made with reasonable safety.	67

Table 4.27: Leading Vehicle Collision Violation Codes (2015 – 2019)

Violation Code	Description	Number of Collisions
21804	The driver of any vehicle about to enter or cross a highway from any public or private property, or from an alley, shall yield the right-of-way to all traffic, as defined in Section 620, approaching on the highway close enough to constitute an immediate hazard, and shall continue to yield the right-of-way to that traffic until he or she can proceed with reasonable safety.	72
22107	No person shall turn a vehicle from a direct course or move right or left upon a roadway until such movement can be made with reasonable safety.	58

Source: Vista Local Roadway Safety Plan (February 2021)

Intelligent Transportation Systems

Intelligent Transportation Systems (ITS) encompass a broad range of technologies and associated operations that seek to improve and maximize the existing transportation infrastructure's efficiency. When integrated into the transportation system's infrastructure and in vehicles themselves, these technologies can alleviate congestion, improve safety, and enhance productivity. It is also a cost-effective means of increasing the efficiency of the transportation system.

The use of ITS to improve our transportation resources and networks' efficiency and safety has been an increasing trend. It highlights the need to make the most of the physical infrastructure and reduce impacts to the overall urban environment. While the focus is frequently on the technologies being deployed through ITS, it is important to note that each ITS effort must be supported by appropriate operations and maintenance resources to ensure long-term effectiveness.

The City of Vista utilizes transportation management technologies to analyze and manage congestion throughout the City. Vista currently has 109 signalized intersections, which are managed through a combination of ITS technologies as documented throughout this section.

4.4.17 Transportation Management Center

Vista's Transportation Management Center (TMC) is located at City Hall. The TMC is operated and maintained by the Traffic Engineering Division. All signalized intersections within Vista are connected to the Civic Center.

The system provides City staff with comprehensive communication infrastructure to coordinate transportation management. The system uses a central network and CCTV cameras connected to the City's traffic signal communication system to monitor real-time traffic flows and make adjustments, as needed.

4.4.18 Advanced Traffic Management System

Vista currently uses an advanced traffic management system called Kinetic Signals by Q-Free. This system allows City staff at the Civic Center to remotely survey traffic conditions, monitor system-wide signal status in real-time, alert staff of any abnormal conditions, manage signal timing, and analyze traffic trends.

4.4.19 Closed-Circuit Television (CCTV)

Approximately 50 CCTVs are installed throughout the City, providing live traffic conditions back to staff at the Civic Center. The purpose of the CCTV is to allow City staff to monitor and adjust signal timing to meet traffic demands.

4.4.20 Planned Adaptive Signal Control Technology

Adaptive signal control technology is an advanced signal control technology that adjusts the green time of a signal based on volume and existing conditions. Unlike conventional signal systems where signal timing (red/yellow/green) is based on a pre-programed daily signal timing schedule, adaptive signals can conduct live traffic counts and adjust the signal timing accordingly. The adaptive signal's benefit is that it can continuously distribute green time equitably for all traffic movements, improve travel time reliability by progressively moving vehicles through green lights, and reduce congestion by creating a smoother traffic flow. However, such systems are demonstrated not to operate well in heavy traffic conditions. The City currently does not have an adaptive signal system. However, staff will be implementing the system on one of the major roads during off-peak times as pilot to truly and objectively assess the effectiveness of these systems. The City anticipates implementation of the pilot by the end of 2023.

4.4.21 Arterial Speed and Conditions Detection

The City utilizes a blue tooth detection system to monitor arterial speeds and queues. Devices are strategically placed at intersections to gather the data. The system is known as BlueTOAD and is implemented and managed by Iteris, Inc.

- The system by TrafficCast: BlueTOAD utilizes Bluetooth to measure travel times, travel patterns, and congestion. BlueTOAD detects the Bluetooth Media Access Control Address (MAC Address) of Bluetooth equipped vehicle or Bluetooth equipped devices throughout the transportation network and compares them to determine the traffic condition. There are currently 17 BlueTOAD devices installed throughout the City, located along Santa Fe Avenue, N. Melrose Drive, E. Vista Way, Vista Village Drive, Civic Center Drive, and Sycamore Avenue.

Goods Movement

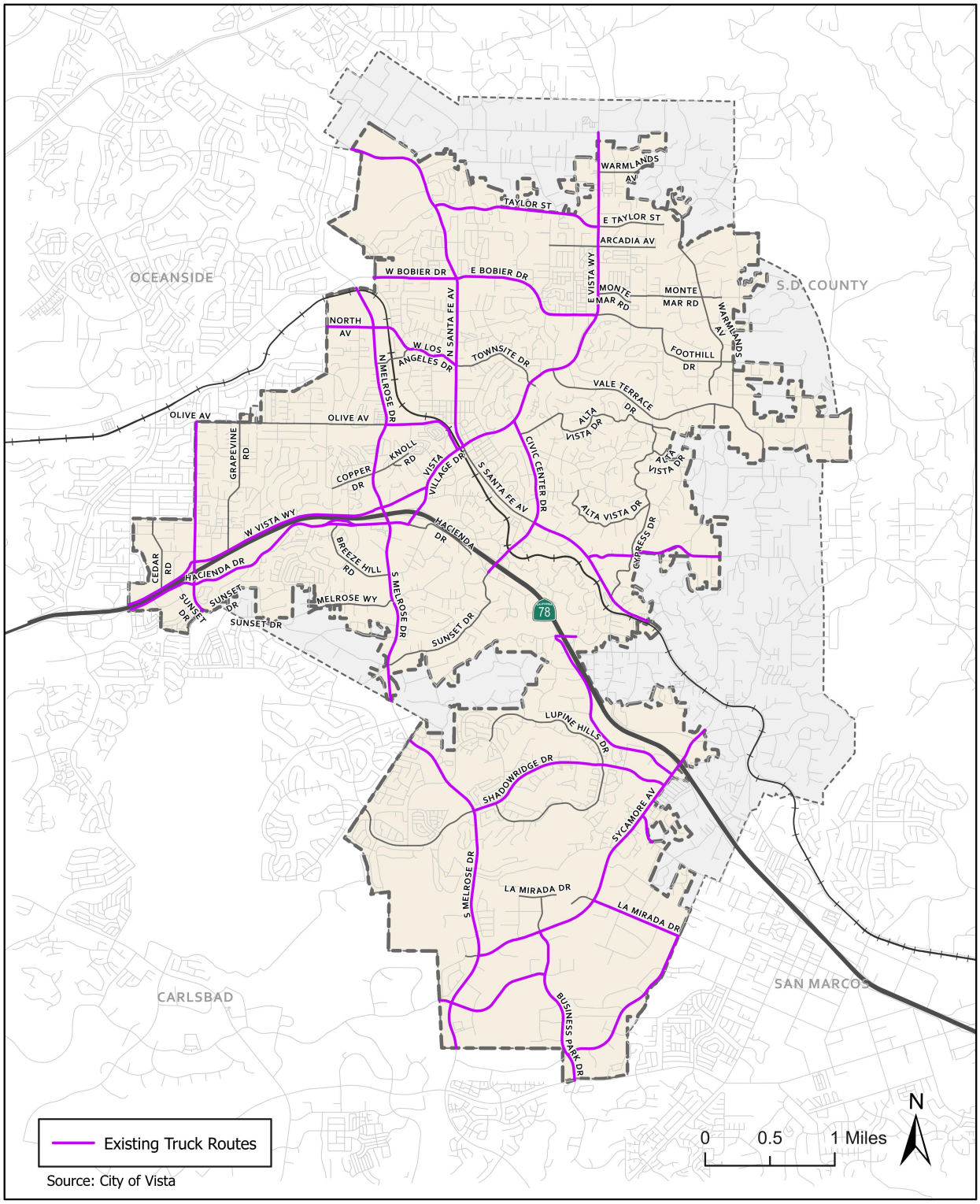
The efficient movement of goods is essential sustaining the local economy and meeting basic consumer needs. Freight travels via a vast interconnected multimodal transportation network consisting of roadways, railways, maritime facilities, and airports.

Within Vista, goods are moved through the roadway network, primarily along SR-78, SR-76, and the arterials that provide access to commercial and industrial businesses. Trucks depend on efficient operations with streets designed to accommodate wide turning radii and significant weight to efficiently reach their destinations. Goods are also delivered directly to consumers on smaller vehicles via the US Postal Service and private carriers such as UPS, FedEx, and Amazon.

Vista has established a truck route map throughout the city where legally loaded vehicles in excess of seven tons gross vehicle weight can travel. **Figure 4.42** displays the truck routes within Vista.

Additionally, Vista does require haul permits for transportation of excavated or fill material to and from sites. Vista also requires oversize/overweight permits for vehicles, equipment, or structures on city streets.

Figure 4.42: Existing Truck Routes



4.5 Needs and Opportunities

This section provides a summary of the key needs and opportunities to consider in the future project phases.

4.5.1 Pedestrian

The areas exhibiting the greatest levels of propensity for pedestrian and bicycle trips include the areas surrounding the intersection of N. Santa Fe Avenue and Vista Village Drive (Downtown Vista) as well as along the S. Santa Fe Avenue corridor leading to its intersection with Civic Center Drive.

Focusing improvements in these areas that enhance pedestrian safety, comfort, and convenience should be considered. In addition to having relatively greater activity levels, these areas also exhibit relatively higher frequencies of pedestrian-involved collisions. Pedestrians outside crosswalk was the leading violation attributed to pedestrian-involved collisions. Implementation of additional high visibility marked crosswalks, curb extensions, pedestrian countdown signal heads with lead pedestrian intervals can help provide more desirable opportunities for pedestrians to cross the street. These recommendations can also help improve the visibility of pedestrians to drivers while also prioritizing pedestrians and make their trips more convenient.

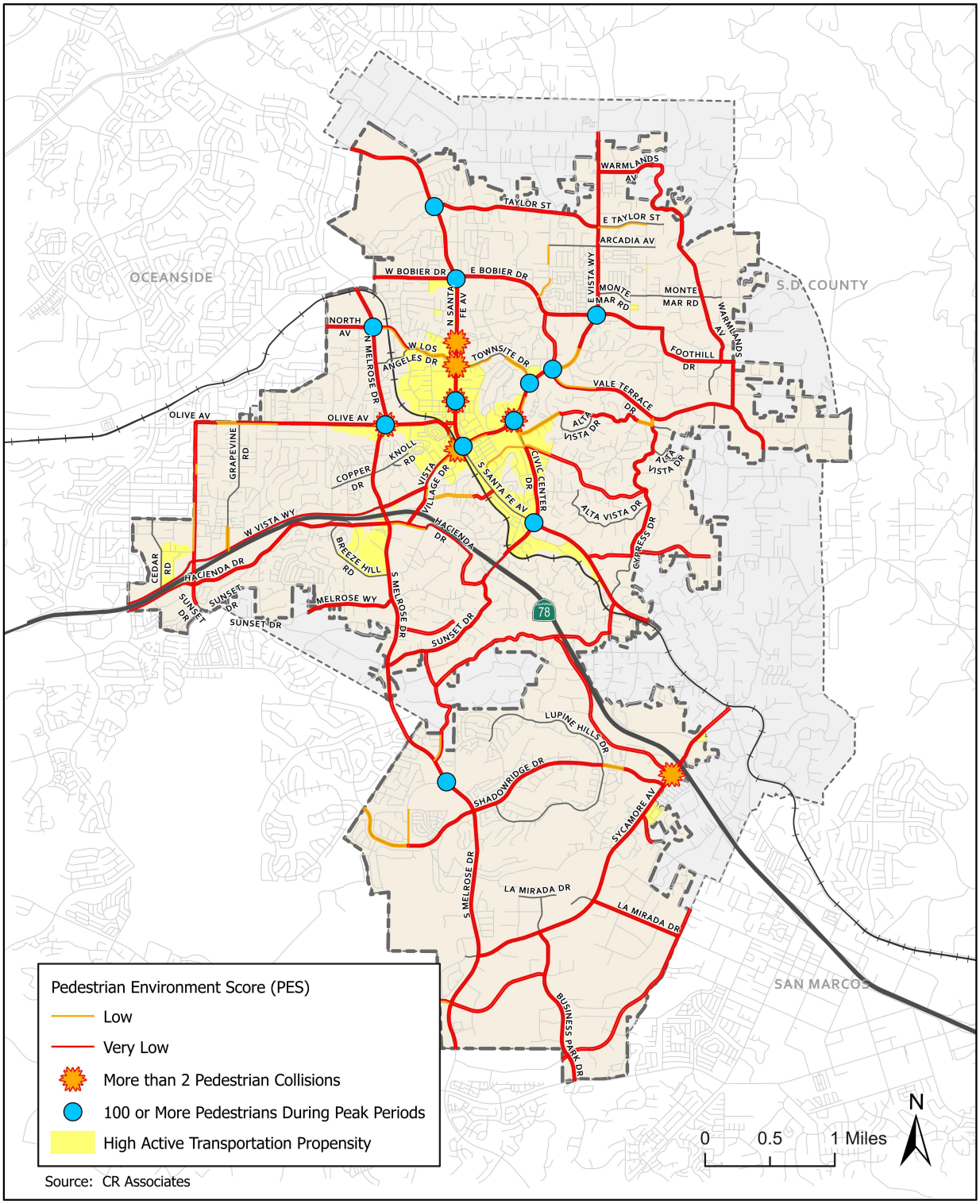
Figure 4.43 summarizes findings from the pedestrian analysis, identifying locations with higher propensity for active transportation trips, higher pedestrian collision frequencies, major roadways with environments uninviting to pedestrians, and planned improvements intended to create more pedestrian friendly environments.

4.5.2 Bicycle

The Inland Rail Trail is a critical link to the City and regional bike network. These facilities are intended to provide comfortable bicycling connections for users of all skill levels that are separated from vehicular traffic. Currently Phase 3 and Phase 4 of the IRT are planned to begin construction in 2023 and 2026, respectively. These two phases will construct a three-mile connection that will run between Mar Vista Drive and North Drive.

Completing this facility should be a priority for improving bicycling connectivity and safety. The benefits of these investments can be maximized by ensuring safe and comfortable connections from nearby neighborhoods and attention to any at-grade street crossings. Ensuring bicyclists can comfortably access key activity centers and destinations from these facilities is critical to attracting new riders.

Figure 4.43: Pedestrian Opportunities and Constraints



Source: CR Associates

The main arterials connecting residential neighborhoods to destinations are generally striped with Class II bike lanes, however, these are still environments uncomfortable or uninviting to most bicyclists.

Improving bicyclist comfort along arterials is difficult, due to the high speeds and constrained right-of-way in many locations. Using Level of Traffic Stress methodology, posted speed limits greater than 35 mph require a physical protected facility, such as a bike path or protected bike lane, to make conditions comfortable for a greater segment of the bicycling population. Where practical, alternative parallel connections should be considered, such as the Inland Rail Trail as a parallel alternative to S. Santa Fe Avenue.

Intersection approaches are critical considerations for arterials when protected facilities are infeasible. Continuing the bicycle lane up to the intersection can help bicyclists navigate through these high stress environments and facilitate predictable bicycling behaviors and positioning. Green paint at conflict points and additional markings such as bike boxes can further remind drivers to anticipate bicyclists.

The bicycle analysis findings are summarized in **Figure 4.44**, identifying areas with higher active transportation propensity, areas with higher bicycle collision frequency, the regional Class I facilities, and roadways exhibiting environments that are stressful for bicyclists.

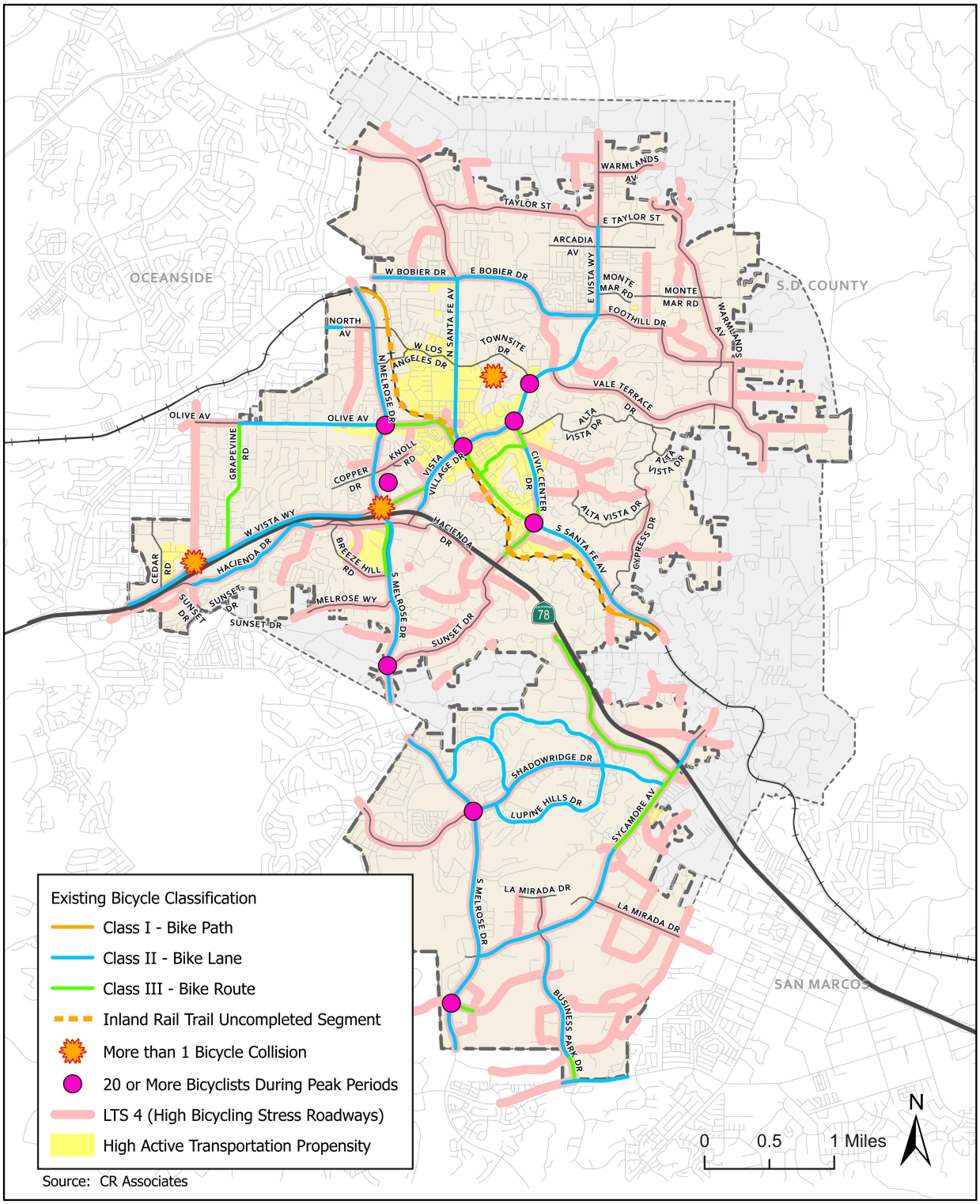
4.5.3 Transit

There are two Sprinter stations located in Vista: Civic Center and Vista Transit Center. Vista Transit Center serves as the City's main transit hub, with Breeze bus connecting services offered and surrounding Transit Oriented Development (TOD). Civic Center, on the other hand, is under-performing for a rail station with low ridership as the result of poor network connectivity and less intense land uses. Future considerations should be made to enhance pedestrian and bicycle access around these Transit Centers as a means to strengthen first-/last-mile connections and further encourage use of the vast transit offerings and multimodal trips.

The Sprinter provides a high-quality hybrid-rail system connecting the two Transit Centers to Oceanside and Escondido. However, ridership is low at many stops due to lack of surrounding land uses. Focusing future development at or near the Sprinter stations, coupled with strong pedestrian and bicycle connections, is one strategy the City should consider to encourage future public transit use. The Sprinter is an exceptional investment that should be leveraged through more transit-supportive land uses.

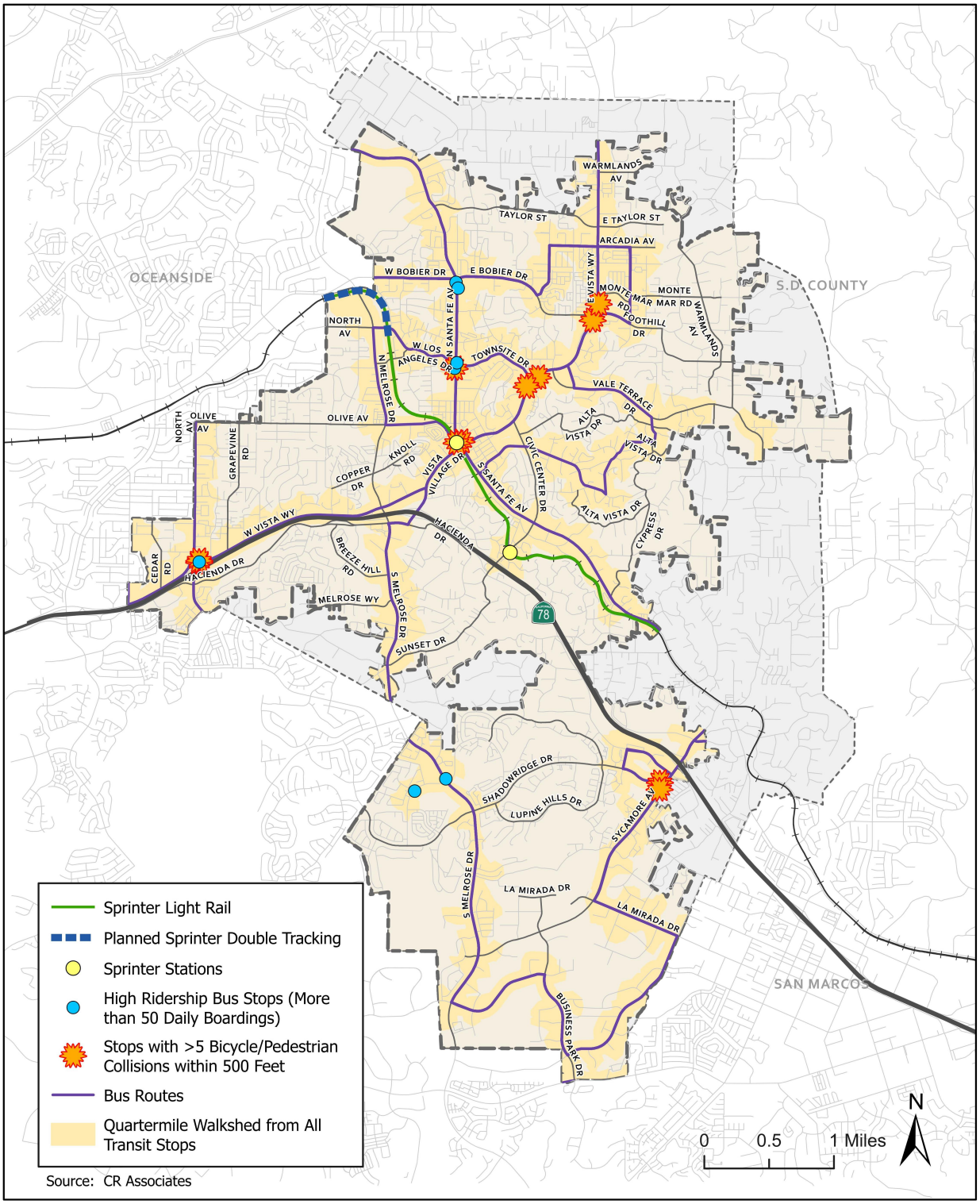
Figure 4.45 displays transit routes, 0.25-mile walksheds around transit stops, high ridership transit stops, and transit stops with high frequencies of pedestrian and bicycle collisions in the vicinity.

Figure 4.44: Bicycle Opportunities and Constraints



Source: CR Associates

Figure 4.45: Transit Opportunities and Constraints



Source: CR Associates

4.5.4 Vehicular

Planned improvements at the regional level will improve operations along the freeways and encourage carpooling.

The current regional transportation plan identifies SR-78 as a Complete Corridor: Active Transportation Demand Management (ATDM)/Smart Intersection Systems (SIS) which calls for the expansion of SR-78 to accommodate two managed lanes and operational improvements by 2035. Complete Corridors will make travel along them safer and more efficient, while offering people more alternatives to driving alone – including more transit options, more rideshare options, and more opportunities for biking, walking, and other forms of active transportation.

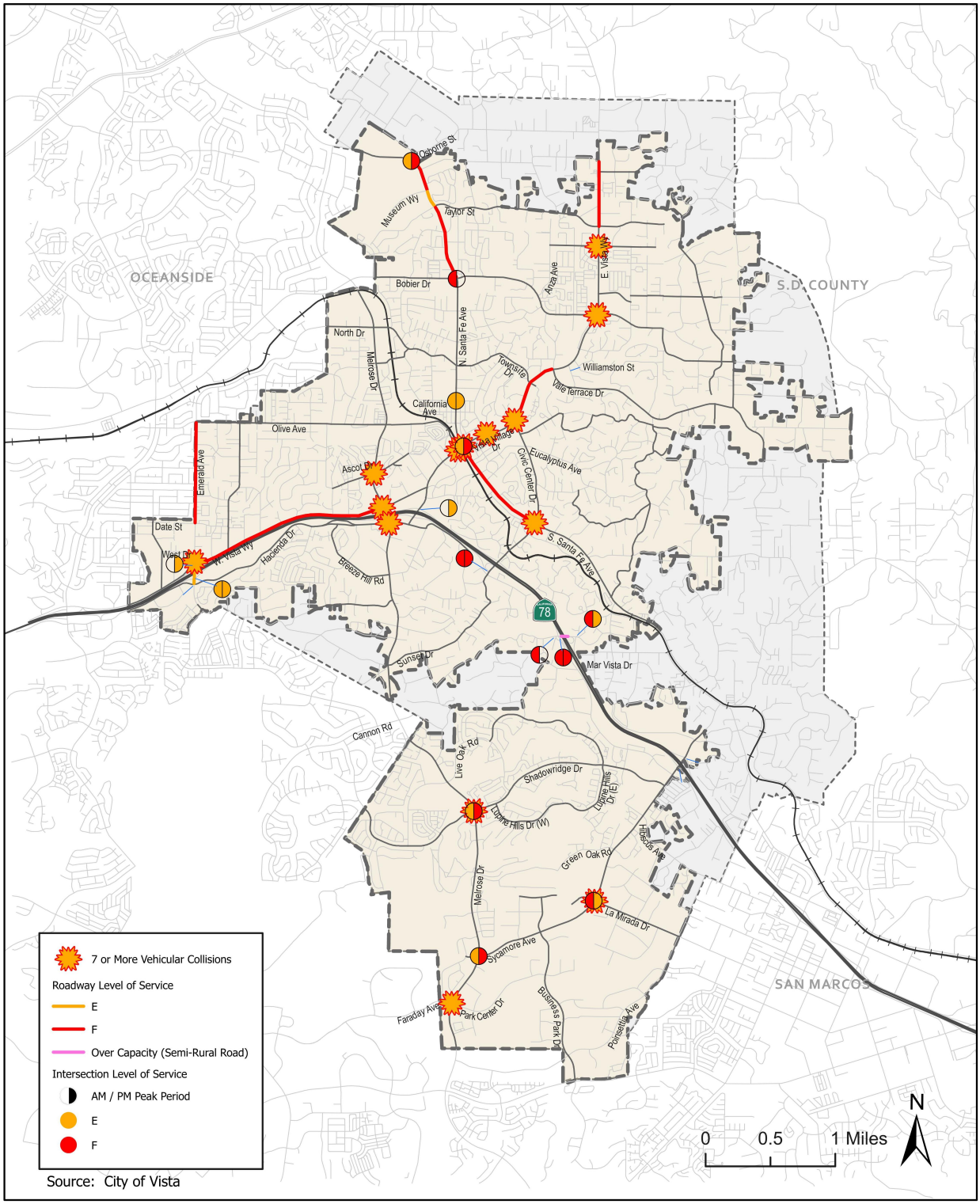
HOV and non-HOV connectors are also planned for the SR78 – I-5 interchange, while HOV connectors are planned for the SR-78 – I-15 interchange. Additionally, SANDAG initiated the North County Regional Corridor Comprehensive Multimodal Corridor Plan (CMCP) in 2021 to improve multimodal mobility between I-5 and I-15 in North County.

The built out environment prevalent throughout most of Vista limits opportunities for roadway expansions, emphasizing the importance of utilizing technology to improve operations and encouraging alternative transportation modes.

The City should continue to invest in intersection technology enhancements as the primary method of improving vehicular flow. Widening streets can be detrimental to the safety and mobility of alternative transportation modes. Instead, the City should continue its investment in alternative transportation modes and strengthen first-/last-mile connections to major transit stops. Future development should also be focused within these “smart growth” areas to further encourage and facilitate trips via public transit, walking, and bicycling. Additionally, traffic calming measures should continue to be explored throughout the City as a means to improve vehicular safety and help reduce severe/fatal collisions.

Figure 4.46 summarizes the analysis results, displaying vehicular segments and intersections currently operating at level of service D, E, or F, and high collisions locations.

Figure 4.46: Vehicular Opportunities and Constraints



5.0 NATURAL RESOURCES

The Natural Resources chapter summarizes the regulatory framework for resource conservation and sustainability and provides an analysis of the existing air quality, water, open space, parks and recreation, cultural, historical, and paleontological resources, and energy and waste management. Natural resources are vital to maintain the unique character and healthy community for all who live, work, and play in Vista. Protecting the plant and wildlife habitats through conservation and sustainable practices will ensure healthy and safe communities for years to come.

5.1 Air Quality

This section describes the existing air quality conditions, the regulatory framework applicable to air quality, an assessment of potential impacts on air quality that may result from implementing the General Plan Update, and mitigation measures that would reduce potentially significant impacts.

5.1.1 Findings

- Air quality in the City of Vista continues to improve, as measures from the state implementation plan (SIP) and regional air quality management strategy (RAQS) are implemented, and statewide programs and cleaner technologies are continually adopted.
- Emissions of NOx and VOC in the San Diego Air Basin (SDAB), within which the City is located, have been declining over the last several decades due mainly to more stringent controls on motor vehicle emissions and reductions in evaporative emissions. Despite these declines in emissions, the SDAB remains classified as a nonattainment area for the federal ozone standard, and for the state ozone, PM10 (particulate matter that is 10 microns or less in diameter), and PM2.5 (particulate matter that is 2.5 microns or less in diameter) standards. Mobile sources (i.e. motor vehicles) are the largest contributors to NOx and VOC (the main precursors to ozone) emissions in the air basin, and areawide sources are the greatest contributor to PM10 and PM2.5 emissions.
- Sources of toxic air contaminants and other air quality concerns remain.

5.1.2 Regulatory Setting

Several federal, state, and regional laws have been established to regulate activities concerning air quality. This section lists the regulations that apply to these issues. The impact analysis considers these regulations as they pertain to the proposed General Plan Update.

Federal

Criteria Air Pollutants

The federal Clean Air Act (CAA) was first enacted in 1963 and has been amended several times, most recently in 1990. The CAA forms the basis for the national air pollution control effort by establishing air quality standards and specifying future dates for achieving compliance. The Environmental Protection Agency (EPA) is responsible for implementing most aspects of the CAA, including the setting of National Ambient Air Quality Standards (NAAQS) for major air pollutants, hazardous air pollutant (HAP) standards, approval of state attainment plans, motor vehicle emission standards, stationary source emission standards and permits, acid rain control measures, stratospheric O_3 protection, and enforcement provisions.

NAAQS are established by the EPA for "criteria pollutants" under the CAA, which are O_3 (ozone), CO (carbon monoxide), NO_2 (nitrogen dioxide), SO_2 (sulfur dioxide), PM_{10}, $PM_{2.5}$, and lead. The NAAQS describe acceptable air quality conditions designed to protect the health and welfare of the citizens of the nation. The CAA requires the EPA to reassess the NAAQS at least every 5 years to determine whether adopted standards are adequate to protect public health based on current scientific evidence. States with areas that exceed the NAAQS must prepare a state implementation plan (SIP) to demonstrate how those areas will attain the standards within mandated time frames. **Table 5.1** shows the NAAQS currently in effect for each criteria air pollutant.

Hazardous Air Pollutants

The 1977 CAA Amendments required the EPA to identify national emission standards for hazardous air pollutants to protect the public health and welfare. HAPs include certain volatile organic chemicals, pesticides, herbicides, and radionuclides that present a tangible hazard, based on scientific studies of exposure to humans and other mammals. Under the 1990 CAA Amendments, which expanded the control program for HAPs, 189 substances and chemical families were identified as HAPs.

State

Criteria Air Pollutants

The California Clean Air Act (CCAA) was adopted in 1988 and establishes the state's air quality goals, planning mechanisms, regulatory strategies, and standards of progress. Under the CCAA, the task of air quality management and regulation has been legislatively granted to the California Air Resources Board (CARB), with subsidiary responsibilities assigned to air quality management districts and air pollution control districts at the regional and county levels. CARB is responsible for ensuring implementation of the CCAA, responding to the federal CAA, and regulating emissions from motor vehicles and consumer products. The agency is responsible for setting emission standards for vehicles sold in California and for

other emission sources, such as consumer products and certain off-road equipment. The CARB established passenger vehicle fuel specifications, which became effective in March 1996. The CARB oversees the functions of local air pollution control districts and air quality management districts, which in turn administer air quality activities at the regional and county levels.

Pursuant to the authority granted to it, CARB has established California Ambient Air Quality Standards (CAAQS), which are generally more restrictive than the NAAQS. **Table 5.1** shows the CAAQS currently in effect for each criteria pollutant.

Table 5.1: Federal and State Ambient Air Quality Standards

Polluant	Averaging Time	California Standards[a]	National Standards[b]	
		Concentration[c]	Primary[c,d]	Secondary[c,e]
O_3	1 hour	0.09 ppm (180 μg/m^3)	—	Same as primary standard[f]
	8 hours	0.070 ppm (137 μg/m^3)	0.070 ppm (137 μg/m^3)[f]	
NO_2[g]	1 hour	0.18 ppm (339 μg/m^3)	0.100 ppm (188 μg/m^3)	Same as primary standard
	Annual arithmetic mean	0.030 ppm (57 μg/m^3)	0.053 ppm (100 μg/m^3)	
CO	1 hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	None
	8 hours	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	
SO_2[h]	1 hour	0.25 ppm (655 μg/m^3)	0.075 ppm (196 μg/m^3)	—
	3 hours	—	—	0.5 ppm (1,300 μg/m^3)
	24 hours	0.04 ppm (105 μg/m^3)	0.14 ppm (for certain areas)[g]	—
	Annual	—	0.030 ppm (for certain areas)[g]	—
PM_{10}[i]	24 hours	50 μg/m^3	150 μg/m^3	Same as primary standard
	Annual arithmetic mean	20 μg/m^3	—	
$PM_{2.5}$[i]	24 hours	—	35 μg/m^3	Same as primary standard
	Annual arithmetic mean	12 μg/m^3	12.0 μg/m^3	15.0 μg/m^3
Lead[j, k]	30-day average	1.5 μg/m^3	—	—
	Calendar quarter	—	1.5 μg/m^3 (for certain areas)[k]	Same as primary standard
	Rolling 3-month average	—	0.15 μg/m^3	

Hydrogen sulfide	1 hour	0.03 ppm (42 µg/m^3)	—	—
Vinyl chloride[j]	24 hours	0.01 ppm (26 µg/m^3)	—	—

Source: CARB (2016)

Notes: O_3 = ozone; ppm = parts per million by volume; µg/m^3 = micrograms per cubic meter; NO_2 = nitrogen dioxide; CO = carbon monoxide; mg/m^3= milligrams per cubic meter; SO_2 = sulfur dioxide; PM_{10} = particulate matter with an aerodynamic diameter less than or equal to 10 microns; $PM_{2.5}$ = particulate matter with an aerodynamic diameter less than or equal to 2.5 microns.

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

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

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

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

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

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

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

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

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

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

[k] The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 µg/m^3 as a quarterly average) remains in effect until 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.

Toxic Air Contaminants

According to Section 39655 of the California Health and Safety Code, a toxic air contaminant (TAC) is an air pollutant which "may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health." California regulates TACs primarily through the Tanner Air Toxics Act, and the Air Toxics Hot Spots Information and Assessment Act.

The state Air Toxics Program was established in 1983 under AB 1807 (Tanner Act) and sets forth a formal procedure for CARB to designate substances as TACs and reduce public exposure. To date, CARB has formally identified over 200 substances and groups of substances as TACs. Once identified as a TAC, CARB engages in risk management to outline the need and degree to regulate the substance through control measures. CARB currently has 26 mobile and stationary airborne toxic control measures.

The Air Toxics Hot Spots Information and Assessment Act of 1987 (AB2588, Hot Spots Act) requires stationary sources to report the types and quantities of certain substances their facilities routinely release into the air. The goal of the Hot Spots Act is to collect emissions data, identify facilities causing localized impacts, evaluate the associated health risks, and inform nearby residents and receptors of significant risks. "High-priority" facilities are required to perform a health risk assessment (HRA), and if specific thresholds are exceeded, are required to communicate the results to the public in the form of notices and public meetings.

In 2000, CARB approved a comprehensive Diesel Risk Reduction Plan to reduce diesel emissions from both new and existing diesel-fueled vehicles and engines. The regulation was anticipated to result in an 80 percent decrease in statewide diesel health risk in 2020 compared with the diesel risk in 2000. Additional regulations apply to new trucks and diesel fuel, including the On-Road Heavy Duty Diesel Vehicle (In-Use) Regulation, the On-Road Heavy Duty (New) Vehicle Program, the In-Use Off-Road Diesel Vehicle Regulation, and the New Off-Road Compression-Ignition (Diesel) Engines and Equipment program. All of these regulations and programs have timetables by which manufacturers must comply and existing operators must upgrade their diesel-powered equipment. Several Airborne Toxic Control Measures that reduce diesel emissions including In-Use Off-Road Diesel-Fueled Fleets (13 CCR 2449 et seq.) and In-Use On-Road Diesel-Fueled Vehicles (13 CCR 2025).

Regional

San Diego Air Pollution Control District

While CARB is responsible for the regulation of mobile emission sources within the state, local air quality management districts and air pollution control districts are responsible for the development and implementation of rules and regulations designed to attain the NAAQS and CAAQS, as well as the permitting of new or modified sources, development of air quality management plans, and adoption and

enforcement of air pollution regulations. The San Diego Air Pollution Control District (SDAPCD) is the local agency responsible for the administration and enforcement of air quality regulations in San Diego County, where the City is located. The SDAPCD is responsible for monitoring air quality, as well as planning, implementing, and enforcing programs designed to attain and maintain state and federal ambient air quality standards within the SDAB.

Programs they have developed include air quality rules and regulations that regulate stationary, area, point, and certain mobile-source emissions. The SDAPCD is also responsible for establishing permitting requirements for stationary sources and ensuring that new, modified, or relocated stationary sources do not create net emission increases and, therefore, continue to meet the region's air quality goals

In San Diego County, O_3 and particulate matter are the main pollutants of concern since exceedances of CAAQS for those pollutants are experienced here in most years. For this reason, the SDAB has been designated as a nonattainment area for the state PM_{10}, $PM_{2.5}$, and O_3 standards. The SDAB is also a federal O_3 attainment (maintenance) area for 1997 8-hour O_3 standard, a O_3 nonattainment area for the 2008 8-hour O_3 standard, and a CO maintenance area (western and central part of the SDAB only).

Federal Attainment Plans

In November 2020, the SDAPCD adopted the Air Quality Management Plan for attaining the federal 8-hour 75 ppb and 70 ppb Ozone standards (2020 Attainment Plan), which is the air basin's input to the State Implementation Plan (SIP) and required to demonstrate how the SDACPD proposes to attain the federal ozone standards. The plan anticipates attainment of the 75ppb and 70ppb NAAQS standards by 2026 and 2032, respectively. The 2020 Attainment Plan includes planning requirements for attaining the O_3 NAAQS including on-road motor vehicle emissions budgets for transportation conformity, a VMT offset demonstration, Reasonably Available Control Measures (RACM), Reasonable Further Progress (RFP), an Attainment Demonstration, and contingency measures in the event of a failure to meet a milestone or to attain by the predicted attainment date (SDAPCD 2020).

State Attainment Plans

SDAPCD and the San Diego Association of Governments (SANDAG) are responsible for developing and implementing the clean air plan for attainment and maintenance of the ambient air quality standards in the SDAB. The RAQS for the SDAB was initially adopted in 1991 and is updated every 3 years, most recently in 2016 (SDAPCD 2016c). The RAQS outlines SDAPCD's plans, and control measures designed to attain the CAAQS for O_3. The RAQS relies on information from CARB and SANDAG, including mobile and area source emissions, as well as information regarding projected growth in the County and the cities in the County, to forecast future emissions and then determine from that the strategies necessary for the

reduction of emissions through regulatory controls. The CARB mobile source emission projections and SANDAG growth projections are based on population, vehicle trends, and land use plans developed by the County and the cities in the County as part of the development of their general plans (SANDAG 2017a, 2017b).

In December 2016, SDAPCD adopted the revised RAQS for the County. Since 2007, the San Diego region has reduced daily VOC emissions and NO_x emissions by 3.9 percent and 7.0 percent, respectively; SDAPCD expects to continue reductions through 2035 (SDAPCD 2016c). These reductions were achieved through implementation of six VOC control measures and three NO_x control measures adopted in SDAPCD's 2009 RAQS (SDAPCD 2009a); in addition, SDAPCD is considering additional measures, including three VOC measures and four control measures to reduce 0.3 daily tons of VOCs and 1.2 daily tons of NO_x, provided they are found to be feasible region wide. In addition, SDAPCD has implemented nine incentive-based programs, has worked with SANDAG to implement regional transportation control measures, and has reaffirmed the state emission offset repeal.

In regard to particulate matter emissions reduction efforts, in December 2005, SDAPCD prepared a report titled "Measures to Reduce Particulate Matter in San Diego County" to address implementation of Senate Bill 656 in San Diego County (Senate Bill 656 required additional controls to reduce ambient concentrations of PM_{10} and $PM_{2.5}$) (SDAPCD 2005). In the report, SDAPCD evaluated the implementation of source-control measures that would reduce particulate matter emissions associated with residential wood combustion; various construction activities including earthmoving, demolition, and grading; bulk material storage and handling; carry-out and track-out removal and cleanup methods; inactive disturbed land; disturbed open areas; unpaved parking lots/staging areas; unpaved roads; and windblown dust (SDAPCD 2005).

SDAPCD Rules and Regulations

As stated previously, SDAPCD is responsible for planning, implementing, and enforcing federal and state ambient standards in the SDAB. The following rules and regulations apply to all sources in the jurisdiction of SDAPCD:

- **SDAPCD Regulation IV: Prohibitions; Rule 50: Visible Emissions**. Prohibits any activity causing air contaminant emissions darker than 20 percent opacity for more than an aggregate of three minutes in any consecutive 60-minute time period. In addition, Rule 50 prohibits any diesel pile-driving hammer activity causing air contaminant emissions for a period or periods aggregating more than four minutes during the driving of a single pile (SDAPCD 1997).
- **SDAPCD Regulation IV: Prohibitions; Rule 51: Nuisance.** Prohibits the discharge, from any source, of such quantities of air contaminants or other

materials that cause or have a tendency to cause injury, detriment, nuisance, annoyance to people and/or the public, or damage to any business or property (SDAPCD 1976).

- **SDAPCD Regulation IV: Prohibitions; Rule 55: Fugitive Dust.** Regulates fugitive dust emissions from any commercial construction or demolition activity capable of generating fugitive dust emissions, including active operations, open storage piles, and inactive disturbed areas, as well as track-out and carry-out onto paved roads beyond a project site (SDAPCD 2009b).
- **SDAPCD Regulation IV: Prohibitions; Rule 67.0.1: Architectural Coatings.** Requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce VOC emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories (SDAPCD 2015).

5.1.3 Existing Conditions

The City is located within the San Diego Air Basin (SDAB) and is subject to SDAPCD guidelines and regulations. The SDAB is one of 15 air basins that geographically divide California. The SDAB lies in the southwest corner of California. The SDAB comprises the entire San Diego region and covers approximately 4,260 square miles.

Climate

Regional

The climate in southern California, including the SDAB, is largely influenced by the position and strength of the semi-permanent high-pressure system over the Pacific Ocean ("Pacific High"), which creates a pattern of low clouds in the late-night and early-morning, hazy afternoon sunshine, and minimal temperature variation throughout the year. Under normal conditions, prevailing winds in the SDAB are driven by this Pacific High-pressure system, which blows winds onshore (i.e., from the sea to land) in the daytime and offshore (i.e., from the land towards sea) at night.

The climate in the SDAB is classified as Mediterranean, given the mild dry summers, and mild wet winters. San Diego typically has over 150 days per year above 70 degrees Fahrenheit (°F) and approximately 8-12" of rainfall annually, mostly between November and March.

The SDAB experiences frequent temperature inversions, where temperatures, which typically decrease with height, instead increase with increasing altitude. Temperature inversion prevents air close to the ground from mixing with air higher up and can result in air pollutants getting trapped near the surface. Subsidence inversions occur during warmer months when descending air from the Pacific High-pressure zone meets cool marine air and creates a boundary that prevents vertical dispersion, and effectively traps pollutants at the surface. During winter months,

radiation inversion occurs when air near the surface cools at night, while the air aloft remains warm, creating a boundary that traps pollutants (County of San Diego 2007 and SDAPCD 2022).

In the summer, temperature inversions lead to increases in O_3 within the SDAB. As pollutants become trapped, photochemical reactions (i.e., driven by sunlight) between hydrocarbons and nitrogen oxides (NO_x) produce O_3, which contributes to the formation of smog. Light daytime winds from the northwest can aggravate this condition by driving pollutants inland toward the mountains. During the fall and winter, the shallow inversion layer leads to increased carbon monoxide (CO) and NO_x concentrations, which are driven primarily by automobiles, and $PM_{2.5}$ concentrations which are due to increased use of residential wood burning in cooler months (SDAPCD 2022).

The typically mild climatological pattern within the SDAB can be interrupted in the fall months by "Santa Ana" winds, which result from high-pressure systems over the Nevada-Utah region and force hot, dry winds west to the Pacific Ocean. These winds can be powerful and incessant, blowing pollutants within the basin out to sea. Alternatively, a weak Santa Ana can bring pollutants south from the neighboring South Coast Air Basin (SCAB) and increase the O_3 concentrations within the SDAB (SDAPCD 2022).

Under certain conditions, atmospheric oscillation results in the offshore transport of air from the Los Angeles region to San Diego County. This often produces high O_3 concentrations, as measured at air pollutant monitoring stations within San Diego County. The transport of air pollutants from Los Angeles to San Diego has also occurred within the stable layer of the elevated subsidence inversion, where high levels of O_3 are transported.

Local

The annual average temperature in Vista is approximately 64°F. Average winter temperatures are approximately 56°F, and average summer temperatures are approximately 70°F. Annual precipitation in the City averages approximately 13.09 inches. Precipitation occurs mostly during the winter and relatively infrequently during the summer (WRCC 2022). Wind monitoring data recorded at McClellan-Palomar Airport in Carlsbad indicates that the predominant wind direction is west-southwest, with an average wind speed of approximately seven miles per hour (Winderfinder 2022).

Criteria Air Pollutants

Criteria air pollutants are defined as pollutants for which the federal and state governments have established ambient air quality standards, or criteria, for outdoor concentrations to protect public health. The federal and state standards have been set, with an adequate margin of safety, at levels above which concentrations could be harmful to human health and welfare. These standards are designed to protect

the most sensitive persons from illness or discomfort. Pollutants of concern include O_3, NO_2, CO, sulfur dioxide (SO_2), PM_{10}, $PM_{2.5}$, and lead. These pollutants are discussed in the following paragraphs. In California, sulfates, vinyl chloride, hydrogen sulfide, and visibility-reducing particles are also regulated as criteria air pollutants.

Ozone (O_3)

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

O_3 in the troposphere causes numerous adverse health effects; short-term exposures (lasting for a few hours) to O_3 at levels typically observed in Southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes (EPA 2013). These health problems are particularly acute in sensitive receptors such as the sick, the elderly, and young children.

Volatile Organic Compounds (VOCs)

Hydrocarbons are organic gases that are formed from hydrogen and carbon and sometimes other elements. Hydrocarbons that contribute to formation of O_3 are referred to and regulated as VOCs (also referred to as reactive organic gases). Combustion engine exhaust, oil refineries, and fossil-fueled power plants are the sources of hydrocarbons. Other sources of hydrocarbons include evaporation from petroleum fuels, solvents, dry-cleaning solutions, and paint.

The primary health effects of VOCs result from the formation of O_3 and its related health effects. High levels of VOCs in the atmosphere can interfere with oxygen intake by reducing the amount of available oxygen through displacement. Carcinogenic forms of hydrocarbons, such as benzene, are considered TACs.

Nitrogen Dioxide

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

NO_2 can irritate the lungs, cause bronchitis and pneumonia, and lower resistance to respiratory infections (EPA 2016a).

Carbon Monoxide

CO is a colorless, odorless gas formed by the incomplete combustion of hydrocarbon, or fossil fuels. CO is emitted almost exclusively from motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains. In urban areas, such as the City, automobile exhaust accounts for the majority of CO emissions. CO is a non-reactive air pollutant that dissipates relatively quickly; therefore, ambient CO concentrations generally follow the spatial and temporal distributions of vehicular traffic. CO concentrations are influenced by local meteorological conditions—primarily wind speed, topography, and atmospheric stability. CO from motor vehicle exhaust can become locally concentrated when surface-based temperature inversions are combined with calm atmospheric conditions, which is a typical situation at dusk in urban areas from November to February. The highest levels of CO typically occur during the colder months of the year, when inversion conditions are more frequent.

In terms of adverse health effects, CO competes with oxygen, often replacing it in the blood, reducing the blood's ability to transport oxygen to vital organs. The results of excess CO exposure can include dizziness, fatigue, and impairment of central nervous system functions.

Particulate Matter (PM)

Particulate matter pollution consists of very small liquid and solid particles floating in the air, which can include smoke, soot, dust, salts, acids, and metals. Particulate matter can form when gases emitted from industries and motor vehicles undergo chemical reactions in the atmosphere. $PM_{2.5}$ and PM_{10} represent fractions of particulate matter. Coarse particulate matter (PM_{10}) consists of particulate matter that is 10 microns or less in diameter and is about 1/7 the thickness of a human hair. Major sources of PM_{10} include crushing or grinding operations; dust stirred up by vehicles traveling on roads; wood-burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and

photochemical reactions. Fine particulate matter ($PM_{2.5}$) consists of particulate matter that is 2.5 microns or less in diameter and is roughly 1/28 the diameter of a human hair. $PM_{2.5}$ results from fuel combustion (e.g., from motor vehicles and power generation and industrial facilities), residential fireplaces, and woodstoves. In addition, $PM_{2.5}$ can be formed in the atmosphere from gases such as sulfur oxides (SO_x), NO_x, and VOCs.

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

People with influenza, people with chronic respiratory and cardiovascular diseases, and the elderly may suffer worsening illness and premature death as a result of breathing particulate matter. People with bronchitis can expect aggravated symptoms from breathing in particulate matter. Children may experience a decline in lung function due to breathing in PM_{10} and $PM_{2.5}$ (EPA 2009).

Sulfur Dioxide

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

SO_2 is an irritant gas that attacks the throat and lungs and can cause acute respiratory symptoms and diminished ventilator function in children. When combined with particulate matter, SO_2 can injure lung tissue and reduce visibility and the level of sunlight. SO_2 can also yellow plant leaves and erode iron and steel.

Lead

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

phaseout of leaded gasoline, secondary lead smelters, battery recycling, and manufacturing facilities are becoming lead-emissions sources of greater concern.

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

Non-Criteria Pollutants

Toxic Air Contaminants (TACs)

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

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

Diesel Particulate Matter

DPM is part of a complex mixture that makes up diesel exhaust. Diesel exhaust is composed of two phases, gas and particle, both of which contribute to health risks. More than 90 percent of DPM is less than 1 micrometer in diameter (about 1/70th the diameter of a human hair), and thus is a subset of $PM_{2.5}$ (CARB 2022b). DPM is typically composed of carbon particles ("soot," also called black carbon) and

numerous organic compounds, including over 40 known cancer-causing organic substances. DPM is emitted from a broad range of diesel engines: on-road diesel engines of trucks, buses, and cars and off-road diesel engines including locomotives, marine vessels, and heavy-duty construction equipment, among others. Approximately 70 percent of all airborne cancer risk in California is associated with DPM (CARB 2000). To reduce the cancer risk associated with DPM, CARB adopted a diesel risk reduction plan in 2000 (CARB 2000). Because it is part of $PM_{2.5}$, DPM also contributes to the same non-cancer health effects as $PM_{2.5}$ exposure. These effects include premature death; hospitalizations and emergency department visits for exacerbated chronic heart and lung disease, including asthma; increased respiratory symptoms; and decreased lung function in children. Several studies suggest that exposure to DPM may also facilitate development of new allergies (CARB 2022b). Those most vulnerable to non-cancer health effects are children whose lungs are still developing and the elderly who often have chronic health problems.

Odorous Compounds

Odors are generally regarded as an annoyance rather than a health hazard. Manifestations of a person's reaction to odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting and headache). The ability to detect odors varies considerably among the population and overall is quite subjective. The occurrence and severity of odor impacts depend on the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of receptors.

Air Quality Conditions

Air Quality Monitoring

The SDAPCD operates a network of ambient air monitoring stations throughout the County, which measure ambient concentrations of pollutants and determine whether the ambient air quality meets the CAAQS and the NAAQS. SDAPCD monitors air quality conditions at 10 locations throughout the basin. The Camp Pendleton monitoring station represents the closest monitoring station to the City for concentrations for O_3 and NO_2. The Escondido monitoring station is the closest monitoring station to the City of Vista for CO and $PM_{2.5}$. The closest monitoring station for SO_2 and PM_{10} is the El Cajon-533 First Street monitoring station. Ambient concentrations of pollutants from 2019 through 2021 are presented in **Table 5.2.**

Table 5.2: Local Ambient Air Quality Data

Monitoring Station	Unit	Averaging Time	Agency/Method	Ambient Air Quality Standard	Measured Concentration by Year			Exceedances by Year		
					2019	2020	2021	2019	2020	2021
Ozone (O_3)										
Camp Pendleton	ppm	Maximum 1-hour concentration	State	0.09	0.075	0.094	0.074	0	0	0
	ppm	Maximum 8-hour concentration	State	0.070	0.065	0.074	0.059	0	3	0
			Federal	0.070	0.064	0.074	0.059	0	3	0
Nitrogen Dioxide (NO_2)										
Camp Pendleton	ppm	Maximum 1-hour concentration	State	0.18	0.053	0.058	0.059	0	0	0
			Federal	0.100	0053	0.058	0.059	0	0	0
	ppm	Annual concentration	State	0.030	0.005	0.006	*	0	0	0
			Federal	0.053	0.005	0.006	0.006	0	0	0
Carbon Monoxide (CO)										
Escondido-Rancho Carmel Drive	ppm	Maximum 1-hour concentration	State	20	4.1	3.3	3.0	0	0	0
			Federal	35	4.1	3.3	3.0	0	0	0
	ppm	Maximum 8-hour concentration	State	9.0	2.5	1.7	1.8	0	0	0
			Federal	9	2.5	1.7	1.8	0	0	0
Sulfur Dioxide (SO_2)										

Table 5.2: Local Ambient Air Quality Data

Monitoring Station	Unit	Averaging Time	Agency/Method	Ambient Air Quality Standard	Measured Concentration by Year			Exceedances by Year		
El Cajon-533 First Street	ppm	Maximum 1-hour concentration	Federal	0.075	0.0008	0.0017	0.0016	0	0	0
	ppm	Maximum 24-hour concentration	State	0.04	0.0003	0.0004	0.0003	0	0	0
			Federal	0.140	0.0003	0.0004	0.0003	0	0	0
	ppm	Annual concentration	Federal	0.030	0.00007	0.00009	0.00006	0	0	0
Coarse Particulate Matter (PM_{10})										
El Cajon–533 First Street	µg/m³	Maximum 24-hour concentration	State	50	37	*	*	0	0	0
			Federal	150	38	55	40.0	0	0	0
	µg/m³	Annual concentration	State	20	*	*	*	*	*	*
Fine Particulate Matter ($PM_{2.5}$)										
Escondido-Rancho Carmel Drive	µg/m³	Maximum 24-hour concentration	Federal	35	18.9	40.2	23.5	0	1	0
	µg/m³	Annual concentration	State	12	8.2	9.3	8.5	0	0	0
			Federal	12.0	8.2	9.3	8.5	0	0	0

Source: SDAPCD

** indicates there was insufficient data available to determine the value.*

Air Pollution Sources

Table 5.3 summarizes the annual average daily criteria air pollutant emissions inventories for the SDAB in 2012. The inventories are broken out by the following source categories:

- **Stationary Sources**, which include fuel combustion from electric utilities and industrial processes, waste disposal, cleaning and surface coatings, petroleum production, and other industrial processes (e.g., metal and mineral processes).
- **Areawide Sources**, which include solvent evaporation, and other miscellaneous processes such as farming operations and construction and demolition.
- **On-Road Motor Vehicles**, which include passenger cars, medium- and heavy-duty trucks, buses, motorcycles, etc.
- **Other Mobile Sources,** which include aircraft, trains, ocean-going vessels, and other equipment and vehicles that operate off-road.

Table 5.3: SDAB 2012 Estimated Annual Average Daily Emissions by Source

Source	ROG	CO	NO_x	SO_x	PM_{10}	$PM_{2.5}$
	Tons per day					
Stationary	30.21	13.97	4.27	0.32	6.95	2.39
Areawide	36.03	15.18	2.59	0.14	54.21	10.62
On-Road Motor Vehicles	34.56	276.93	72.94	0.44	5.96	3.21
Other Mobile Sources	29.01	170.91	31.45	0.33	3.74	3.39
Total	**129.83**	**477.02**	**111.23**	**1.20**	**70.85**	**19.63**

Source: CARB (2022)

Attainment Status

Pursuant to the 1990 CAA Amendments, EPA classifies air basins (or portions thereof) as "attainment" or "nonattainment" for each criteria air pollutant, based on whether the NAAQS have been achieved. Generally, if the recorded concentrations of a pollutant are lower than the standard, the area is classified as "attainment" for that pollutant. If an area exceeds the standard, the area is classified as "nonattainment" for that pollutant. As previously discussed, these standards are set by EPA or CARB for the maximum level of a given air pollutant that can exist in the outdoor air without unacceptable effects on human health or the public welfare. If there is not enough data available to determine whether the standard is exceeded in an area, the area is designated as "unclassified" or "unclassifiable."

The designation of "unclassifiable/attainment" means that the area meets the standard or is expected to be meet the standard despite a lack of monitoring data. Areas that achieve the standards after a nonattainment designation are redesignated as maintenance areas and must have approved maintenance plans to ensure continued attainment of the standards. The California Clean Air Act, like its federal counterpart, called for the designation of areas as "attainment" or "nonattainment," but based on the CAAQS rather than the NAAQS.

Table 5.4 summarizes SDAB's federal and state attainment designations for each of the criteria pollutants.

Table 5.4: SDAB Attainment Designation

Pollutant	Federal Designation	State Designation
O_3 (8-hour)	**Nonattainment**	**Nonattainment**
O_3 (1-hour)	Attainment[a]	**Nonattainment**
CO	Attainment	Attainment
PM_{10}	Unclassifiable[b]	**Nonattainment**
$PM_{2.5}$	Attainment	**Nonattainment**[c]
NO_2	Attainment	Attainment
SO_2	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	(No federal standard)	Attainment
Hydrogen sulfide	(No federal standard)	Unclassified
Visibility-reducing particles	(No federal standard)	Unclassified
Vinyl chloride	(No federal standard)	No designation

Source: SDAPCD 2022b

Definitions: attainment = meets the standards; nonattainment = does not meet the standards; unclassified or unclassifiable = insufficient data to classify

Notes: SDAB = San Diego; O_3 = ozone; CO = carbon monoxide; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; NO_2 = nitrogen dioxide; SO_2 = sulfur dioxide.

[a] The federal 1-hour standard of 0.12 parts per million (ppm) was in effect from 1979 through June 15, 2005. The revoked standard is referenced here because it was employed for such a long period and because this benchmark is addressed in SIPs.

[b] At the time of designation, if the available data does not support a designation of attainment or nonattainment, the area is designated as unclassifiable.

[c] CARB has not reclassified the region to attainment yet due to (1) incomplete data, and (2) the use of non-California Approved Samplers (CAS). While data collected does meet the requirements for designation of attainment with federal $PM_{2.5}$ standards, the data completeness requirements for state $PM_{2.5}$ standards substantially exceed federal requirements and mandates and have historically not been feasible for most air districts to adhere to given local resources. APCD has begun replacing most regional filter based $PM_{2.5}$ monitors as they reach the end of their useful life with continuous $PM_{2.5}$ air monitors to ensure collected data meets stringent completeness requirements in the future. APCD anticipates these new monitors will be approved as "CAS" monitors once CARB review the list of approved monitors, which has not been updated since 2013.

Regional Toxic Air Contaminant Background Levels

Ambient levels of selected TACs are measured by CARB at several locations in southern California. The closest TAC monitoring stations to the City are the El Cajon monitoring station (approximately 33 miles south–southeast), the Chula Vista monitoring station (approximately 41 miles south), and the Riverside monitoring station (approximately 55 miles north). Each of these stations may potentially contain higher, as well as different, TAC concentrations than those near the city because of the distance and the myriad of land uses between and in those areas. Because DPM is not collected at the monitoring stations, background concentrations for DPM were obtained from the 2009 California Almanac of Emissions and Air Quality.

The annual average concentration for DPM in the SDAB is 1.4 $\mu g/m^3$ with an estimated 420 excess inhalation-related cancer cases per million people in the year 2000, which is the latest year for which DPM estimates are available. This health risk is lower than the statewide average of 540 inhalation-related excess cancer cases per million people, which represents a 52 percent drop between 1990 and 2000 (CARB 2009). For perspective, one out of three Americans will eventually develop cancer, and one out of four will die from cancer. Therefore, the national average background cancer incidence is equivalent to 333,000 chances in one million.

The most recent DPM emissions trends for the SDAB are provided in the 2013 edition of the California Almanac of Emissions and Air Quality and are summarized below in **Table 5.5** by source. The decrease in DPM emissions from 2000 to 2010 is primarily attributed to the reduction in exhaust emissions from diesel mobile sources. These reductions are projected to continue to decline through 2035 with regulations and cleaner technologies.

Table 5.5: SDAB Estimated Annual Average Daily Diesel PM Emissions by Source

Source	2000	2005	2010	2015	2020	2025	2030	2035
	Tons per day							
Stationary	0	0	0	0	0	0	0	0
Areawide	0	0	0	0	0	0	0	0
On-Road Motor Vehicles	2	2	1	0	0	0	0	0
Gasoline Vehicles	0	0	0	0	0	0	0	0
Diesel Vehicles	2	2	1	0	0	0	0	0
Other Mobile Sources	2	1	1	1	0	0	0	0
Gasoline Fuel	0	0	0	0	0	0	0	0
Diesel Fuel	2	1	1	1	0	0	0	0
Other Fuel	0	0	0	0	0	0	0	0
Total	***4***	***3***	***2***	***1***	***1***	***1***	***1***	***1***

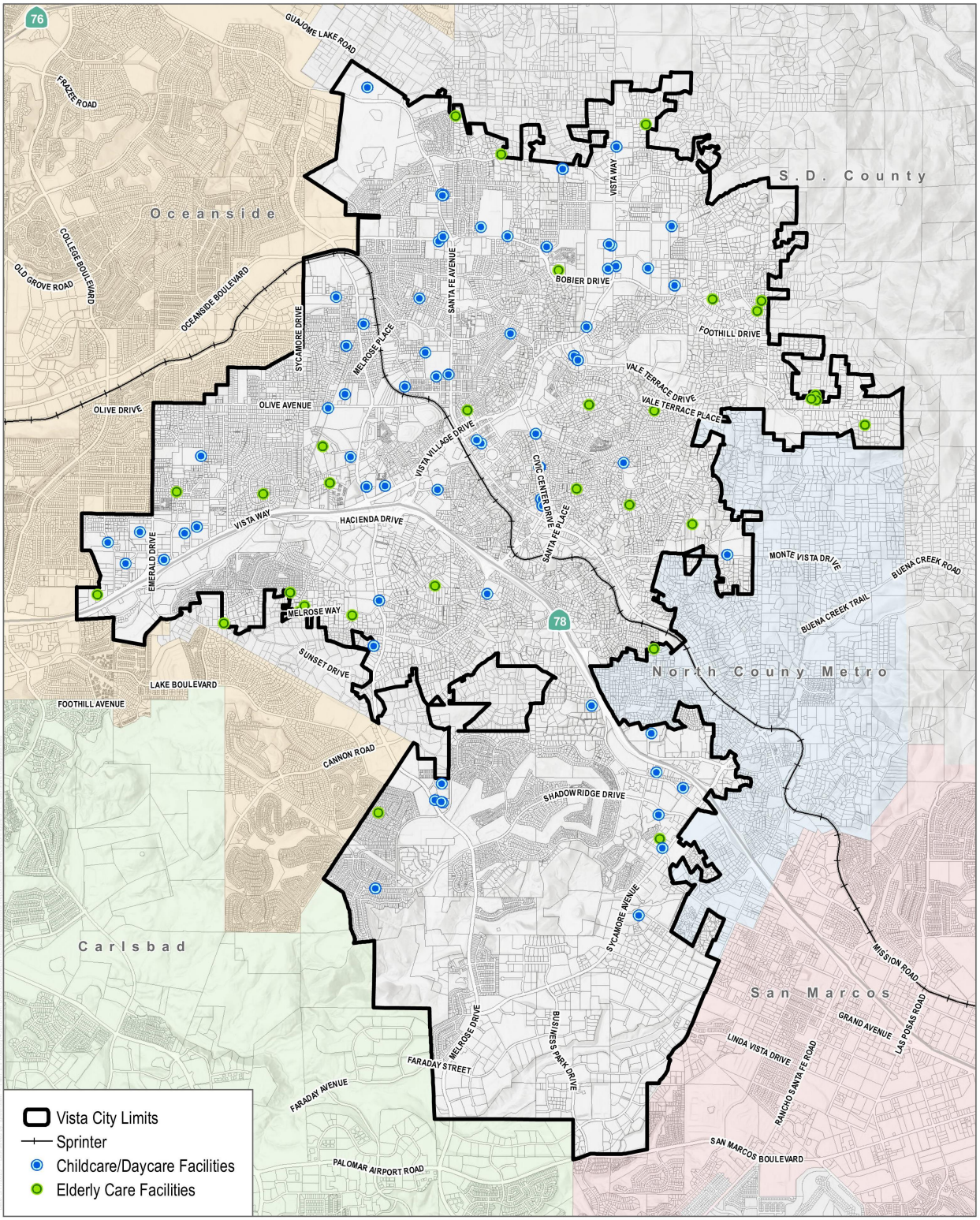
Source: CARB (2013)

Sensitive Land Uses and Populations

The impact of air emissions on sensitive members of the population is a particular concern. Sensitive land uses are defined as locations where particularly pollutant-sensitive members of the population may reside or where the presence of air pollutant emissions could adversely affect the use of the land. According to the SDACPD, sensitive receptors are those who are especially susceptible to adverse health effects from exposure to toxic air contaminants, such as children, the elderly, and the ill (SDAPCD 2022).

Similarly, CARB has identified the following people as the most likely to be affected by air pollution: children younger than 14, the elderly older than 65, athletes, and people with cardiovascular and chronic respiratory diseases. Locations that may contain a high concentration of sensitive population groups include residential areas, hospitals, daycare facilities, elder-care facilities, and elementary schools. **Figure 5.1**, Air Quality Sensitive Receptors, identifies locations of sensitive receptors and sensitive land uses located within City limits and land uses where sensitive populations typically spend a considerable amount of time and thus may experience long-term exposure to air pollutant emission sources.

Figure 5.1: Air Quality Sensitive Receptors



5.2 Water Resources and Quality

This section describes the existing conditions and regulatory framework related to water resources and quality in the City of Vista. Information regarding potable water supply, demand, and forecasts as well as stormwater drainage systems are located later in this Report in Chapter 8, "Public Facilities, Services, and Infrastructure."

5.2.1 Findings

- The City of Vista is located within two hydrologic units (HUs), also identified as watershed management areas (WMAs) – the San Luis Rey HU (also known as the San Luis Rey WMA) and Carlsbad HU (also known as the Carlsbad WMA).
- Several streams traverse the City of Vista, draining to coastal estuaries including Loma Alta Slough, Buena Vista Lagoon, Agua Hedionda Lagoon, and Batiquitos Lagoon, all ultimately discharging to the Pacific Ocean.
- Surface waters in the City of Vista and the coastal waters that they drain to have beneficial uses established in the Basin Plan for the San Diego Region.
- The City of Vista is not located within a groundwater basin.
- The current Municipal Storm Water Permit required the City of Vista and the other 20 Co-permittees in San Diego County to prepare watershed-based Water Quality Improvement Plans (WQIPs) that identify activities they will implement to improve water quality. The City of Vista is a Permit-designated responsible agency in the San Luis Rey and Carlsbad WMAs and participated in the development of WQIPs for these two WMAs. The WQIPs for those two WMAs identify the priority water quality conditions in each WMA, corresponding numeric or narrative goals, and strategies that the City of Vista and other responsible agencies will implement to meet the goals.
- Jurisdictional activities that the City of Vista implements to meet the water quality goals for the Carlsbad and San Luis Rey River WMAs can be found in the City of Vista's Jurisdictional Runoff Management Plan (JRMP).

5.2.2 Regulatory Setting

Federal

Clean Water Act

The United States Environmental Protection Agency (EPA) is the lead Federal agency responsible for water quality management. The Clean Water Act (CWA) is the primary Federal law that governs and establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. Pursuant to Federal law, EPA has published water quality regulations under Title 40 of the Code of Federal Regulations (CFR). Various elements of the CWA address water quality. These are discussed below.

Water Quality Criteria/Standards

Section 303 of the CWA requires states to adopt water quality standards for all surface waters of the United States. Water quality standards consist of designated beneficial uses of the water body in question and criteria that protect the designated uses. The EPA publishes advisory water quality criteria that reflect the latest scientific knowledge on the kind and extent of all effects on health and welfare that may be expected from the presence of pollutants in water. As described in the discussion of State regulations below, the California State Water Resources Control Board (SWRCB) and nine regional water quality control boards (RWQCBs) have designated authority in California to identify beneficial uses and adopt applicable water quality objectives (WQOs).

CWA Section 303(d) Impaired Waters List

Section 303(d) of the CWA requires states to identify waters where current pollution control technologies alone cannot meet the water quality standards set for that waterbody. Every two years, states are required to submit a list of impaired waters and any that may soon become impaired to the EPA. As part of submittal to EPA, States must develop a total maximum daily load (TMDL) for each of the listed pollutants. In California, implementation of TMDLs is achieved through water quality control plans, known as Basin Plans.

CWA Section 401

Section 401 of the Clean Water Act requires that any person applying for a federal permit or license, which may result in a discharge of pollutants into waters of the United States, must obtain a state water quality certification that the activity complies with all applicable water quality standards, limitations, and restrictions. In California, the authority to grant a water quality certification or waive the requirement is delegated by the SWRCB to the nine RWQCBs. A Section 401 Water Quality Certification is required for any activities requiring a Section 404 permit (see CWA Section 404, below) to discharge dredged or fill materials into waters of the United States.

CWA Section 404

Section 404 of the Clean Water Act requires authorization from the Secretary of the Army, acting through the United States Army Corps of Engineers, for the discharge of dredged or fill material into all waters of the United States, including wetlands. Waters of the United States and their lateral limits are defined in Title 33, Part 328.3(a) of the Code of Federal Regulations. Any activity resulting in the placement of dredged or fill material within waters of the United States requires a permit from USACE. In accordance with Section 401 of the CWA, projects that apply for a USACE permit for discharge of dredged or fill material must also obtain water quality certification from the appropriate RWQCB indicating that the project will uphold water quality standards.

CWA Section 402

The CWA Section 402(p) established the National Pollutant Discharge Elimination System (NPDES) permit program that regulates municipal separate storm sewer system (MS4) discharges to surface waters of the United States. Under the NPDES program, all industrial facilities (including active construction sites) and municipalities of a certain size that discharge pollutants into waters of the United States are required to obtain an NPDES permit. Stormwater discharges in California are commonly regulated through general and individual NPDES permits, which are adopted by the SWRCB or RWQCBs and administered by the RWQCBs.

State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Act is the principal statute governing water quality and water pollution issues in California and is the primary vehicle for implementation of California's responsibilities under the CWA. Unlike the Clean Water Act, the Porter Colone Act applies to both surface and ground water. The Porter-Cologne Act gave authority to the SWRCB and each of the nine RWQCBs power to protect water quality. The City of Vista is under the jurisdiction of the San Diego RWQCB - Region 9. The SWRCB and the San Diego RWQCB have the authority and responsibility to adopt plans and policies, regulate discharges to surface and groundwater, regulate waste disposal sites, and require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substances, sewage, or oil or petroleum products.

Each RWQCB must formulate and adopt a water quality control plan (Basin Plan) for its region. The Basin Plans must conform to the policies set forth in the Porter-Cologne Act and established by the SWRCB in its State water policy. The Porter-Cologne Act also provides that an RWQCB may include within its Basin Plan water discharge prohibitions applicable to conditions, areas, or types of waste.

San Diego RWQCB Basin Plan

The San Diego RWQCB implements its Basin Plan for Region 9 which designates beneficial uses for water bodies in the San Diego Region and establishes water quality objectives and implementation plans to protect those beneficial uses. The Basin Plan is a regulatory tool for standards, prohibitions, and regulating discharges. The San Diego RWQCB also has regulatory authority to enforce the requirements of the CWA and the California Water Code. This includes the regulatory authority to enforce the implementation of TMDLs, the adoption of waste discharge requirements to ensure compliance with surface WQOs, and groundwater management.

NPDES Construction General Permit for Stormwater Discharges Associated with Construction Activity (CGP)

Under the Construction General Permit (CGP), the State requires that projects disturbing more than one acre of land during construction file a Notice of Intent (NOI) with the RWQCB in order to be covered under the CGP. The following construction activities generate the need for a CGP: clearing; grading; stockpiling; and excavation. A storm water pollution prevention plan (SWPPP) must be developed and implemented for each site covered by the CGP and best management practices (BMPs) need to be included and designed to prevent construction pollutants from contacting stormwater and keep products of erosion from moving off-site into receiving waters throughout the construction and life of the project.

NPDES General Permit for Stormwater Discharges Associated with Industrial Activities (IGP)

The Industrial General Permit (IGP) regulates industrial storm water discharges and authorized non-storm water discharges from industrial facilities in California. This general permit applies to operation of industrial facilities associated with nine broad categories of industrial activities. Under the IGP, dischargers must demonstrate conformance with applicable industrial BMPs and prepare an industrial storm water pollution prevention plan (SWPPP). The Industrial General Permit includes the required minimum BMP categories that must be implemented and maintained at industrial facilities to prevent pollutants from entering stormwater discharges or reduce their levels.

Senate Bill (SB) 205, Business Licenses: Storm Water Discharge Compliance, requires a person applying for a new or renewed business license to demonstrate enrollment in a NPDES storm water permit, if such a permit is required. Under SB 205, industrial businesses must show enrollment in the IGP prior to the City of Vista issuing or renewing a business license.

Water Code

The California Water Code is enforced by the California Department of Water Resources (DWR). The Water Code outlines California Waters of the State and regulates the discharge of waste or fill into these waters.

Local

NPDES Permit and Waste Discharge Requirements for Discharges from the Municipal Separate Storm Sewer Systems (MS4s) Draining the Watersheds within the San Diego Region (Municipal Storm Water Permit)

The San Diego RWQCB issues the Municipal Storm Water Permit to establish the conditions under which pollutants can be discharged from the MS4s within the San Diego region to local streams, coastal lagoons, and the ocean. The Municipal Storm

Water Permit implements requirements of the Clean Water Act and Federal NPDES stormwater regulations.

The City of Vista is a Co-permittee under the Municipal Storm Water Permit. As a Co-permittee, the City of Vista must implement several storm water management programs, including programs designed to control storm water discharges from new development and redevelopment. Specific Sections of the Municipal Storm Water Permit that affect design and construction of new development and redevelopment projects include Section E.3, Development Planning Component, and E.4, Construction Management. These titles refer to required components of the City of Vista's Jurisdictional Runoff Management Program (JRMP), which must be implemented by the City of Vista under the Municipal Storm Water Permit. In addition, Attachment A of the Municipal Storm Water Permit, titled Discharge Prohibitions and Special Protections, provides waste discharge prohibitions to the waters of the state within the boundaries of the San Diego Region, including construction, and grading activities. Attachment E of the Municipal Permit, titled Specific Provisions for Total Maximum Daily Loads, provides requirements for TMDLs. The City of Vista implements the requirements of the Municipal Storm Water Permit through the JRMP, Stormwater Management and Discharge Control Ordinance, and "BMP Design Manual."

Jurisdictional Runoff Management Program

The Jurisdictional Runoff Management Program (JRMP) documents the City of Vista's approach for improving water quality in its creeks, lagoons, and the ocean through reduced discharges of pollutants to the MS4.

The JRMP was developed in accordance with Section E of the Municipal Storm Water Permit, and presents an integrated programmatic approach to:

- Reduce the discharge of pollutants from the MS4 to the maximum extent practicable (MEP) standard;
- Effectively prohibit non-stormwater discharges; and
- Protect and improve the quality of water bodies in the City.

  The JRMP describes operational programs and activities developed to meet the requirements of the current Municipal Storm Water Permit, and it also serves as the implementation mechanism for Water Quality Improvement Plan (WQIP) strategies.

Vista Municipal Code

Chapter 13.18 of the Vista Municipal Code, Stormwater Management and Discharge Control Ordinance, sets forth the requirements for stormwater management in the City of Vista.

Stormwater Management and Discharge Control Ordinance

The purposes of the Stormwater Management and Discharge Control Ordinance are as follows:

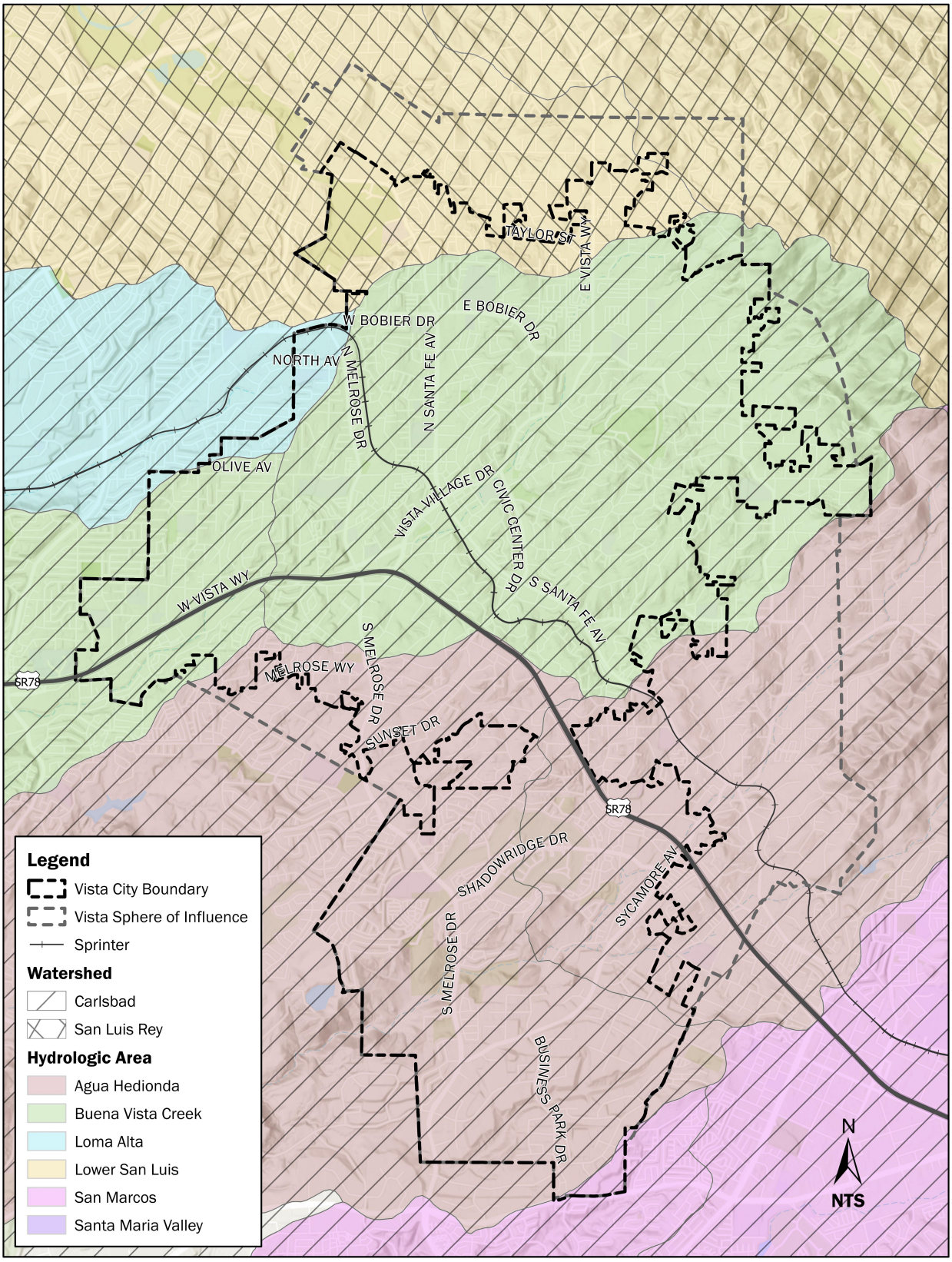
- To establish requirements for discharges into the Municipal Separate Storm Sewer System (MS4), receiving waters, and the environment;
- To protect, to the maximum extent practicable (MEP), life, property, receiving waters, aquatic life, and the environment from loss, injury, degradation, or damage by discharges from within the City' s jurisdiction;
- To protect the MS4 from damage; and
- To meet the requirements of state and federal law and the City of Vista's MS4 Permit.

5.2.3 Existing Conditions

The City of Vista is located within two hydrologic units (HUs), also identified as watershed management areas (WMAs) – the San Luis Rey HU (also known as the San Luis Rey WMA) and Carlsbad HU (also known as the Carlsbad WMA). Each of these HUs/WMAs contains creeks, rivers, and other water bodies. As shown in **Figure 5.2**, the majority of the City of Vista lies within the Carlsbad HU, which is comprised of multiple distinct sub-watersheds or hydrologic areas (HAs). The City of Vista drains to four of the HAs in the Carlsbad HU including: Loma Alta, Buena Vista, Agua Hedionda, and San Marcos. The Buena Vista and Agua Hedionda HAs in the Carlsbad HU drain the largest percentage of the City of Vista. Drainage into the San Luis Rey HU is limited to the northern portion of city limits.

Several streams traverse the City of Vista. In the San Luis Rey HU, unnamed tributaries to the San Luis Rey River flow toward Guajome Lake and wetlands adjacent to the lake. Streams in the San Luis Rey HU ultimately outlet to the Pacific Ocean via the San Luis Rey River. Streams in the Carlsbad HU, include Loma Alta Creek, Buena Vista Creek, Buena Creek, Agua Hedionda Creek, and other un-named creeks. These creeks drain to coastal estuaries including Loma Alta Slough, Buena Vista Lagoon, Agua Hedionda Lagoon, and Batiquitos Lagoon, all ultimately discharging to the Pacific Ocean.

Figure 5.2: Hydrologic Units



Surface waters in the City of Vista and the coastal waters that they drain to have beneficial uses established in the Basin Plan for the San Diego Region. Beneficial uses are defined as the uses of water necessary for the survival or wellbeing of man, plants, and wildlife. These uses of water serve to promote the tangible and intangible economic, social, and environmental goals of mankind. (Water Quality Control Plan for the San Diego Basin, 1994).

Based on the San Diego Basin Plan Map, the City of Vista is not located within a groundwater basin. However, the San Marcos Area basin and San Luis Rey basin are located southeast and northeast of Vista, respectively.

The current Municipal Storm Water Permit required the City and the other 20 Co-permittees in San Diego County to prepare watershed-based Water Quality Improvement Plans (WQIPs) that identify activities they will implement to improve water quality. Each WQIP focuses on one Watershed Management Area (WMA) and is collaboratively prepared by the municipal agencies in the WMA. The City of Vista is a Permit-designated responsible agency in the San Luis Rey and Carlsbad WMAs. The WQIPs for those two WMAs identify the priority water quality conditions in each WMA, corresponding numeric or narrative goals, and strategies that the City of Vista and other responsible agencies will implement to meet the goals.

The City of Vista's JRMP summarizes the priority water quality conditions for sub-watershed areas in the Carlsbad and San Luis Rey River WMAs affecting the JRMP. The following information presented in the City of Vista's JRMP is compiled and adapted from the WQIPs for the San Luis Rey and Carlsbad WMAs dated 2016. It is important to note that the WQIPs and the priority water quality conditions identified within them are subject to change.

- Indicator bacteria is identified as the highest-priority water quality condition (HPWQC) for the San Luis Rey River within the San Luis Rey River WMA. Other priority water quality conditions, pollutants, or stressors for the San Luis Rey River include nutrients (N and P), eutrophic conditions, total dissolved solids, index of biological integrity, chloride, and toxicity.
- Eutrophic conditions (nutrients) is identified as the HPWQC for the Loma Alta Slough within the Carlsbad WMA. Other priority water quality conditions, pollutants, or stressors for the Loma Alta Slough include indicator bacteria, toxicity, trash, and riparian habitat degradation.
- No HPWQC is identified for the Buena Vista Lagoon within the Carlsbad WMA. Priority water quality conditions, pollutants, or stressors for the Buena Vista Lagoon include nutrients, indicator bacteria, sediment/siltation, trash, and riparian habitat degradation.
- Hydromodification impacts is identified as the HPWQC for Agua Hedionda Creek within the Carlsbad WMA. Other priority water quality conditions,

pollutants, or stressors for Agua Hedionda Creek include trash, riparian habitat degradation, indicator bacteria, toxicity, and nutrients.

Activities that the City of Vista implements to meet the water quality goals for the Carlsbad and San Luis Rey River WMAs, as described in the City of Vista's JRMP, include:

- Illicit discharge detection and elimination: this program is designed to actively detect and eliminate illicit connections and illegal discharges to the storm drain system, preventing the discharge of pollutants that would otherwise be conveyed untreated to nearby receiving water bodies.
- Development planning: the City of Vista has established design standards for new development and redevelopment projects that require the implementation of permanent stormwater control measures, including low impact development (LID) techniques, source control BMPs, and post-construction structural BMPs.
- Construction management: this includes City-wide administrative, education, inspection, enforcement, incentive, and BMP programs.
- Existing development: the City of Vista has programs for industrial and commercial facilities, municipal facilities, municipal infrastructure, and residential areas. These programs facilitate BMP implementation, education, inspections, and enforcement.
- Education and participation: the City of Vista has training programs for municipal staff, educational outreach to the public, and public participation programs.

Details of the above-listed programs and a detailed list of City of Vista Water Quality Improvement Strategies can be found in the City of Vista's JRMP.

5.3 Biological Resources

This section describes existing biological resources within the City of Vista and the regulatory framework applicable to the protection of those biological resources which are considered sensitive or special status.

5.3.1 Findings

- The City of Vista is largely developed with few remaining areas of undeveloped, natural lands. Urban/developed lands account for 90 percent of the land cover within the City.
- Undeveloped lands are largely designated as open space within the City's existing General Plan. Portions of the City designated as open space encompass the majority of native habitat and remaining biological resources.

- There are five large open space areas consisting of parks, preserve or reserves, although there are some areas of open space intertwined with development that also support native habitat.
- The majority of the City's natural habitat areas are concentrated along major watercourses including Agua Hedionda Creek, La Mirada Creek, and Buena Vista Creek.
- City of Vista overlaps with critical habitat for thread-leaved brodiaea (Brodiaea filifolia), coastal California gnatcatcher (Polioptila californica californica) and southwester willow flycatcher (Empidonax traillii extimus) (USFWS 2022a).
- Of the 22 vegetation communities documented within the City's limits, 16 of them are considered sensitive natural communities.
- There are 13 special-status wildlife species that are known to occur within the City and an additional 11 species with a potential to occur.

5.3.2 Regulatory Setting

Several federal, state, regional, and local regulations have been enacted to regulate activities involving and affecting biological resources, including the protection of sensitive and special-status biological resources. This section describes the regulations applicable to biological resources that may occur within the City of Vista.

Federal

Federal Endangered Species Act

The federal Endangered Species Act (ESA; 16 USC 1531 et seq.) is implemented by the U.S. Fish and Wildlife Service (USFWS) through a program that identifies and provides for protection of various species of fish, wildlife, and plants deemed to be in danger of or threatened with extinction. As part of this regulatory act, ESA provides for designation of critical habitat, defined in ESA Section 3(5)(A) as specific areas within the geographical range occupied by a species where physical or biological features "essential to the conservation of the species" are found and that "may require special management considerations or protection." Critical habitat may also include areas outside the current geographical area occupied by the species that are nonetheless "essential for the conservation of the species." The City of Vista overlaps with critical habitat for thread-leaved brodiaea (*Brodiaea filifolia*), coastal California gnatcatcher (*Polioptila californica californica*) and southwester willow flycatcher (*Empidonax traillii extimus*) (USFWS 2022a).

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) prohibits the take of any migratory bird or any part, nest, or eggs of any such bird. Under the MBTA, "take" is defined as pursuing, hunting, shooting, capturing, collecting, or killing, or attempting to do so (16 USC 703 et seq.). Additionally, Executive Order 13186, Responsibilities of Federal

Agencies to Protect Migratory Birds, requires that any project with federal involvement address impacts of federal actions on migratory birds with the purpose of promoting conservation of migratory bird populations (66 FR 3853–3856). The Executive Order requires federal agencies to work with USFWS to develop a memorandum of understanding. USFWS reviews actions that might affect these species.

Clean Water Act

Pursuant to Section 404 of the Clean Water Act, the U.S. Army Corps of Engineers (USACE) regulates the discharge of dredged and/or fill material into "waters of the United States." The term "wetlands" (a subset of waters of the United States) is defined in Title 33 of the Code of Federal Regulations, Section 328.3(b), as "those areas that are inundated or saturated by surface or ground water 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. Wetlands generally include swamps, marshes, bogs, and similar areas." In the absence of wetlands, the limits of USACE jurisdiction in non-tidal waters, such as intermittent streams, extend to the ordinary high water mark (OHWM), which is defined in Title 33 of the Code of Federal Regulations, Section 328.3(e).

State

California Endangered Species Act

The California Department of Fish and Wildlife (CDFW) administers the California Endangered Species Act (CESA) (California Fish and Game Code (CFGC) Section 2050 et seq.), which prohibits the "take" of plant and animal species designated by the California Fish and Game Commission as endangered or threatened in California. Under CESA Section 86, take is defined as "hunt, pursue, catch, capture, or kill, or "attempt to hunt, pursue, catch, capture, or kill." CESA Section 2053 stipulates that state agencies may not approve projects that will "jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives available consistent with conserving the species or its habitat which would prevent jeopardy."

Sections 3511, 4700, and 5515 of the CFGC designate certain birds, mammals, and fish as "fully protected" species. These species may not be taken or possessed without a permit from the Fish and Game Commission, and such take may only occur pursuant to scientific research or in connection with an authorized Natural Communities Conservation Plan (NCCP). No "incidental take" of fully protected species is allowed.

CESA Sections 2080 through 2085 address the taking of threatened, endangered, or candidate species by stating, "No person shall import into this state, 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 determines to be an endangered species or a threatened species, or attempt any of those acts, except as otherwise provided in this chapter, the Native Plant Protection Act (CFGC Sections 1900–1913), or the California Desert Native Plants Act (Food and Agricultural Code, Section 80001)."

Section 2081(b) and (c) of the CFGC authorize take of endangered, threatened, or candidate species if take is incidental to otherwise lawful activity and if specific criteria are met. In such cases, CDFW issues the applicant an incidental take permit, which functions much like an incidental take statement in the federal context. Sections 2081(b) and (c) also require CDFW to coordinate consultations with USFWS for actions involving federally listed species that are also state-listed species. In certain circumstances, Section 2080.1 of CESA allows CDFW to adopt a federal incidental take statement or a 10(a) permit as its own, based on its findings that the federal permit adequately protects the species and is consistent with state law. CDFW may not issue a Section 2081(b) incidental take permit for take of "fully protected" species. The CFGC lists the fully protected species in Section 3511 (birds), Section 4700 (mammals), Section 5050 (reptiles and amphibians), and Section 5515 (fish).

California Environmental Quality Act

CEQA (California Public Resources Code, Section 21000 et seq.) and the CEQA Guidelines (14 CCR 15000 et seq.) require identification of a project's potentially significant impacts on biological resources and feasible mitigation measures and alternatives that could avoid or reduce significant impacts. CEQA Guidelines Section 15380(b)(1) defines endangered animals or plants as species or subspecies whose "survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors" (14 CCR 15000 et seq.). A rare animal or plant is defined in CEQA Guidelines Section 15380(b)(2) as a species that, although not currently threatened with extinction, exists "in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens; or … [t]he species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered 'threatened' as that term is used in the federal Endangered Species Act." Additionally, an animal or plant may be presumed to be endangered, rare, or threatened if it meets the criteria for listing, as defined further in CEQA Guidelines Section 15380(c). CEQA also requires identification of a project's potentially significant impacts on riparian habitats (such as wetlands, bays, estuaries, and marshes) and other sensitive natural communities, including habitats occupied by endangered, rare, and threatened species.

California Fish and Game Code

Pursuant to Section 1602 of the CFGC, CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake that supports fish or wildlife. A Streambed Alteration Agreement (CFGC Section 1602 et seq.) is required for impacts on jurisdictional resources, including streambeds and associated riparian habitat.

According to Sections 3511 and 4700 of the CFGC, which regulate birds and mammals, a fully protected species may not be taken or possessed. CDFW may not authorize the take of such species except (1) for necessary scientific research, (2) for the protection of livestock, and (3) when the take occurs for fully protected species within an approved NCCP.

The CFGC provides protection for wildlife species. It states that no mammals, birds, reptiles, amphibians, or fish species listed as fully protected can be "taken or possessed at any time." In addition, CDFW affords protection over the destruction of nests or eggs of native bird species (CFGC Section 3503), and it states that no birds in the orders of Falconiformes or Strigiformes (birds of prey) can be taken, possessed, or destroyed (CFGC Section 3503.5). CDFW cannot issue permits or licenses that authorize the take of any fully protected species, except under certain circumstances such as scientific research and live capture and relocation of such species pursuant to a permit for the protection of livestock (CFGC Section 3511). Separate from federal and state designations of species, CDFW designates certain vertebrate species as Species of Special Concern (SSC) based on declining population levels, limited ranges, and/or continuing threats that have made them vulnerable to extinction.

The Native Plant Protection Act of 1977 (CFGC Sections 1900–1913) directed CDFW to carry out the legislature's intent to "preserve, protect and enhance rare and endangered plants in this State." The Native Plant Protection Act gave the California Fish and Game Commission the power to designate native plants as "endangered" or "rare," and to protect endangered and rare plants from take. When CESA was passed in 1984, it expanded on the original Native Plant Protection Act, enhanced legal protection for plants, and created the categories of "threatened" and "endangered" species to parallel ESA. CESA categorized all rare animals as threatened species under CESA, but did not do so for rare plants, which resulted in three listing categories for plants in California: rare, threatened, and endangered. The Native Plant Protection Act remains part of the CFGC, and mitigation measures for impacts on rare plants are specified in a formal agreement between CDFW and project proponents.

Porter–Cologne Water Quality Control Act

The Porter–Cologne Water Quality Control Act (Porter–Cologne Act) protects water quality and the beneficial uses of water. It applies to surface water and

groundwater. Developments with impacts on jurisdictional waters must demonstrate compliance with the goals of the Porter–Cologne Act by developing stormwater pollution prevention plans (SWPPPs), standard urban stormwater mitigation plans, and other measures to obtain a Clean Water Act Section 401 certification.

Regional

Multiple Habitat Conservation Program

The Multiple Habitat Conservation Program Plan (MHCP) is one of several conservation planning efforts in San Diego County. The long-term goal of these planning efforts is to establish a regional reserve system that will protect native habitat lands and their associated biota in conformance with California's Natural Community Conservation Planning Act. The MHCP addresses the needs of multiple plant and animal species in northwestern San Diego County and upon implementation, will contribute to the preserve system already established by the approved Multiple Species Conservation Plan in southwestern San Diego County (SANDAG 2003).

The MHCP encompasses the Cities of Carlsbad, Encinitas, Escondido, Oceanside, San Marcos, Solana Beach, and Vista. Each of these cities have been tasked with implementing the goals and objectives of the MHCP within their boundaries through subarea plans. Through the MHCP, the cities will collectively conserve approximately 19,000 acres of habitat, of which roughly 8,800 acres (46 percent) are already in public ownership. The preservation of habitat will contribute toward the habitat preserve system for the protection of numerous rare, threatened, or endangered species known to occur within the plan area. Even though the MHCP was adopted and certified by the San Diego Association of Governments (SANDAG) Board of Directors in March 2003, implementation of the plan can only occur through approved subarea plans and the associated implementing agreements.

To date, Carlsbad is the only city of those participating in the MHCP that has an approved subarea plan. Draft subarea plans for the cities of Encinitas, Escondido, Oceanside, and San Marcos have been prepared; however, they have not been formally approved and adopted. The City of Vista does not have an approved or draft MHCP Subarea Plan and because the City is largely developed, there is little incentive to develop a subarea plan particularly in light of the fact that the City of Vista's General Plan already includes goals and policies intended to implement the provisions of the MHCP.

The MHCP jurisdictions identified "hardline" and "soft-line" Focused Planning Areas (FPAs) within which some lands will be dedicated for open space and habitat conservation. The hardline areas are those lands which have been identified as essential to the conservation of regionally important biological resources. The soft-line planning areas are those areas within which hardline preserve areas will ultimately be delineated based on further data and planning. The MHCP intended to

delegate the guidelines for soft-line planning areas to be included within each subarea plan.

Local

City of Vista General Plan

The existing Vista General Plan 2030 contains four resource conservation and sustainability goals specific to biological resources and open space. Specific policies have been outlined, that once implemented, will assist the City on achieving the overall goals. The four resource conservation and sustainability goals include:

- RCS Goal 5: Preserve and protect, to the extent practicable, the range of natural biological communities and species native to the City and region; and conserve viable populations of endangered, threatened, and key sensitive species and their habitats.
- RCS Goal 6: Implement the provisions of the regional Multiple Habitat Conservation Plan (MHCP).
- RCS Goal 7: Conserve, enhance, and restore, to the extent practicable, open space areas for the protection of wildlife habitats and plant and animal species.
- RCS Goal 8: Provide and preserve open space areas for the protection of public health and safety.

The goals and policies that relate to biological resources would support both the MHCP and the City of Vista's responsibilities to conserve natural biotic communities and special-status plant and wildlife species pursuant to various state and federal laws and policies.

5.3.3 Existing Conditions

Available relevant literature and data on sensitive habitats and special-status species distribution was reviewed to determine biological resources that are known to occur within the City of Vista and those that have the potential for occurrence.

Land Cover/Habitats

According to recent biological resource mapping updates conducted for the City as part of this General Plan Update, there are a total of 22 vegetation communities or land covers which occur within the City of Vista **(Table 5.6).** Much of the City is comprised of urban and developed areas with pockets of natural vegetation occurring within areas of open space **(see Section 5.4).** Of the 12,021 acres that comprise the City, approximately 10,780 acres (90 percent) is considered urban/developed **(Table 5.6).** Upland and riparian/wetland habitats account for 1,071 acres within the City while 170 acres are designated as agricultural uses and the remaining 27 acres include disturbed habitat. The spatial distribution of these land covers and habitats are depicted on **Figure 5.3.**

Table 5.6: Vegetation Communities and Land Cover Types within the City of Vista

Vegetation Community or Land Cover	Acreage
Developed or Disturbed Habitat	
Urban/Developed	10,753
Disturbed Habitat	27
Developed or Disturbed Habitat Total	**10,780**
Upland	
Southern Mixed Chaparral*	288
Diegan Coastal Sage Scrub*	264
Non-Native Grassland*	138
Eucalyptus Woodland	21
Valley and Foothill Grassland*	18
Coast Live Oak Woodland*	11
Chaparral*	7
Coastal Sage-Chaparral Transition*	6
Upland Total	**753**
Riparian/Wetland	
Southern Riparian Scrub*	126
Southern Sycamore-Alder Riparian Woodland*	97
Southern Coast Live Oak Riparian Forest*	42
Southern Cottonwood-Willow Riparian Forest*	21
Southern Willow Scrub*	12
Southern Riparian Forest*	9
Disturbed Wetland*	5
Coastal and Valley Freshwater Marsh*	3
Freshwater*	2
Riparian/Wetland Total	**318**
Agricultural	
Extensive Agriculture - Field/Pasture, Row Crops	109
Orchards and Vineyards	34
Intensive Agriculture - Dairies, Nurseries, Chicken Ranches	27

Table 5.6: Vegetation Communities and Land Cover Types within the City of Vista

Vegetation Community or Land Cover	Acreage
Agricultural Total	**170**
Grand Total	**12,021**

Source: Biological resource mapping updates, City of Vista General Plan

**Denotes sensitive vegetation communities*

Developed or Disturbed Habitat

Urban/Developed

Urban/developed land refers to areas that have been built upon or disturbed so severely that native vegetation is no longer supported. Developed land includes areas with permanent or semi-permanent structures, pavement or hardscape, landscaped areas, and areas with a large amount of debris or other materials (Oberbauer et al. 2008). Within the City of Vista, urban/developed lands account for 90 percent of the land cover within the City.

Disturbed Habitat

Disturbed habitat is characterized by predominantly non-native species introduced and established through human action (Oberbauer et al. 2008). Oberbauer further describes disturbed habitat as "areas that have been physically disturbed (by previous legal human activity) and are no longer recognizable as a native or naturalized vegetation association but continues to retain a soil substrate. Typically, vegetation, if present, is nearly exclusively composed of non-native plant species such as ornamentals or ruderal exotic species that take advantage of disturbance or shows signs of past or present animal usage that removes any capability of providing viable natural habitat for uses other than dispersal." Ares of disturbed habitat are associated with trails in designed open space or areas in the City that are devoid of vegetation but have not yet been developed.

Upland

Non-native Grassland

Non-native grassland consists of dense to sparse cover of annual grasses with flowering culms between 0.5 to 3 feet in height (Oberbauer et al. 2008). In San Diego County, the presence of wild oat, bromes, stork's bill, and mustard are common indicators. In some areas, depending on past disturbance and annual rainfall, annual forbs may be the dominant species; however, it is presumed that grasses will dominate.

Within the City of Vista, areas of "non-native grassland" are associated with empty lots or transitional areas between development. One larger polygon is associated with the Dawson Los Monos Canyon Reserve.

Southern Mixed Chaparral and Chaparral

Southern mixed chaparral is a drought- and fire-adapted community of woody shrubs that is 1.5 to 3 meters (5 to 10 feet) tall, frequently forming dense, impenetrable stands. It develops primarily on mesic, north-facing slopes and in canyons and is characterized by crown- or stump-sprouting species that regenerate following burns or other ecological catastrophes. This vegetation community is typically a mixture of chamise (*Adenostoma fasciculatum*), mission manzanita (*Xylococcus bicolor*), ceanothus (*Ceanothus* spp.), interior scrub oak (*Quercus berberidifolia*), laurel sumac, and black sage (Oberbauer et al. 2008).

Southern mixed chaparral is primarily mapped within the Dawson Los Monos Canyon Reserve and La Mirada Canyon. This vegetation community is dominant on the San Marcos Mountains located northeast of the City of Vista; and therefore, this vegetation community extends into the City. There is a small area of chaparral mapped within the Hacienda Biological Preserve.

Diegan Coastal Sage Scrub

Diegan coastal sage scrub is a native vegetation community. According to Oberbauer et al. (2008), coastal sage scrub is composed of a variety of soft, low, aromatic shrubs, characteristically dominated by drought-deciduous species such as California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), and sages (*Salvia* spp.)—with scattered evergreen shrubs, including lemonadeberry (*Rhus integrifolia*) and laurel sumac (*Malosma laurina*).

Coastal sage scrub within the City is largely associated with areas of open space. The largest patches of coastal sage scrub occur within La Mirada Canyon, at the base of the San Marcos Mountains, and on canyon slopes alongside Aqua Hedionda Creek.

Valley and Foothill Grassland

The vegetation classification “valley and foothill grassland” encompasses native grasslands, non-native grasslands, wildflower field and perennial grasslands (Oberbauer et al. 2008). Based on review of recent aerials, the majority of this vegetation community has been developed. Pockets of valley and foothill grassland can be found throughout areas of open space within the City.

Eucalyptus Woodland

This “naturalized” vegetation community is fairly widespread in Southern California and is considered a woodland habitat. It typically consists of monotypic stands of introduced Australian eucalyptus trees such as blue gum (*E. globulus*) and red gum (*E. camaldulensis*) species. The understory is either depauperate (i.e., lacking species variety) or absent, owing to high leaf litter. Although eucalyptus woodlands are of limited value to most native plants and animals, they frequently provide nesting and perching sites for several raptor species.

Eucalyptus trees can be found throughout the City and commonly occur adjacent to development and parks.

Coast Live Oak Woodland

Coast live oak woodland is dominated by a single evergreen species: coast live oak (*Quercus agrifolia* var. *oxyadenia*), with a canopy height reaching 32.8 to 82.0 feet (10 to 25 meters). The shrub layer is poorly developed, but may include toyon (*Heteromeles arbutifolia*), gooseberry (*Ribes* spp.), or laurel sumac (*Malosma laurina*). The herb component is continuous, dominated by a variety of introduced species (Oberbauer et al. 2008). Areas mapped as coast live oak woodland occur along drainages located in the northeast portion of the City.

Coastal Sage-Chaparral Transition

Areas of transition between coastal sage scrub and chaparral are often times the result of post-fire succession. This vegetation community is classified as such when there is an equal dominance of coastal sage scrub and chaparral plant species. One area of coastal sage-chaparral transition is mapped within the Dawson Los Monos Canyon Reserve.

Riparian/Wetland

Southern Riparian Scrub

Southern riparian scrub typically occurs along major river systems and is characterized by riparian vegetation consisting of smaller trees or shrubs, without or with few tall trees (Oberbauer et al. 2008). Species usually associated with this vegetation community include broom baccharis, arroyo willow, and other willow trees (Oberbauer et al. 2008). Areas of riparian scrub are located along creeks throughout the City.

Southern Sycamore-Alder Riparian Forest

Southern sycamore–alder riparian woodland is characterized by tall, open, broad-leafed woodland dominated by California sycamore and white alder (*Alnus Rhombifolia*) (Oberbauer et al. 2008). The woodland includes scattered trees in shrubby thickets of sclerophyllous and deciduous species. Characteristic species include coast live oak (*Quercus agrifolia*), blue elderberry (*Sambucus nigra*), and poison oak (*Toxicodendron diversilobum*). Areas of riparian forest are located along creeks throughout the City.

Southern Coast Live Oak Riparian Forest

Southern coast live oak riparian forest is a dense riparian forest dominated by coast live oak (*Quercus agrifolia*), often with an herbaceous understory. This community occurs along the bottom or outer slopes of larger streams (Oberbauer et al. 2008). Areas of riparian forest are located along creeks throughout the City.

Southern Cottonwood-Willow Riparian Forest

Southern cottonwood-willow riparian forest is dominated by deciduous trees species: Fremont cottonwood (*Populus fremontii*) or balsam poplar (*Populus trichocarpa*), and various willow trees (*Salix ssp.*) (Oberbauer et al. 2008). The shrub

layer typically includes various willow species (Oberbauer et al. 2008). Areas of riparian forest are located along creeks throughout the City.

Southern Willow Scrub

Southern willow scrub is a dense, broad-leafed, winter-deciduous riparian thicket dominated by several willow species, with scattered emergent Fremont cottonwood and California sycamore. This community was formerly extensive along the major rivers of coastal Southern California but is now much reduced (Oberbauer et al. 2008). Areas of riparian scrub are located along creeks throughout the City.

Disturbed Wetland

Disturbed wetland refers to areas that are permanently or periodically inundated by water that have been significantly modified by human activity. Disturbed wetland include concrete-lined channels, Arizona crossings, detention basins, culverts, and ditches. Disturbed wetlands are often unvegetated, but can contain scattered native or non-native vegetation, such as giant reed (*Arundo donax*), tamarisk (*Tamarix* spp.), eucalyptus (*Eucalyptus* spp.), palms (*Phoenix* spp.; *Washingtonia* spp.), Bermuda grass (*Cynodon dactylon*), willows, and cattails (*Typha* spp.) (Oberbauer et al. 2008). Areas of disturbed wetland occur along Buena Vista Creek.

Coastal and Valley Freshwater Marsh

According to Oberbauer et al. (2008), coastal and valley freshwater marsh is a wetland habitat type that develops where the water table is at or just above the ground surface, such as around the margins of lakes, ponds, slow-moving streams, ditches, and seepages. Because it is permanently flooded by fresh water, there is an accumulation of deep, peaty soils. It typically is dominated by species such as cattail, sedge (*Carex* spp.), yellow nutsedge (*Cyperus esculentus*), and bulrushes (*Scirpus* spp.).

Two locations of this vegetation community are mapped within the City boundaries: one associated with Rancho Guajome Adobe and the other in La Mirada Canyon.

Southern Riparian Forest

The southern riparian forest category is utilized for areas of dense riparian forests where the dominate plant (oaks, willows, or cottonwoods) cannot be differentiated enough to fit within the more defined riparian forest categories. Areas of riparian forest are located along creeks throughout the City.

Fresh Water

The fresh water land cover refers to freshwater lakes, streams, ponds, or rivers that are not ephemeral and have very low salinity. This is used to describe areas with less than 10 percent vegetative cover and describes areas of water that are usually inundated (Oberbauer et al. 2008). Three areas of freshwater are mapped within the City, one is the duck pond associated with Buena Vista Park, one appears to be a retention basin and the other location is along Agua Hedionda Creek.

Agricultural

Extensive Agriculture - Field/Pasture, Row Crops

Row crops is a subcategory of extensive agriculture, referring to frequently maintained and artificially irrigated areas where perennial or annual crop species are grown in equally spaced rows, typically in high quality soil (Oberbauer et al. 2008). Areas classified as field/pasture consist of 100 percent cover of a monoculture crop.

Intensive Agriculture - Dairies, Nurseries, Chicken Ranches

Intensive agriculture Includes dairies, nurseries, and chicken ranches. In addition, this land cover is used to designate open spaces used for livestock. There is usually no vegetation present except between animal holding areas.

Orchards/Vineyards

According to Oberbauer et al. (2008), the orchards/vineyards land cover refers to areas where trees, shrubs, or crop plants such as grapevines have been intentionally planted (i.e., to produce food or for other commercial purposes). Orchards and vineyards are typically artificially irrigated, and plants may be supported with structures such as trellises. Orchards and vineyards typically support a limited understory of grasses or herbs (Oberbauer et al. 2008).

Sensitive Natural Communities

Of the 22 vegetation communities documented within the City's limits, 16 of them are considered sensitive natural communities. While not a natural community, disturbed wetland is also considered a sensitive vegetation community since it is comprised of wetland vegetation. Non-native grassland is also considered a sensitive vegetation community due to its importance for wildlife foraging.

Special-Status Plant Species

Endangered, rare, or threatened plant species, as defined in CEQA Guidelines Section 15380(b) (14 CCR 15000 et seq.), are referred to as "special-status plant species" in this report and include (1) endangered or threatened plant species recognized in the context of CESA and ESA (CDFW 2022b) and (2) plant species with a CRPR of 1 through 4 (CNPS 2022). Based on a review of CNPS and California Natural Diversity Database (CNDDB) occurrence data there are 12 special-status plant species known to occur within the City of Vista or immediate vicinity and, based on elevation, habitat, and soils present within the City limits, an additional 40 species with potential to occur **(Table 5.7).**

Table 5.7: Special-Status Plant Species Known To Occur Or With A Potential To Occur In The City Of Vista

Scientific Name **Common Name**	**Status (Federal/State/ CRPR)**	**Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)**
Acanthomintha ilicifolia **San Diego thorn-mint**	**FT/SE/1B.1**	**Chaparral, Coastal scrub, Valley and foothill grassland, Vernal pools; Clay, Openings/annual herb/Apr–June/35–3,145**
Adolphia californica **California adolphia**	**None/None/2B.1**	**Chaparral, Coastal scrub, Valley and foothill grassland; Clay/perennial deciduous shrub/Dec–May/35–2,425**
Ambrosia pumila San Diego ambrosia	FE/None/1B.1	Chaparral, Coastal scrub, Valley and foothill grassland, Vernal pools; Alkaline (sometimes), Clay (sometimes), Disturbed areas (often), Loam (sometimes), Sandy (sometimes)/perennial rhizomatous herb/Apr–Oct/65–1,360
Aphanisma blitoides aphanisma	None/None/1B.2	Coastal bluff scrub, Coastal dunes, Coastal scrub; Gravelly (sometimes), Sandy (sometimes)/annual herb/Feb–June/5–1,000
Arctostaphylos glandules ssp. crassifolia Del Mar manzanita	FE/None/1B.1	Chaparral/perennial evergreen shrub/June–Apr/0–1,195
Artemisia palmeri San Diego sagewort	None/None/4.2	Chaparral, Coastal scrub, Riparian forest, Riparian scrub, Riparian woodland; Mesic, Sandy/perennial deciduous shrub/(Feb)May–Sep/50–3,000
Asplenium vespertinum Western spleenwort	None/None/4.2	Chaparral, Cismontane woodland, Coastal scrub; Rocky/perennial rhizomatous herb/Feb–June/590–3,280
Atriplex coulteri Coulter's saltbush	None/None/1B.2	Coastal bluff scrub, Coastal dunes, Coastal scrub, Valley and foothill grassland; Alkaline (sometimes), Clay (sometimes)/perennial herb/Mar–Oct/10–1,505
Atriplex pacifica south coast saltscale	None/None/1B.2	Coastal bluff scrub, Coastal dunes, Coastal scrub, Playas/annual herb/Mar–Oct/0–460
Baccharis vanessae Encinitas baccharis	FT/SE/1B.1	Chaparral, Cismontane woodland; Sandstone/perennial deciduous shrub/Aug–Nov/195–2,360
Bloomeria clevelandii San Diego goldenstar	None/None/1B.1	Chaparral, Coastal scrub, Valley and foothill grassland, Vernal pools; Clay/perennial bulbiferous herb/Apr–May/165–1,525
Brodiaea filifolia **thread-leaved brodiaea**	**FT/SE/1B.1**	**Chaparral, Cismontane woodland, Coastal scrub, Playas, Valley and foothill grassland, Vernal pools; Clay (often)/perennial bulbiferous herb/Mar–June/80–3,670**
Brodiaea orcuttii Orcutt's brodiaea	None/None/1B.1	Chaparral, Cismontane woodland, Closed-cone coniferous forest, Meadows and seeps, Valley and foothill grassland, Vernal pools; Clay, Mesic/perennial bulbiferous herb/May–July/100–5,550
Camissoniopsis lewisii Lewis' evening-primrose	None/None/3	Cismontane woodland, Coastal bluff scrub, Coastal dunes, Coastal scrub, Valley and foothill grassland; Clay (sometimes), Sandy (sometimes)/annual herb/Mar–May(June)/0–985
Ceanothus verrucosus **wart-stemmed ceanothus**	**None/None/2B.2**	**Chaparral/perennial evergreen shrub/Dec–May/5–1,245**

Table 5.7: Special-Status Plant Species Known To Occur Or With A Potential To Occur In The City Of Vista

Scientific Name **Common Name**	**Status (Federal/State/ CRPR)**	**Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)**
Centromadia parryi ssp. australis southern tarplant	None/None/1B.1	Marshes and swamps, Valley and foothill grassland, Vernal pools/annual herb/May–Nov/0–1,570
Centromadia pungens ssp. laevis smooth tarplant	None/None/1B.1	Chenopod scrub, Meadows and seeps, Playas, Riparian woodland, Valley and foothill grassland; Alkaline/annual herb/Apr–Sep/0–2,095
Comarostaphylis diversifolia ssp. diversifolia **summer holly**	**None/None/1B.2**	**Chaparral, Cismontane woodland/perennial evergreen shrub/Apr–June/100–2,590**
Convolvulus simulans small-flowered morning-glory	None/None/4.2	Chaparral, Coastal scrub, Valley and foothill grassland; Clay, Seeps, Serpentinite/annual herb/Mar–July/100–2,425
Corethrogyne filaginifolia var. linifolia Del Mar Mesa sand aster	None/None/1B.1	Chaparral, Coastal bluff scrub, Coastal scrub; Sandy/perennial herb/May–Sep/15–490
Cryptantha wigginsii Wiggins' cryptantha	None/None/1B.2	Coastal scrub; Clay (often)/annual herb/Feb–June/65–900
Deinandra paniculata paniculate tarplant	None/None/4.2	Coastal scrub, Valley and foothill grassland, Vernal pools; Sandy (sometimes), Vernally Mesic (usually)/annual herb/(Mar)Apr–Nov/80–3,080
Dichondra occidentalis western dichondra	None/None/4.2	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland/perennial rhizomatous herb/(Jan)Mar–July/165–1,640
Dudleya blochmaniae ssp. blochmaniae Blochman's dudleya	None/None/1B.1	Chaparral, Coastal bluff scrub, Coastal scrub, Valley and foothill grassland; Clay (often), Rocky, Serpentinite/perennial herb/Apr–June/15–1,475
Dudleya viscida **sticky dudleya**	**None/None/1B.2**	**Chaparral, Cismontane woodland, Coastal bluff scrub, Coastal scrub; Rocky/perennial herb/May–June/35–1,800**
Eryngium aristulatum var. parishii San Diego button-celery	FE/SE/1B.1	Coastal scrub, Valley and foothill grassland, Vernal pools; Mesic/annual/perennial herb/Apr–June/65–2,030
Erysimum ammophilum San-loving wallflower	None/None/1B.2	Chaparral, Coastal dunes, Coastal scrub; Openings, Sandy/perennial herb/Feb–June(July–Aug)/0–195
Euphorbia misera **cliff spurge**	**None/None/2B.2**	**Coastal bluff scrub, Coastal scrub, Mojavean desert scrub; Rocky/perennial shrub/(Oct)Dec–Aug/35–1,640**
Ferocactus viridescens San Diego barrel cactus	None/None/2B.1	Chaparral, Coastal scrub, Valley and foothill grassland, Vernal pools/perennial stem/May–June/10–1,475
Harpagonella palmeri **Palmer's grapplinghook**	**None/None/4.2**	**Chaparral, Coastal scrub, Valley and foothill grassland; Clay, Openings/annual herb/Mar–May/65–3,130**
Hazardia orcuttii **Orcutt's hazardia**	**None/ST/1B.1**	**Chaparral, Coastal scrub; Clay (often)/perennial evergreen shrub/Aug–Oct/260–280**
Holocarpha virgata ssp. elongata graceful tarplant	None/None/4.2	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland/annual herb/May–Nov/195–3,605
Hordeum intercedens vernal barley	None/None/3.2	Coastal dunes, Coastal scrub, Valley and foothill grassland, Vernal pools/annual herb/Mar–June/15–3,280

Table 5.7: Special-Status Plant Species Known To Occur Or With A Potential To Occur In The City Of Vista

Scientific Name **Common Name**	**Status (Federal/State/ CRPR)**	**Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)**
Isocoma menziesii var. decumbens **decumbent goldenbush**	**None/None/1B.2**	**Chaparral, Coastal scrub/perennial shrub/Apr–Nov/35–445**
Iva hayesiana San Diego marsh-elder	None/None/2B.2	Marshes and swamps, Playas/perennial herb/Apr–Oct/35–1,640
Juncus acutus ssp. leopoldii southwestern spiny rush	None/None/4.2	Coastal dunes, Marshes and swamps, Meadows and seeps/perennial rhizomatous herb/(Mar)May–June/10–2,950
Lepidium virginicum var. robinsonii Robinson's pepper-grass	None/None/4.3	Chaparral, Coastal scrub/annual herb/Jan–July/5–2,900
Leptosyne maritima sea dahlia	None/None/2B.2	Coastal bluff scrub, Coastal scrub/perennial herb/Mar–May/15–490
Lycium californicum California box-thorn	None/None/4.2	Coastal bluff scrub, Coastal scrub/perennial shrub/Mar–Aug(Dec)/15–490
Microseris douglasii ssp. platycarpha small-flowered microseris	None/None/4.2	Cismontane woodland, Coastal scrub, Valley and foothill grassland, Vernal pools; Clay/annual herb/Mar–May/50–3,510
Myosurus minimus ssp. apus little mousetail	None/None/3.1	Valley and foothill grassland, Vernal pools/annual herb/Mar–June/65–2,095
Nama stenocarpa mud nama	None/None/2B.2	Marshes and swamps/annual/perennial herb/Jan–July/15–1,640
Navarretia fossalis spreading navarretia	FT/None/1B.1	Chenopod scrub, Marshes and swamps, Playas, Vernal pools/annual herb/Apr–June/100–2,145
Ophioglossum californicum California adder's-tongue	None/None/4.2	Chaparral, Valley and foothill grassland, Vernal pools; Mesic/perennial rhizomatous herb/Jan–June(Dec)/195–1,720
Pentachaeta aurea ssp. aurea golden-rayed pentachaeta	None/None/4.2	Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Riparian woodland, Valley and foothill grassland/annual herb/Mar–July/260–6,065
Quercus dumosa **Nuttall's scrub oak**	**None/None/1B.1**	**Chaparral, Closed-cone coniferous forest, Coastal scrub; Clay, Loam, Sandy/perennial evergreen shrub/Feb–Apr(May–Aug)/50–1,310**
Quercus engelmannii Engelmann oak	None/None/4.2	Chaparral, Cismontane woodland, Riparian woodland, Valley and foothill grassland/perennial deciduous tree/Mar–June/165–4,265
Selaginella cinerascens ashy spike-moss	None/None/4.1	Chaparral, Coastal scrub/perennial rhizomatous herb//65–2,095
Sidalcea neomexicana salt spring checkerbloom	None/None/2B.2	Chaparral, Coastal scrub, Lower montane coniferous forest, Mojavean desert scrub, Playas; Alkaline, Mesic/perennial herb/Mar–June/50–5,015
Sphaerocarpos drewiae bottle liverwort	None/None/1B.1	Chaparral, Coastal scrub; Openings/ephemeral liverwort//295–1,965
Tetracoccus dioicus **Parry's tetracoccus**	**None/None/1B.2**	**Chaparral, Coastal scrub/perennial deciduous shrub/Apr–May/540–3,280**

Table 5.7: Special-Status Plant Species Known To Occur Or With A Potential To Occur In The City Of Vista

Scientific Name **Common Name**	**Status (Federal/State/ CRPR)**	**Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)**
Viguiera laciniata San Diego County viguiera	None/None/4.3	Chaparral, Coastal scrub/perennial shrub/Feb–June(Aug)/195–2,460

Notes: Bolded species are known to occur in the City of Vista or immediate area based on CNDDB and CNPS recorded locations for the San Luis Ray and San Marcos quadrangles.

Status Legend:

FE: Federally listed as endangered
FT: Federally listed as threatened
SE: State listed as endangered
ST: State listed as threatened
CRPR 1A: Plants presumed extirpated in California and either rare or extinct elsewhere
CRPR 1B: Plants rare, threatened, or endangered in California and elsewhere
CRPR 2A: Plants presumed extirpated in California but common elsewhere
CRPR 2B: Plants rare, threatened, or endangered in California but more common elsewhere
CRPR 3: Review List: Plants about which more information is needed
CRPR 4: Watch List: Plants of limited distribution
.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)
.3 Not very threatened in California (<20 percent of occurrences threatened / low degree and immediacy of threat or no current threats known)

Special-Status Wildlife Species

Endangered, rare, or threatened wildlife species, as defined in CEQA Guidelines Section 15380(b) (14 CCR 15000 et seq.), are referred to as "special-status wildlife species" in this report and include (1) endangered or threatened plant species recognized in the context of CESA and ESA (CDFW 2022b) (2) CDFW designated Species of Special Concern (SSC) whose population levels are declining, have limited ranges, and/or are vulnerable to extinction due to continuing threats (CDFW 2022c), (3) CDFW Fully Protected (FP) and Watch List (WL) species and (4) USFWS Birds of Conservation Concern (BCC) which are migratory and non-migratory bird species that meet the requirements of the 1988 amendment to the Fish and Wildlife Conservation Act that mandates USFWS to "identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under the Endangered Species Act (ESA) of 1973" (16 USC 1531-1544). Based on a review of the CNDDB occurrence data and habitat present within the City limits, there are 13 special-status wildlife species that are known to occur within the City and an additional 11 species with a potential to occur **(Table 5.8).**

Table 5.8: Special-Status Wildlife Species Known to Occur or With a Potential to Occur in the City Of Vista

Scientific Name *Common Name*	Status (Federal/ State)	Habitat
Amphibians		
Anaxyrus californicus arroyo toad	FE/SSC	Semi-arid areas near washes, sandy riverbanks, riparian areas, palm oasis, Joshua tree, mixed chaparral and sagebrush; stream channels for breeding (typically third order); adjacent stream terraces and uplands for foraging and wintering
Spea hammondii western spadefoot	None/SSC	Primarily grassland and vernal pools, but also in ephemeral wetlands that persist at least 3 weeks in chaparral, coastal scrub, valley–foothill woodlands, pastures, and other agriculture
Birds		
***Accipiter cooperii* (nesting) Cooper's hawk**	**None/WL**	**Nests and forages in dense stands of live oak, riparian woodlands, or other woodland habitats often near water**
***Aimophila ruficeps canescens* Southern California rufous-crowned sparrow**	**None/WL**	**Nests and forages in open coastal scrub and chaparral with low cover of scattered scrub interspersed with rocky and grassy patches**
Ammodramus savannarum (nesting) grasshopper sparrow	None/SSC	Nests and forages in moderately open grassland with tall forbs or scattered shrubs used for perches
Aquila chrysaetos (nesting & wintering) golden eagle	None/FP, WL	Nests and winters in hilly, open/semi-open areas, including shrublands, grasslands, pastures, riparian areas, mountainous canyon land, open desert rimrock terrain; nests in large trees and on cliffs in open areas and forages in open habitats

Table 5.8: Special-Status Wildlife Species Known to Occur or With a Potential to Occur in the City Of Vista

Scientific Name *Common Name*	Status (Federal/ State)	Habitat
Artemisiospiza belli Bell's sage sparrow	None/WL	Nests and forages in coastal scrub and dry chaparral; typically in large, unfragmented patches dominated by chamise; nests in more dense patches but uses more open habitat in winter
Campylorhynchus brunneicapillus sandiegensis (San Diego & Orange Counties only) coastal cactus wren	None/SSC	Southern cactus scrub patches
Circus hudsonius (nesting) northern harrier	BCC/SSC	Nests in open wetlands (marshy meadows, wet lightly-grazed pastures, old fields, freshwater and brackish marshes); also in drier habitats (grassland and grain fields); forages in grassland, scrubs, rangelands, emergent wetlands, and other open habitats
Elanus leucurus **white-tailed kite**	**None/FP**	**Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland.**
Empidonax traillii extimus (nesting) southwestern willow flycatcher	FE/SE	Nests in dense riparian habitats along streams, reservoirs, or wetlands; uses variety of riparian and shrubland habitats during migration
***Icteria virens* (nesting)** **yellow-breasted chat**	**None/SSC**	**Nests and forages in dense, relatively wide riparian woodlands and thickets of willows, vine tangles, and dense brush**
Pandion haliaetus (nesting) **osprey**	**None/WL**	**Large waters (lakes, reservoirs, rivers) supporting fish; usually near forest habitats, but widely observed along the coast**
Polioptila californica **coastal California gnatcatcher**	**FT/SSC**	**Nests and forages in various sage scrub communities, often dominated by California sagebrush and buckwheat; generally avoids nesting in areas with a slope of greater than 40 percent; majority of nesting at less than 1,000 feet above mean sea level**
Sialia Mexicana **western bluebird**	**None/None**	**Nests in old-growth red fir, mixed-conifer, and lodegpole pine habitats near wet meadows used for foraging**
Vireo bellii pusillus (nesting) **least Bell's vireo**	**FE/SE**	**Nests and forages in low, dense riparian thickets along water or along dry parts of intermittent streams; forages in riparian and adjacent shrubland late in nesting season**
Invertebrates		
Branchinecta sandiegonensis San Diego fairy shrimp	FE/None	Vernal pools, non-vegetated ephemeral pools

Table 5.8: Special-Status Wildlife Species Known to Occur or With a Potential to Occur in the City Of Vista

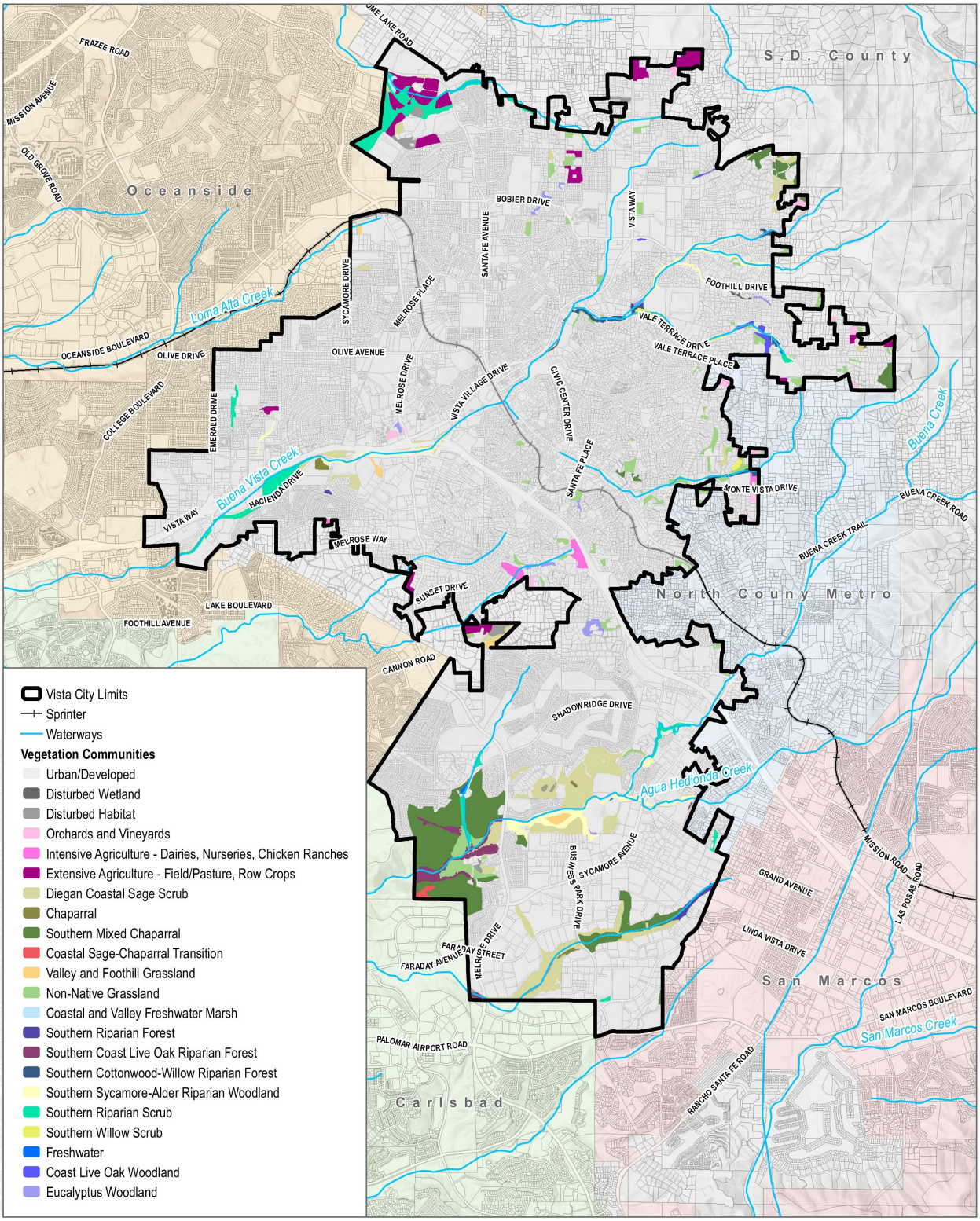
Scientific Name *Common Name*	Status (Federal/ State)	Habitat
Streptocephalus woottoni Riverside fairy shrimp	FE/None	Vernal pools, non-vegetated ephemeral pools
Mammals		
Chaetodipus fallax northwestern San Diego pocket mouse	None/SSC	Coastal scrub, mixed chaparral, sagebrush, desert wash, desert scrub, desert succulent shrub, pinyon–juniper, and annual grassland
Dipodomys stephensi Stephens' kangaroo rat	FE/ST	Annual and perennial grassland habitats, coastal scrub or sagebrush with sparse canopy cover, or in disturbed areas
Dasypterus xanthinus **western yellow bat**	**None/SSC**	**Valley–foothill riparian, desert riparian, desert wash, and palm oasis habitats; below 2,000 feet above mean sea level; roosts in riparian and palms**
Perognathus longimembris internationalis Jacumba pocket mouse	None/SSC	Desert scrub and sparse sage scrub in areas with fine sandy soils
Reptiles		
Arizona elegans occidentalis **California glossy snake**	**None/SSC**	**Arid scrub, rocky washes, grasslands, chaparral, open areas with loose soil**
Aspidoscelis hyperythra **orange-throated whiptail**	**None/WL**	**Low-elevation coastal scrub, chaparral, and valley–foothill hardwood**
Phrynosoma blainvillii **Blainville's horned lizard**	**None/SSC**	**Open areas of sandy soil in valleys, foothills, and semi-arid mountains including coastal scrub, chaparral, valley–foothill hardwood, conifer, riparian, pine–cypress, juniper, and annual grassland habitats**
Plestiodon skiltonianus interparietalis **Coronado skink**	**None/WL**	**Woodlands, grasslands, pine forests, and chaparral; rocky areas near water**

Notes: Bolded species are known to occur in the City of Vista based on CNDDB and San Diego County Bird Atlas recorded locations.

Status Abbreviations

FE: Federally listed as endangered
FT: Federally listed as threatened
BCC: U.S. Fish and Wildlife Service Bird of Conservation Concern
SSC: California Species of Special Concern
FP: California Fully Protected Species
WL: California Watch List Species
SE: State listed as endangered
ST: State listed as threatened
SCD: State candidate for delisting

Figure 5.3: Biological Resources Location Map



5.4 Open Space

This section describes the areas of open space within the City of Vista that have been dedicated for preservation of sensitive biological resources or recreational purposes. This section does not provide a discussion of urban parks throughout the City but does include a discussion of trails.

5.4.1 Findings

The City of Vista includes various forms of designated open space which are managed by the City or other entities. The majority of the City's open space is located in the southern portion of the City limits and includes Dawson Los Monos Canyon Reserve and the adjacent Buena Vista Park, and La Mirada Canyon. The City also contains a portion of the larger Guajome Regional Park (Rancho Guajome Adobe) which is managed by the County of San Diego. Two additional conserved open space areas are situated along Buena Vista Creek. The City also contains deed-restricted open spaces that have been set aside as part of a development proposal as mitigation for impacts to special-status biological resources, to provide buffers for adjacent resources, or open space for health and safety purposes. These areas are situated between urban development. Within the City of Vista, 704 acres are designated as open space park or preserve.

5.4.2 Regulatory Setting

Local

City of Vista General Plan

The existing General Plan has a number of policies related to open space. RCS Goal 7, 8, 9, and 10 identify goals of conserve, enhancing and resorting open space to protect habitats, species as well as providing space for public recreation opportunities, including maintaining facilities and programs for the enjoyment of residents.

5.4.3 Existing Conditions

The City of Vista includes larger areas of open space along with various other areas of open space intermingled throughout the City's urban development. Of note are the following parks, preserve, or reserves which comprise nearly all of open space and natural land cover within the City: Rancho Guajome Adobe; Hacienda Biological Preserve; Dawson Los Monos Canyon Reserve; Buena Vista Park; La Mirada Canyon; and Buena Vista Creek Ecological Reserve as shown in **Figure 5.4** below. There are numerous trails throughout the City which connect areas of open space and the surrounding community.

Natural Land Cover

Within City limits, 704 acres are designated as open space park or preserve. Natural land covers comprise the majority (577 acres) of the City's open space as shown in **Table 5.9** below.

Table 5.9: Vegetation Communities and Land Cover Types Within City of Vista Designed Open Space

Vegetation Community or Land Cover	Acreage
Upland	
Southern Mixed Chaparral*	239
Diegan Coastal Sage Scrub*	112
Non-Native Grassland*	23
Coastal Sage-Chaparral Transition*	6
Valley and Foothill Grassland*	4
Chaparral*	2
Coast Live Oak Woodland*	1
Eucalyptus Woodland	1
Upland Total	**388**
Riparian/Wetland	
Southern Riparian Scrub*	90
Southern Sycamore-Alder Riparian Woodland*	40
Southern Coast Live Oak Riparian Forest*	34
Southern Cottonwood-Willow Riparian Forest*	10
Southern Riparian Forest*	6
Southern Willow Scrub*	5
Coastal and Valley Freshwater Marsh*	3
Disturbed Wetland*	1
Riparian/Wetland Total	**189**
Developed or Disturbed Habitat	
Urban/Developed	66
Disturbed Habitat	11
Developed or Disturbed Habitat Total	**78**
Agricultural	
Extensive Agriculture - Field/Pasture, Row Crops	50
Agricultural Total	**50**
Grand Total	**704**

*Denotes sensitive vegetation communities

Open Space

The City of Vista includes larger areas of open space along with various other areas of open space intermingled throughout the City's urban development. Of note are the larger open spaces and designed preserve/reserves: Rancho Guajome Adobe; Hacienda Biological Preserve; Dawson Los Monos Canyon Reserve; Buena Vista Park; La Mirada Canyon; and Buena Vista Creek Ecological Reserve. Each open space is described below.

Rancho Guajome Adobe

A portion of the Guajome Regional Park occur within the City boundary while the remaining acreage occurs within the City of Oceanside and unincorporated County of San Diego lands. The park is managed by the County of San Diego. The approximately 140-acre portion within the City limits includes a 25-acre spring-fed lake, natural vegetation and habitat, and hiking trails.

Hacienda Biological Preserve

The Hacienda Biological Preserve is owned and managed by the City. The 31-acre preserve is located along Hacienda Drive, south of SR-78, in vicinity of Providence Drive. The preserve includes a hiking trail and native vegetation and encompasses a portion of Buena Vista Creek.

Dawson Los Monos Canyon Reserve

The Dawson Los Monos Canyon Reserve occupies 235 acres and includes a portion of the Agua Hedionda Creek as it flows through the canyon. The reserve is managed by UC San Diego and overlaps with both the cities of Vista and Carlsbad. Buena Vista Park is located immediately adjacent to the reserve. The reserve does not contain publicly available trails or access.

Buena Vista Park

Buena Vista Park is located immediately adjacent to the
Dawson Los Monos Canyon Reserve and includes approximately 115 acres of largely native upland habitat. The park also covers a portion of Agua Hediona Creek and a tributary to the creek.

La Mirada Canyon

The La Mirada Canyon preserve encompasses approximately 88 acres along a tributary to Agua Hedionda Creek. The preserve is situated along a canyon between business parks. La Mirada Canyon connects to the Carlsbad Oaks Preserve to the west and to the City of San Marcos to the east.

Buena Vista Creek Ecological Reserve

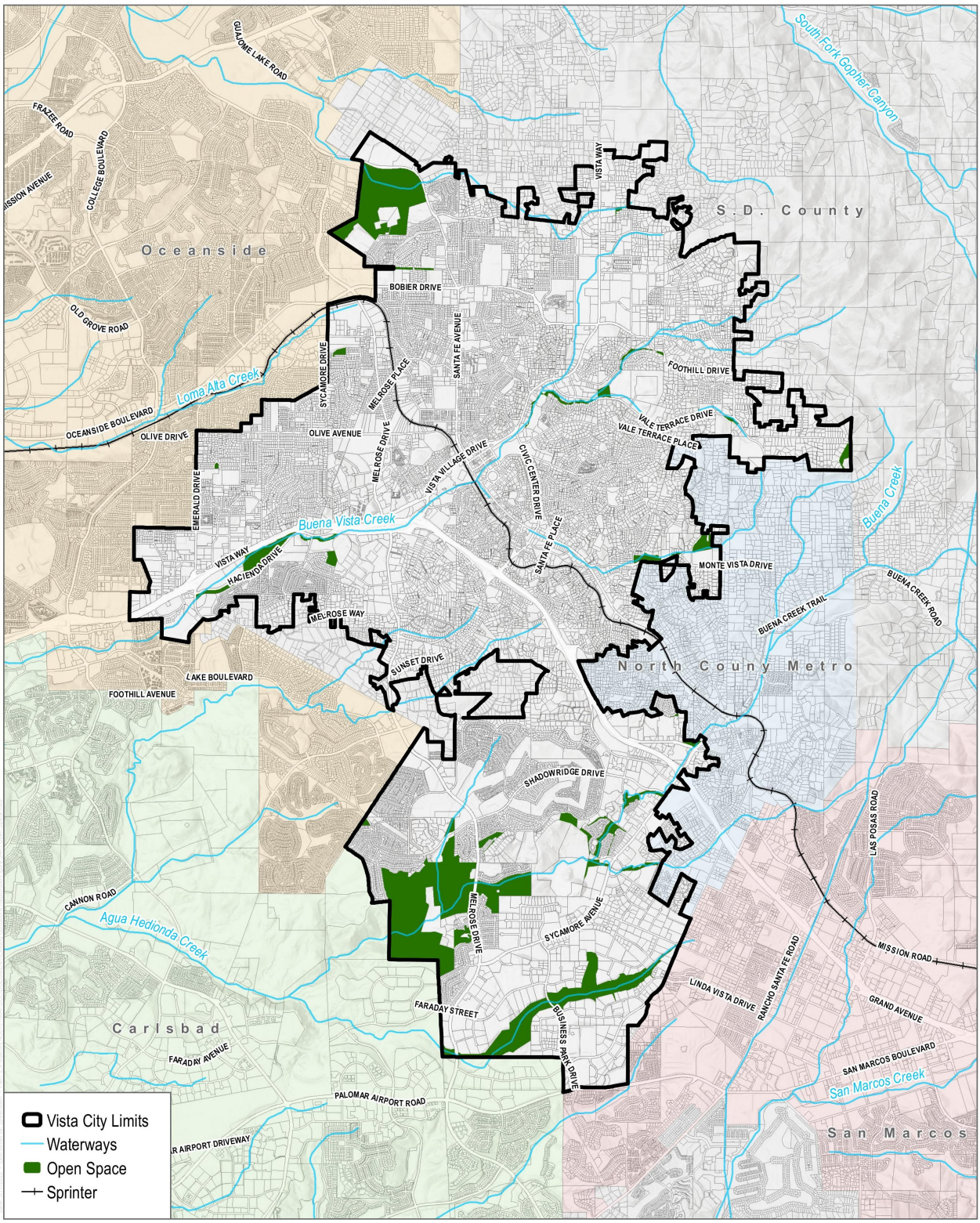
The Buena Vista Creek Ecological Reserve is owned and managed by the Vista Conservancy. The approximate 3-acre reserve encompasses a portion of the Buena

Vista Creek located near Brengle Terrace Park. The reserve includes a trail which connects Wildwood Park to Brengle Terrace Park.

Trails

The five main trail systems within the City of Vista include Buena Vista Park (which features over two miles of hiking/biking trails), Conservancy Trail, Buena Vista Creek Trail, SANDAG Inland Rail Trail, and La Mirada Canyon Trail. All of these trails are located within the open space areas described above with the exception of the SANDAG Inland Rail Trail. The 21-mile Inland Rail Trail runs through the City connecting the communities of Oceanside, Vista, San Marcos, and Escondido, as well as within a portion of the unincorporated County of San Diego. The trail through the City is anticipated to be completed in 2027.

Figure 5.4: Open Space



5.5 Mineral Resources

This section describes the existing conditions and regulatory framework related to mineral resources in the City of Vista.

5.5.1 Findings

- There are no known or inferred mineral resource zones, active oil wells or active gas extraction wells that are mapped within the City; however, the City would still be required to ensure that all City-specific policies, plans, and projects are consistent with relevant requirements related to the Surface Mining and Reclamation Act (SMARA).

5.5.2 Regulatory Setting

Federal

There are no federal regulations pertaining to mineral resource extraction that apply to the proposed General Plan Update.

State

Surface Mining and Reclamation Act of 1975

The Surface Mining and Reclamation Act (SMARA) requires cities and counties to incorporate in their general plans certain mapped designations, including lands categorized as Mineral Resource Zones (MRZs). MRZ classifications are set forth in guidelines developed by the California State Mining and Geology Board (SMGB) and are used to communicate information concerning the location of mineral resources. Mineral lands are mapped according to jurisdictional boundaries (e.g., counties, groups of counties, or major parts of counties), mapping all mineral commodities in the area, including aggregate. Priority is given to areas where future mineral resource extraction could be precluded by incompatible land use or to mineral resources likely to be mined during the 50-year period following their classification. Section 2762(d) of SMARA establishes specific lead agency noticing requirements prior to permitting a use that would threaten the potential for future extraction of identified mineral resources from either (1) MRZ-2 lands, or (2) land designated in a lead agency's general plan as having important minerals to be protected. Prior to permitting a use that would threaten the potential to extract minerals in lands with either of these two designations, the lead agency must prepare a statement specifying its reasons for permitting the proposed use and provide public notice of the statement. The statement must be forwarded to the State Geologist and SMGB for review and is required to comply with the public review requirements of CEQA.

Department of Conservation, Division of Oil, Gas & Geothermal Resources

The Geologic Energy Management Division (CalGEM), formerly the Division of Oil, Gas, and Geothermal Resources, oversees the drilling, operation, maintenance, and plugging and abandonment of oil, natural gas, and geothermal wells, while working to help California achieve its climate change and clean energy goals. CalGEM

publishes regular GIS data which includes updates to well locations and status, oil field boundaries, lease boundaries, and district boundaries. CalGEM also regulates the drilling, operation, and permanent closure of energy resource wells.

Regional

There are no regional regulations pertaining to mineral resources that apply to the proposed General Plan Update.

Local

There are no local regulations pertaining to mineral resource that apply to the proposed General Plan Update.

5.5.3 Existing Conditions

A mineral resource is defined as a concentration of naturally occurring solid, liquid, or gaseous materials in or on the Earth's crust in such form and quantity and of such a grade or quality that it has reasonable prospects for economic extraction, either currently or in the future. Mineral resources include oil, natural gas, and metallic and non-metallic deposits.

Mineral resource areas are identified according to the Surface Mining and Reclamation Act of 1975 (SMARA) and the following criteria for Mineral Resource Zones (MRZ), Scientific Resource Zones (SZ), and Identified Resource Areas (IRA). The MRZ and SZ categories used by the State Geologist in classifying the state's lands, the geologic and economic data, and the substantiation upon which each unit MRZ or SZ assignment is based, are presented in the land classification information provided by the State Geologist to the Board of Supervisors for the following areas:

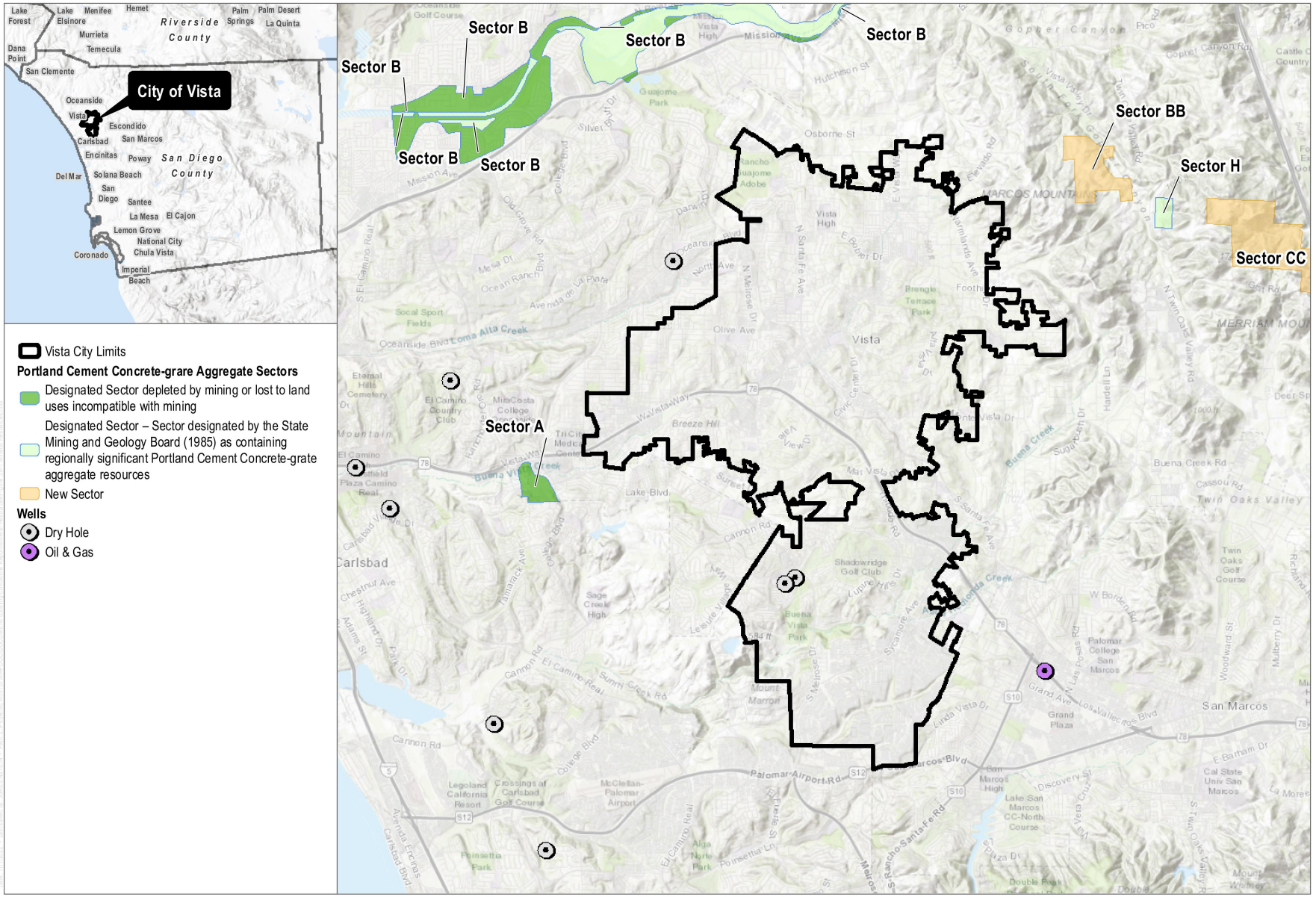
- **MRZ-1**: Areas where adequate geologic information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence. This zone is applied where well developed lines of reasoning, based on economic-geologic principles and adequate data, indicate that the likelihood for occurrence of significant mineral deposits is nil or slight.
- **MRZ-2a:** Areas underlain by mineral deposits where geologic data show that significant measured or indicated resources are present. According to the California Mineral Land Classification System, MRZ-2 is divided on the basis of both degree of knowledge and economic factors. Areas classified MRZ-2a contain discovered mineral deposits that are either measured or indicated reserves as determined by such evidence as drilling records, sample analysis, surface exposure, and mine information. Land included in the MRZ-2a category is of prime importance because it contains known economic mineral deposits. A typical MRZ-2a area would include an operating mine, or an area where extensive sampling indicates the presence of a significant mineral deposit.

- **MRZ-2b:** Areas underlain by mineral deposits where geologic information indicates that significant inferred resources are present. Areas classified MRZ-2b contain discovered deposits that are either inferred reserves or deposits that are presently sub-economic as determined by limited sample analysis, exposure, and past mining history. Further exploration work and/or changes in technology or economics could result in upgrading areas classified MRZ-2b to MRZ-2a. A typical MRZ-2b area would include sites where there are good geologic reasons to believe that an extension of an operating mine exists or where there is an exposure of mineralization of economic importance.
- **MRZ-3a:** Areas containing known mineral deposits that may qualify as mineral resources. Further exploration work within these areas could result in the reclassification of specific localities into the MRZ-2a or MRZ-2b categories. MRZ-3a areas are considered to have a moderate potential for the discovery of economic mineral deposits. According to the California Mineral Land Classification System, MRZ-3 is divided on the basis of knowledge of economic characteristics of the resources. An example of an MRZ-3a area would be where there is direct evidence of a surface exposure of a geologic unit, such as a limestone body, known to be or to contain a mineral resource elsewhere but has not been sampled or tested at the current location.
- **MRZ-3b:** Areas containing inferred mineral deposits that may qualify as mineral resources. Land classified MRZ-3b represents areas in geologic settings which appear to be favorable environments for the occurrence of specific mineral deposits. Further exploration work could result in the reclassification of all or part of these areas into the MRZ-3a category or specific localities into the MRZ-2a or MRZ-2b categories. MRZ-3b is applied to land where geologic evidence leads to the conclusion that it is plausible that economic mineral deposits are present. An example of an MRZ-3b area would be where there is indirect evidence such as a geophysical or geochemical anomaly along a permissible structure which indicates the possible presence of a mineral deposit or that an ore-forming process was operative.
- **MRZ-4:** Areas where geologic information does not rule out either the presence or absence of mineral resources. The distinction between the MRZ-1 and MRZ-4 categories is important for land-use considerations. It must be emphasized that MRZ-4 classification does not imply that there is little likelihood for the presence of mineral resources, but rather there is a lack of knowledge regarding mineral occurrence. Further exploration work could well result in the reclassification of land in MRZ-4 areas to MRZ-3 or MRZ-2 categories.

The Department of Conservation's Division of Mines and Geology (now the California Geological Survey) conducted classification studies throughout the state to identify aggregate resources. The City is located within the Western San Diego Production-Consumption Region which was initially studied in 1982 for Special Report 153, Mineral Land Classification: Aggregate materials in the Western San Diego County Production-Consumption Region. Open-File Report 96-04 provided an update of that report in 1996. More recently, another update was completed in 2017 in Special Report 240 (CGS 2017). According to Special Report 240, there are no known or inferred mineral resources (MRZ-2a or MRZ-2b zones) within the City boundaries as shown in **Figure 5.5** below (CGS 2017).

In addition to aggregate resources, areas of Southern California also include petroleum deposits that provide petroleum extraction opportunities. According to mapping compiled by the California Geologic Energy Management (CalGEM) Division, the City does not contain any oil or gas extraction wells within the City boundaries (CalGEM 2022). There are only two dry holes mapped within the City that have been plugged and were likely drilled for exploratory purposes and were not converted into active wells as shown in **Figure 5.5** below.

Figure 5.5: Mineral Resources



5.6 Key Terms

Air Quality Acronyms

CARB: California Air Resources Board

CAAQS: California Ambient Air Quality Standards

DPM: Diesel Particulate Matter

NAAQS: National Ambient Air Quality Standards

SDAB: San Diego Air Basin

SDAPCD: San Diego Air Pollution Control District

Sensitive Receptor: Pollutant-sensitive members of the population who are especially susceptible to adverse health effects from exposure to toxic air contaminants

O3: Ozone

NOx: Oxides of Nitrogen

NO2: Nitrogen Dioxide

CO: Carbon Monoxide

SOx: Sulfur Oxides

SO2: Sulfur Dioxide

PM10: Particulate matter with an aerodynamic diameter less than or equal to 10 microns

PM 2.5: Particulate matter with an aerodynamic diameter less than or equal to 2.5 microns

Biological Resources Acronyms

CDFW: California Department of Fish and Wildlife

CESA: California Endangered Species Act

CEQA: California Environmental Quality Act

CFGC: California Fish and Game Code

CNDDB: California Natural Diversity Database

CNPS: California Native Plant Society

ESA: Federal Endangered Species Act

FPA: Focused Planning Area

MBTA: Migratory Bird Treaty Act

MHCP: Multiple Habitat Conservation Program

NCCP: Natural Communities Conservation Plan

Ohwm: Ordinary High Water Mark

SSC: Species of Special Concern

RWQCB: Regional Water Quality Control Board

USACE : U.S. Army Corps of Engineers

USFWS: U.S. Fish and Wildlife Service

Mineral Resources Acronyms

IRA: Identified Resource Areas

MRZ: Mineral Resource Zone

SMARA: Surface Mining and Reclamation Act

SZ: Scientific Resource Zones

5.7 References

City of Vista General Plan, 2011

Air Quality

CARB (California Air Resources Board). 2000. Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles. October 2000. Available: http://www.arb.ca.gov/diesel/documents/rrpfinal.pdf. Accessed September 2022.

CARB. 2009. The California Almanac of Emissions and Air Quality, 2009 Edition. March.

CARB. 2013. The California Almanac of Emissions and Air Quality 2013 Edition. Available: https://ww2.arb.ca.gov/our-work/programs/resource-center/technical-assistance/air-quality-and-emissions-data/almanac. Accessed September 2022.

CARB. 2016. "Ambient Air Quality Standards." May 5, 2016. Available: http://www.arb.ca.gov/research/aaqs/aaqs2.pdf. Accessed September 2022.

CARB. 2022a. 2012 Estimate Annual Average Emissions San Diego Air Basin. Available: https://www.arb.ca.gov/app/emsinv/2017/emssumcat_query.php?F_YR=2012&F_DIV=-4&F_SEASON=A&SP=SIP105ADJ&F_AREA=AB&F_AB=SD. Accessed September 2022.

CARB. 2022b. "Overview: Diesel Exhaust and Health." Available: https://www.arb.ca.gov/research/diesel/diesel-health.htm. Accessed September 2022.

CARB. 2022c. "iADAM: Air Quality Data Statistics." Available: http://arb.ca.gov/adam. Accessed September 2022.

California Department of Public Health. 2017. Epidemiologic Summary of Coccidioidomycosis in California, 2016. Prepared by F. Tabnak, K. Knutson, G. Cooksey, A. Nguyen, and D. Vugia. June 2017. Available: https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/CocciEpiSummary2016.pdf. Accessed September 2022.

County of San Diego. 2007. Guidelines for Determining Significance and Report Format and Content Requirements: Air Quality. March 19. Available: https://www.sandiegocounty.gov/content/dam/sdc/pds/ProjectPlanning/docs/AQ-Guidelines.pdf. Accessed September 2022.

County of San Diego. 2019. "San Diego County Annual Communicable Disease Report 2018." County of San Diego, Health and Human Services Agency, Public Health Services, Epidemiology and Immunization Services Branch. October 2019.

County of San Diego. 2021a. Monthly Communicable Disease Report. Available: https://www.sandiegocounty.gov/content/dam/sdc/hhsa/programs/phs/Epidemiology/Monthly%20CD%20Report_May%202021.pdf. Accessed September 2022.

EPA. 2009. "Integrated Science Assessment for Particulate Matter." EPA/600/R-08/139F. Available: https://www.epa.gov/isa/integrated-science-assessment-isa-particulate-matter. Accessed September 2022.

EPA. 2013. "Integrated Science Assessment of Ozone and Related Photochemical Oxidants." EPA/600R-10/076F. Available: https://www.epa.gov/isa/integrated-science-assessment-isa-ozone-and-related-photochemical-oxidants. Accessed September 2022.

EPA. 2016a. "Integrated Science Assessment for Oxides of Nitrogen-Health Criteria (2016 Final Report)." U.S. EPA, EPA/600/R-15/068, 2016. Available: https://cfpub.epa.gov/ncea/isa/recordisplay.cfm?deid=310879. Accessed September 2022.

SANDAG. 2017a. "Series 13: 2050 Regional Growth Forecast." Accessed June 2017. http://www.sandag.org/index.asp?classid=12&subclassid=84&projectid=503&fuseaction=projects.detail. Accessed September 2022.

SANDAG. 2017b. "Comprehensive Transportation Projects: 2050 Regional Transportation Plan." Accessed June 2017. http://www.sandag.org/index.asp?projectid=349&fuseaction=projects.detail. Accessed September 2022.

SDAPCD (San Diego Air Pollution Control District). 1976. Rules and Regulations. Regulation IV. Prohibitions. Rule 51. Nuisance. Effective November 8. Available: https://www.sdapcd.org/content/dam/sdapcd/documents/rules/current-rules/Rule-51.pdf. Accessed September 2022.

SDAPCD. 1997. Rules and Regulations. Regulation IV. Prohibitions. Rule 50. Visible Emissions. Effective August 13. Available: https://www.sdapcd.org/content/dam/sdapcd/documents/rules/current-rules/Rule-50.pdf. Accessed September 2022.

SDAPCD. 2005. Measures to Reduce Particulate Matter in San Diego County. December 2005. Available: http://sntbberry.cityofsanteeca.gov/sites/FanitaRanch/Public/Remainder%20of%20the%20Record

/(2)%20Reference%20Documents%20from%20EIR%20&%20Technical%20Reports/Tab%20203%20-%202005-12%20SDAPCD_Measures%20to%20Reduce%20Particulate%20Matter.pdf. Accessed September 2022.

SDAPCD. 2009a. 2009 Regional Air Quality Strategy Revision. April 2009. Available: https://www.sandiegocounty.gov/content/dam/sdc/pds/ceqa/JVR/AdminRecord/IncorporatedByReference/Section-2-2---Air-Quality-References/SDAPCD%202009-RAQS.pdf. Accessed September 2022.

SDAPCD. 2009b. Rules and Regulations. Regulation IV. Prohibitions. Rule 55. Fugitive Dust. Adopted June 24, 2009; effective December 24, 2009. Available: https://www.sdapcd.org/content/dam/sdapcd/documents/rules/current-rules/Rule-55.pdf. Accessed September 2022.

SDAPCD. 2020. 2020 Plan for Attaining the National Ambient Air Quality Standards for Ozone in San Diego County. October. Available: https://www.sdapcd.org/content/dam/sdapcd/documents/grants/planning/Att%20A%20(Attainment%20Plan)_ws.pdf. Accessed September 2022.

SDAPCD. 2015. Rules and Regulations. Regulation IV. Prohibitions. Rule 67.0.1. Architectural Coatings. Revised June 24, 2015. Available: https://www.sdapcd.org/content/dam/sdapcd/documents/rules/rule-archive/2021/Rule-67.0.1.pdf. Accessed September 2022.

SDAPCD. 2016c. 2016 Revision of the Regional Air Quality Strategy for San Diego County. December 2016. Available: http://sntbberry.cityofsanteeca.gov/sites/FanitaRanch/Public/Remainder%20of%20the%20Record/(2)%20Reference%20Documents%20from%20EIR%20&%20Technical%20Reports/Tab%20421%20-%202016-12%20SDAPCD_Revision%20of%20the%20Regional%20Air%20Qualiy%20Strategy.pdf. Accessed September 2022.

SDAPCD. 2022a. Annual Air Quality Monitoring Network Report 2021. May 17. Available: https://www.sdapcd.org/content/dam/sdapcd/documents/monitoring/2021-Network-Report.pdf. Accessed September 2022.

SDAPCD. 2022b. Attainment Status. Available: https://www.sdapcd.org/content/sdapcd/planning/attainment-status.html. Accessed September 2022.

SDAPCD. 2022c. Supplemental Guidelines for Submission of Air Toxics "Hot Spots" Program Health Risk Assessments (HRAs)". July. Available: https://www.sdapcd.org/content/dam/sdapcd/documents/permits/air-toxics/Hot-Spots-Guidelines.pdf. Accessed September 2022.

Western Regional Climate Center. 2022. Vista 2, NNE, California (049378) Climate Data. Available: https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca9378. Accessed September 2022.

Windfinder. 2022. Annual wind and weather statistics for McClellan-Palomar Airport. Available: https://www.windfinder.com/windstatistics/carlsbad_palomar. Accessed September 2022.

Water Resources and Quality

AECOM. Special Study – City of Vista's Hydrology Characteristics within the San Luis Rey Watershed. April 30, 2019.

California Regional Water Quality Control Board San Diego Region. Water Quality Control Plan for the San Diego Basin (Basin Plan). 1994.

City of Vista. City of Vista Fiscal Year 2020-21 Jurisdictional Runoff Management Program Annual Reports CW 270704 and WDID 9 000510S17. January 19, 2022.

City of Vista. City of Vista Jurisdictional Runoff Management Program. June 2019.

City of Vista. Vista Municipal Code Chapter 13.18 Storm Water Management and Discharge Control Program. September 23, 2016.

Biological Resources and Open Space

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

16 USC 1531–1544. Endangered Species Act of 1973, as amended.

CDFW. 2022a. California Natural Diversity Database. RareFind 5 (Commercial Subscription). Sacramento, California: CDFW, Biogeographic Data Branch. Accessed September 2022. https://wildlife.ca.gov/Data/CNDDB/Maps-and-Data.

CDFW. 2022b. "State and Federally Listed Endangered, Threatened, and Rare Plants of California." California Natural Diversity Database. CDFW, Biogeographic Data Branch. July 2022. https://www.dfg.ca.gov/wildlife/nongame/list.html

CDFW. 2022c. "Special Animals List." California Natural Diversity Database. CDFW, Biogeographic Data Branch. July 2022. https://www.dfg.ca.gov/wildlife/nongame/list.html

California Native Plant Society, Rare Plant Program. 2022. Rare Plant Inventory (online edition, v9-01 1.5). Website https://www.rareplants.cnps.org [accessed 8 September 2022].

Google Earth. 2022. Digital maps and images.

Oberbauer, Thomas, Meghan Kelly, and Jeremy Buegge. March 2008. Draft Vegetation Communities of San Diego County. Based on "Preliminary Descriptions of the Terrestrial Natural Communities of California," Robert F. Holland, Ph.D., October 1986.

SANDAG. 2003. Final Multiple Habitat Conservation Plan for the Cities of Carlsbad, Encinitas, Escondido, Oceanside, San Marcos, Solana Beach, and Vista. Prepared by AMEC Earth & Environmental, Inc. Conservation Biology Institute. March 2003.

SANGIS. 2021. ECO_VEGETATION_CN GIS Layer. Vegetation Information in the San Diego Region.

Unitt, P. 2004. San Diego County Bird Atlas. Online (Google Earth) version. Proceedings of the San Diego Society of Natural History, no. 39. San Diego, California: San Diego Natural History Museum. Accessed 2022. http://www.sdnhm.org/science/birds-and-mammals/projects/san-diego-county-bird-atlas/.

USFWS. 2022a. "Critical Habitat and Occurrence Data" [map]. Accessed September 2022. http://www.fws.gov/data.

USFWS. 2022b. National Wetlands Inventory. Accessed September 2022. fws.gov/wetlands/NWI/index.html.

USGS (U.S. Geological Survey). 2022. "Flow lines, water points, watershed boundaries" [digital GIS data]. National Hydrography Dataset website. November 2020. http://nhd.usgs.gov/.

Mineral Resources

California Geological Survey, 2017. Update of Mineral Land Classification: Portland Cement Concrete-Grade Aggregate in the Western San Diego County Production-Consumption Region, California, 2017.

California Geologic Energy Management (CalGEM), 2022. CalGEM Well Finder, https://maps.conservation.ca.gov/doggr/wellfinder/#openModal/-117.07601/33.16886/12.

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

16 USC 1531–1544. Endangered Species Act of 1973, as amended.

CDFW. 2022a. California Natural Diversity Database. RareFind 5 (Commercial Subscription). Sacramento, California: CDFW, Biogeographic Data Branch. Accessed September 2022. https://wildlife.ca.gov/Data/CNDDB/Maps-and-Data.

CDFW. 2022b. "State and Federally Listed Endangered, Threatened, and Rare Plants of California." California Natural Diversity Database. CDFW, Biogeographic Data Branch. July 2022. https://www.dfg.ca.gov/wildlife/nongame/list.html

CDFW. 2022c. “Special Animals List.” California Natural Diversity Database. CDFW, Biogeographic Data Branch. July 2022. https://www.dfg.ca.gov/wildlife/nongame/list.html

California Native Plant Society, Rare Plant Program. 2022. Rare Plant Inventory (online edition, v9-01 1.5). Website https://www.rareplants.cnps.org [accessed 8 September 2022].

Google Earth. 2022. Digital maps and images.

Oberbauer, Thomas, Meghan Kelly, and Jeremy Buegge. March 2008. Draft Vegetation Communities of San Diego County. Based on “Preliminary Descriptions of the Terrestrial Natural Communities of California,” Robert F. Holland, Ph.D., October 1986.

SANDAG. 2003. Final Multiple Habitat Conservation Plan for the Cities of Carlsbad, Encinitas, Escondido, Oceanside, San Marcos, Solana Beach, and Vista. Prepared by AMEC Earth & Environmental, Inc. Conservation Biology Institute. March 2003.

SANGIS. 2021. ECO_VEGETATION_CN GIS Layer. Vegetation Information in the San Diego Region.

Unitt, P. 2004. San Diego County Bird Atlas. Online (Google Earth) version. Proceedings of the San Diego Society of Natural History, no. 39. San Diego, California: San Diego Natural History Museum. Accessed 2022. http://www.sdnhm.org/science/birds-and-mammals/projects/san-diego-county-bird-atlas/.

USFWS. 2022a. “Critical Habitat and Occurrence Data” [map]. Accessed September 2022. http://www.fws.gov/data.

USFWS. 2022b. National Wetlands Inventory. Accessed September 2022. fws.gov/wetlands/NWI/index.html.

USGS (U.S. Geological Survey). 2022. “Flow lines, water points, watershed boundaries” [digital GIS data]. National Hydrography Dataset website. November 2020. http://nhd.usgs.gov/.

6.0 HAZARDS AND SAFETY

The Hazards and Safety chapter details the various hazards and safety issues present within the City of Vista. In 2018, as part of the Multi-jurisdictional Hazard Mitigation Plan update, Vista identified the city's top hazards and are as follows: wildfires, geologic and seismic, flooding, hazardous materials release, and noise and vibration.

6.1 Wildfire Hazards

California faces a dramatic increase in the number and severity of wildfires. Of the 20 most destructive wildfires in the state's history, 18 have occurred since 2000 and 15 have occurred since 2015 (CAL FIRE 2022a). Since 2020, California has experienced two of the most destructive fire seasons in the state's history, with numerous record-breaking catastrophic wildfires occurring throughout California and over 4.2 million acres burned in 2020 and over 2.5 million acres burned in 2021 (CAL FIRE 2022b). With portions of the City of Vista being rural in nature and many areas with urban wildland interface – both along the City's edges and within - wildfire risk is a hazard present in the City.

6.1.1 Findings

- Although the San Diego region has had many significant wildfires in recent history, the City of Vista and the greater Vista Fire Protection District has had a limited number. The lack of fires in the area could lead to more intense or destructive fires in the future due to possible accumulation of vegetation without specific vegetation management priorities in place.
- The main vegetation types in the City include non-native grassland, which exhibit lower flame lengths and heat outputs, but exhibit more rapid fire spread rates, and southern mixed chapparal, which exhibit higher intensity heat and flame lengths.
- The City experiences steep slopes in the southern and northeastern areas, where fires can burn quickly through vegetated hillsides. Lands in the southern and northern portions of the City are also classified as very high Fire Hazard Severity Zones (FHSZ). There are also moderate to high FHSZs located along the borders of Oceanside, Carlsbad, and San Marcos.
- Vegetation management should be prioritized in communities in or near areas identified as very high and high FHSZ as those communities are at the greatest risk.
- The primary evacuation transportation routes for the City that have been identified for use in an evacuation are SR-78, I-5 and I-15.

6.1.2 Regulatory Setting

Federal

National Fire Protection Association Codes, Standards, Practices, and Guides

National Fire Protection Association codes, standards, recommended practices, and guides are developed through a consensus standards development process approved by the American National Standards Institute. This process brings together professionals representing varied viewpoints and interests to achieve consensus on fire and other safety issues. National Fire Protection Association standards are recommended guidelines and nationally accepted good practices in fire protection but are not laws or codes unless adopted as such or referenced as such by the California Fire Code (CFC) or the local fire agency.

Federal Wildland Fire Management Policy

The Federal Wildland Fire Management Policy was developed in 1995, updated in 2001, and again in 2009 by the National Wildfire Coordinating Group, a federal multi-agency group that establishes consistent and coordinated fire management policy across multiple federal jurisdictions. An important component of the Federal Wildland Fire Management Policy is the acknowledgment of the essential role of fire in maintaining natural ecosystems. The Federal Wildland Fire Management Policy is based on the following guiding principles, found in the Guidance for Implementation of Federal Wildland Fire Management Policy (National Wildfire Coordinating Group 2009):

- Firefighter and public safety are the first priority in every fire management activity.
- The role of wildland fire as an essential ecological process and natural change agent will be incorporated into the planning process.
- Fire management plans, programs, and activities support land and resource management plans and their implementation.
- Sound risk management is a foundation for all fire management activities.
- Fire management programs and activities are economically viable, based upon values to be protected, costs, and land and resource management objectives.
- Fire management plans and activities are based upon the best available science.
- Fire management plans and activities incorporate public health and environmental quality considerations.
- Federal, state, tribal, local, interagency, and international coordination and cooperation are essential.

- Standardization of policies and procedures among federal agencies is an ongoing objective.

National Fire Plan

The National Fire Plan, officially titled Managing the Impacts of Wildfire on Communities and the Environment: A Report to the President In Response to the Wildfires of 2000, was a presidential directive in 2000 as a response to severe wildland fires that had burned throughout the United States. The National Fire Plan focuses on reducing fire impacts on rural communities and providing assurance for sufficient firefighting capacity in the future. The plan addresses five key points: firefighting; rehabilitation; hazardous fuels reduction; community assistance; and accountability. The plan provides technical, financial, and resource guidance and support for wildland fire management across the United States. The U.S. Forest Service and the Department of the Interior are working to successfully implement the key points outlined in the plan (USDA, DOI 2001).

International Fire Code

Created by the International Code Council, the International Fire Code addresses a wide array of conditions hazardous to life and property, including fire, explosions, and hazardous materials handling or usage. The International Fire Code places an emphasis on prescriptive and performance-based approaches to fire prevention and fire protection systems. Updated every three years, the International Fire Code uses a hazards classification system to determine the appropriate measures to be incorporated to protect life and property (often times these measures include construction standards and specialized equipment). The International Fire Code uses a permit system (based on hazard classification) to ensure that required measures are instituted (ICC 2021).

State

California Government Code

California Government Code, Sections 51175 through 51189 provide guidance for classifying lands in California as fire hazard areas and requirements for management of property within those lands. CAL FIRE is responsible for classifying FHSZs based on statewide criteria and makes the information available for public review. Further, local agencies must designate, by ordinance, Very High FHSZs within their jurisdiction based on the recommendations of CAL FIRE.

Section 51182 sets forth requirements for maintaining property within fire hazard areas, such as defensible space, vegetative fuels management, and building materials and standards. Defensible space around structures in fire hazard areas must consist of 100 feet of fuel modification on each side of a structure, but not beyond the property line unless findings conclude that the clearing is necessary to significantly reduce the risk of structure ignition in the event of a wildfire. Clearance on adjacent property shall only be conducted following written consent by the

adjacent owner. Further, trees must be trimmed from within 10 feet of the outlet of a chimney or stovepipe, vegetation near buildings must be maintained, and roofs of structures must be cleared of vegetative materials. Exemptions may apply for buildings with an exterior constructed entirely of nonflammable materials.

California Code of Regulations

Title 14 Natural Resources

Title 14, Division 1.5, Chapter 7, Subchapter 3, Fire Hazard, also sets forth requirements for defensible space if the distances specified above cannot be met. For example, options that have similar practical effects include noncombustible block walls or fences, 5 feet of noncombustible material horizontally around the structure, installing hardscape, landscaping, or reducing exposed windows on the side of the structure with a less-than-30-foot setback, or additional structure hardening such as those required in the California Building Code—California Code of Regulations Title 24, Part 2, Chapter 7A.

Title 24 California Building Standards Code

California Building Code

Part 2 of Title 24 contains the California Building Code. Chapter 7A of the California Building Code regulates building materials, systems, and/or assemblies used in the exterior design and construction of new buildings located within a fire hazard area. Fire hazard areas as defined by the California Building Code include areas identified as a FHSZ within a State Responsibility Area or a wildland–urban interface fire area. The purpose of Chapter 7A is to establish minimum standards for the protection of life and property by increasing the ability of structures located in a fire hazard area to resist the intrusion of flames or burning embers projected by a wildfire, and to contribute to a systematic reduction in structural losses from a wildfire. New buildings located in such areas must comply with the ignition-resistant construction standards outlined in Chapter 7A.

California Fire Code

Part 9 of Title 24 contains the CFC, which incorporates by adoption the International Fire Code with necessary California amendments. The purpose of the CFC is to establish the minimum requirements to safeguard the public health, safety, and general welfare from the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures, and premises, and to provide safety and assistance to firefighters and emergency responders during emergency operations. Chapter 49 of the CFC contains minimum standards for development in the wildland–urban interface and fire hazard areas.

The CFC and Office of the State Fire Marshal provide regulations and guidance for local agencies in the development and enforcement of fire safety standards. The CFC is updated and published every three years by the California Building Standards Commission. The 2019 CFC took effect on January 1, 2020.

Fire Hazard Severity Zones

The California Department of Fire and Forestry Protection (CAL FIRE) maps FHSZs based on fuel loading, slope, fire history, weather, and other relevant factors as directed by California Public Resources Code, Sections 4201–4204, and California Government Code, Sections 51175–51189. FHSZs are ranked from Moderate to Very High and are categorized for fire protection within a Federal Responsibility Area, State Responsibility Area, or Local Responsibility Area under the jurisdiction of a federal agency, CAL FIRE, or local agency, respectively.

California Strategic Fire Plan

The 2018 Strategic Fire Plan for California reflects CAL FIRE's focus on fire prevention and suppression activities to protect lives, property, ecosystem services, and natural resource management to maintain the state's forests as a resilient carbon sink to meet California's climate change goals and to serve as important habitat for adaptation and mitigation. The Strategic Fire Plan for California provides a vision for a natural environment that is more fire resilient, buildings, and infrastructure that are more fire resistant, and a society that is more aware of and responsive to the benefits and threats of wildland fire, all achieved through local, state, federal, tribal, and private partnerships (CAL FIRE 2018). Plan goals include the following:

- Identify and evaluate wildland fire hazards and recognize life, property, and natural resource assets at risk, including watershed, habitat, social, and other values of functioning ecosystems.
- Facilitate the collaborative development and sharing of all analyses and data collection across all ownerships for consistency in type and kind.
- Promote and support local land use planning processes as they relate to: (a) protection of life, property, and natural resources from risks associated with wildland fire; and (b) individual landowner objectives and responsibilities.
- Support and participate in the collaborative development and implementation of local, county, and regional plans that address fire protection and landowner objectives.
- Increase fire prevention awareness, knowledge, and actions implemented by individuals and communities to reduce human loss, property damage, and impacts to natural resources from wildland fires.
- Integrate fire and fuels management practices with landowner/land manager priorities across jurisdictions.
- Determine the level of resources necessary to effectively identify, plan, and implement fire prevention using adaptive management strategies.
- Determine the level of fire suppression resources necessary to protect the values and assets at risk identified during planning processes.

- Implement post-fire assessments and programs for the protection of life, property, and natural resource recovery.

California Mutual Aid Agreements

The California Disaster and Civil Defense Master Mutual Aid Agreement, as provided by the California Emergency Services Act, provides statewide mutual aid between and among local jurisdictions and the state. The statewide mutual aid system exists to ensure that adequate resources, facilities, and other supports are provided to jurisdictions whenever resources prove to be inadequate for a given situation. Each jurisdiction controls its own personnel and facilities but can give and receive help whenever needed.

California Natural Disaster Assistance Act

The California Natural Disaster Assistance Act provides financial aid to local agencies to assist in the permanent restoration of public real property, other than facilities used solely for recreational purposes, when such real property has been damaged or destroyed by a natural disaster. The California Natural Disaster Assistance Act is activated after a local declaration of emergency, after the California Emergency Management Agency gives concurrence with the local declaration, or after the governor issues a proclamation of a state emergency. Once the California Natural Disaster Assistance Act is activated, local government is eligible for certain types of assistance, depending on the specific declaration or proclamation issued.

State Fire Regulations

State fire regulations are set forth in Sections 13000 et seq. of the California Health and Safety Code and include regulations concerning building standards (as also set forth in the CBC), fire protection and notification systems, fire protection devices such as extinguishers and smoke alarms, high-rise building and childcare facility standards, and fire suppression training. The state fire marshal enforces these regulations and building standards in all state-owned buildings, state-occupied buildings, and state institutions throughout California.

Regional

Unified San Diego County Emergency Services Organization

The Unified San Diego County Emergency Services Organization has primary responsibility for preparedness and response activities in the County of San Diego (County). The County Office of Emergency Services serves as staff to the Unified Disaster Council, the governing body of the Unified San Diego County Emergency Services Organization. Emergency response and preparedness plans include the Operational Area Emergency Operation Plan and the County Multi-Jurisdictional Hazard Mitigation Plan.

San Diego County Emergency Operations Plan

As described above, the County of San Diego Office of Emergency Services has prepared the San Diego Emergency Operations Plan which outlines the roles and responsibilities of participating departments and jurisdictions during major emergencies and disasters. The City of Vista is a participating jurisdiction within the operational area. The EOP includes an overview of hazards including earthquakes; flooding; drought; dam failure; nuclear-related incidents; water, gas or energy shortages; terrorism; tsunami; wildland fire; urban fire; transportation accidents; hazardous materials incidents; and landslides.

The EOP identifies five objectives for the operational area:

- To provide a system for the effective management of emergency situations.
- To identify lines of authority and relationships.
- To assign tasks and responsibilities.
- To ensure adequate maintenance of facilities, services and resources.
- To provide a framework for adequate resources for recovery operations.

San Diego County Multi-Jurisdictional Hazard Mitigation Plan

The City of Vista is a participating jurisdiction in the Multi-Jurisdictional Hazard Mitigation Plan, a Countywide plan that identifies risks, minimizes damage from natural and human-made disasters, and is generally intended to provide compliance with regulatory requirements associated with emergency response efforts. The Multi-Jurisdictional Hazard Mitigation Plan includes an overview of the risk assessment process, vulnerability assessments, and identifies hazards present in each jurisdiction of the County. Hazards profiled in the plan include wildfire, structure fire, flood, coastal storms, erosion, tsunami, earthquakes, liquefaction, rain-induced landslide, dam failure, hazardous materials incidents, nuclear materials release, and terrorism. The plan sets forth a variety of objectives and actions based on a set of broad goals including the following: (1) promoting disaster-resistant future development; (2) increased public understanding and support for effective hazard mitigation; (3) building support of local capacity and commitment to become less vulnerable to hazards; (4) enhancement of hazard mitigation coordination and communication with federal, state, local and tribal governments; and (5) reducing the possibility of damage and losses to existing assets, particularly people, critical facilities or infrastructure, and County-owned facilities, due to dam failure, earthquake, coastal storm, erosion, tsunami, landslides, floods, structural fire/wildfire, and human-made hazards.

Local

City of Vista Development Code

In 2016, the City of Vista updated their Fire Code in accordance with the 2016 California Fire Code and the 2015 International Fire Code. The Vista Fire Code is adopted for the protection of the public health and safety. It includes: definitions; provisions for the safeguarding of life and property from fire and explosion hazards arising from the storage; handling and use of hazardous substances, materials and devices, and from conditions hazardous to life or property in the occupancy of buildings; requirements for permits and inspection for installing or altering systems; regulations for the erection, construction, enlargement, alteration, repair, moving, removal, conversion, demolition, equipment use and maintenance of buildings and structures, including the installation; and alteration or repair of new and existing fire protection systems and their inspection and provides penalties for violation of this code. The update to the Fire Code increased standards for structures, permitting, and related activities to keep the public safe (City of Vista. 2016).

Vista Fire Department Strategic Plan

In 2020, the Vista Fire Department prepared a strategic plan for 2020- 2025 that guides the Fire Department to better serve the City of Vista. The strategic plan specifically addresses community and agency stakeholder input, critical issues and service gaps, and goals and objectives for the Fire Department. The strategic plan supports relevant stakeholders, including agencies and the community, to be clear about the roles, current performance, and future expectations and capabilities for the Fire Department (City of Vista 2020).

Vista Fire Protection District Community Wildfire Protection Plan

In 2005, the Vista Fire Protection District prepared a Community Wildfire Protection Plan (CWPP) to help address and mitigate the risk of wildland fire within the City of Vista. The 2005 CWPP specifically addresses ingress and egress during a wildfire, public awareness of wildfire threat and mitigating for threat, reduction of structural ignitability, and adoption of coordinated construction and maintenance codes that support prudent wildland urban interface living.

In 2022, another CWPP was drafted to provide more specific analysis for portions that are characterized by wildland-urban interface (WUI) and wildland interface (WI). The 2022 CWPP identified 13 communities that range in moderate to extreme hazard ratings and includes recommended measures to help mitigate the risk of wildfire in these areas.

City of Vista General Plan – Public Safety Element

In 2012, the City of Vista adopted the Vista General Plan 2030. The General Plan guides the development within the City to help achieve the vision for 2030 for a safe, clean, attractive City with a strong sense of community. The General Plan contains

seven elements including: Circulation; Healthy Vista; Housing; Land Use & Community Identity; Noise; Public Safety, Facilities, & Services; and Resource Conservation & Sustainability. The Public Safety, Facilities & Services Element addresses the protection of citizens, structures, infrastructure, and facilities from natural and human- made hazards.

Goals addressing wildfire hazards include:

- **PSFS GOAL 2**: Prepare for and provide adequate and effective emergency response services to respond to natural and human -made emergencies and disasters, and acts of terrorism.
- **PSFS Goal 5:** Protect life, property, and the environment from structural, wildland-urban, and wildland fire damage.
- **PSFS Goal 12**: Continue to provide fire protection and related emergency services to protect persons and property from fire and other community hazards.

6.1.3 Existing Conditions

Fire History

The San Diego Region has seen many significant wildfires in recent history; however, the City of Vista has had a limited number of fires occur compared to the surrounding region (VFPD 2005). As shown in **Figure 6.1**, most of the City and VFPD has not burned in recent history and of the areas that have burned, almost all have only burned once. Due to the limited number of fires within the City and VFPD in recent history, vegetation has the potential to overgrow and create additional fuels throughout the City and VFPD that could lead to more intense fires without the application of vegetation management.

Vegetation Communities and Land Covers

The City is largely developed with 81 percent of the acres to be comprised of urban and developed areas, and another 4 percent of land cover designated for agricultural uses. However, there are 22 vegetation communities in the remaining acreage. This is comprised of both native and naturalized vegetation communities with non-native grassland, southern mixed chapparal, southern riparian scrub, and southern sycamore-alder riparian woodland being the dominating communities (Dudek 2022).

Topography and Terrain

The developed portion of the City ranges in elevation from 200 to 700 feet above mean sea level (amsl) and the highest point in the City is 1,200 feet amsl. Steep slopes are present throughout portions of the City; however, the steepest slopes (40 percent +) are located within the southern and northeastern portion of the City and within the northern and eastern portions of the VFPD on the San Marcos Mountains (City of Vista 2012).

Climate, Weather, and Wind

Wet winters and dry summers, with mild seasonal changes, characterize the Southern California climate. The climate in City of Vista can be generally characterized as consisting of mild in temperature and humidity. The City generally experiences westerly winds from the Pacific Ocean.

This mild climate pattern is occasionally interrupted by dry, easterly Santa Ana winds during the late summer and early fall. The Santa Ana winds occur throughout southern California that bring hot dry winds to the region. During a Santa Ana wind event, temperatures and wind speed increase and humidity is lowered (Anchorpoint 2005).

The annual average temperature in Vista is approximately 64°F. Average winter temperatures are approximately 56°F, and average summer temperatures are approximately 70°F. Annual precipitation in the City averages approximately 13.09 inches. Precipitation occurs mostly during the winter and relatively infrequently during the summer (WRCC 2022). Wind monitoring data recorded at McClellan-Palomar Airport in Carlsbad indicates that the predominant wind direction is west-southwest, with an average wind speed of approximately seven miles per hour (Winderfinder 2022).

Evacuation Routes

The San Diego County EOP identifies State Route 78 (SR-78), within the City of Vista, and Interstate 5 (I-5) to the west, Interstate 15 (I-15) to the east, State Route 76 (SR-76) just north of the City as primary transportation routes that could be used in the case of an evacuation. SR-78 and SR-76 runs east west connecting I-5 and I-15 which both run north to south (USDCESO & SDC 2022).

The 2022 CWPP has identified recommendations for fuel modifications for eight potential evacuation routes within the VFPD. Evacuation on these routes have been identified because at least a portion of the route is threatened by the proximity to significant fuel loads (Anchorpoint 2022). Additionally, the County of San Diego will soon be implementing evacuation zones throughout San Diego County to aid in phased evacuations during emergency event, such as wildfire. Evacuation zones assist law enforcement/emergency management to make precise evacuations based on each specific event.

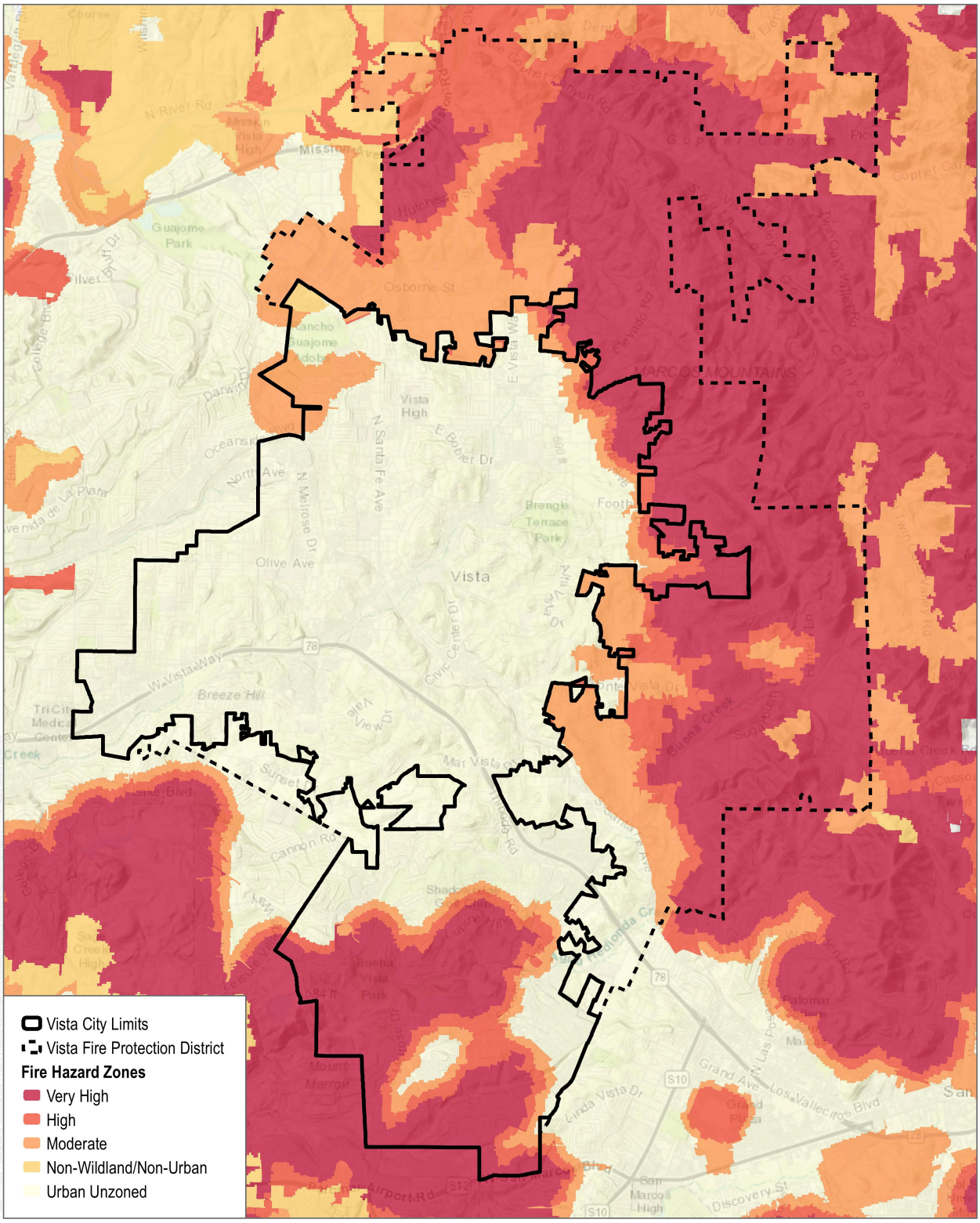
Fire Hazards

FRAP Mapping

As described above, CAL FIRE maps FHSZs based on fuel loading, slope, fire history, weather, and other relevant factors. FHSZs are ranked from Moderate to Very High and are categorized for fire protection within a Federal Responsibility Area (FRA), State Responsibility Area (SRA), or Local Responsibility Area (LRA) under the jurisdiction of a federal agency, CAL FIRE, or local agency, respectively.

Areas identified as FHSZs within the limits of the City of Vista are considered LRA, while areas within the boundary of the VFPD are considered SRA. As shown in **Figure 6.1,** CAL FIRE has identified Very High Fire Hazard Severity Zones (VHFHSZ) in the northeastern and southwestern portions of the City. The majority of the VFPD contains Moderate to Very High FHSZ, with the exception of the southwestern portion of the VFPD, which is not within a FHSZ. In addition to the FHSZ within the City and VFPD, Moderate to Very High FHSZ were identified beyond the border of the City of Vista and VFPD along the borders of Oceanside, Carlsbad, and San Marcos.

Figure 6.1: Fire Hazard Severity Zones



6.2 Geologic and Seismic Hazards

This section addresses the geology and soils conditions within the City of Vista and the potential risk these conditions pose.

6.2.1 Findings

- The City is located within a seismically active area, although there are no Holocene-active faults that intersect the City limits. As a result, ground displacement due to fault rupture is not considered likely, but there is a high likelihood of experiencing a substantial earthquake in the relatively near future.
- Secondary effects including liquefaction and seismically-induced landslides can also occur from seismic events that can cause substantive damage and injury in structures that are not designed or built according to seismic regulations. However, all development projects are required to adhere to the most current version of the California Building Code (CBC) which includes seismic design requirements that have been developed to minimize damage and injury. The CBC also includes requirements for other hazards including slope stability (landslides), expansive soils, and subsidence.
- Compliance with building codes can ensure that development and redevelopment projects are constructed in a manner consistent with the most current seismic design standards and geotechnical engineering practices that are effective in minimizing adverse effects.

6.2.2 Regulatory Setting

Federal

Earthquake Hazards Reduction Act

The Earthquake Hazards Reduction Act was enacted in 1997 to "reduce the risks to life and property from future earthquakes in the United States through the establishment and maintenance of an effective earthquake hazards and reduction program." To accomplish this, the Act established the National Earthquake Hazards Reduction Program (NEHRP). This program was significantly amended in November 1990, and refined the description of agency responsibilities, program goals, and objectives.

NEHRP's mission includes improved understanding, characterization, and prediction of hazards and vulnerabilities; improvement of building codes and land use practices; risk reduction through post-earthquake investigations and education; development and improvement of design and construction techniques; improvement of mitigation capacity; and accelerated application of research results. The NEHRP designates the Federal Emergency Management Agency (FEMA) as the lead agency of the program and assigns it several planning, coordinating, and reporting responsibilities. Programs under NEHRP help inform and guide planning

and building code requirements such as emergency evacuation responsibilities and seismic code standards such as those to which the proposed project would be required to adhere.

Occupational Safety and Health Administration

Excavation and trenching are among the most hazardous construction activities. The Occupational Safety and Health Administration (OSHA) Excavation and Trenching Standard (29 CFR, Part 1926[P] et seq.) covers requirements for excavation and trenching operations. OSHA requires that all excavations in which employees could potentially be exposed to cave-ins be protected by sloping or benching the sides of the excavation, supporting the sides of the excavation, or placing a shield between the side of the excavation and the work area.

State

California Building Code

State regulations protecting structures from geo-seismic hazards are contained in the California Code of Regulations, Title 24, Part 2 (the California Building Code (CBC)), which is updated on a triennial basis. These regulations apply to public and private buildings in California and are based on the International Building Code (IBC). The 2019 CBC, effective January 1, 2020, is based on the 2018 IBC and enhances the sections dealing with existing structures. Seismic-resistant construction design is required to meet more stringent technical standards than those set by previous versions of the CBC. The 2022 CBC will be based on the 2021 IBC and is anticipated to become effective January 1, 2023.

Chapters 16 and 16A of the 2019 CBC include structural design requirements governing seismically resistant construction, including factors and coefficients used to establish seismic site class and seismic occupancy category for the soil/rock at the building location and the proposed building design. Chapters 18 and 18A include the requirements for foundation and soil investigations (Sections 1803 and 1803A); excavation, grading, and fill (Sections 1804 and 1804A); damp-proofing and water-proofing (Sections 1805 and 1805A); allowable load-bearing values of soils (Sections 1806 and 1806A); the design of foundation walls, retaining walls, and embedded posts and poles (Sections 1807 and 1807A), and foundations (Sections 1808 and 1808A); and design of shallow foundations (Sections 1809 and 1809A) and deep foundations (Sections 1810 and 1810A). Chapter 33 of the 2019 CBC includes requirements for safeguards at work sites to ensure stable excavations and cut or fill slopes (Section 3304).

Local

City of Vista General Plan

The City of Vista General Plan has goals and policies related to the geologic hazards. The main goal is to reduce the damage, loss, and risk to the community caused by seismic and other geologic hazards.

Development Code Title 16

Title 16 of the City of Vista Development Code provides the building codes for all new construction in the City. The City has adopted the California Building Standards Code, California Code of Regulations, Title 24, Part 2, Volumes 1 and 2, inclusive of all current and futures appendixes and amendments, as published and adopted by the California Building Standards Code.

6.2.3 Existing Conditions

Regional Geology

The City is located in the Peninsular Ranges geomorphic province which is characterized by a series of mountain ranges separated by northwest trending valleys that run subparallel to the San Andreas Fault (CGS 2002). The trend of topography is similar to the Coast Ranges to the north, but the geology resembles more closely to the Sierra Nevada, with granitic rock intruding into older metamorphic rocks. The Peninsular Ranges extend into lower California and are bound on the east by the Colorado Desert and to the north by the Transverse Ranges. The province includes the Los Angeles Basin as well as the island group (Santa Catalina, Santa Barbara, San Clemente and San Nicolas islands), together with the surrounding continental shelf (cut by deep submarine fault troughs). The City is located at the western foothills of the San Marcos Mountains which are primarily composed of San Marcos Gabbro, a dark, basic intrusive rock that weathers into reddish Las Posas clay. The redness of the clay is due to a high iron and magnesium content. The City is primarily underlain by tonalite, an intrusive rock, but the Santiago Formation (composed of sandstone, conglomerate, and mudstone) can be found along the west and southern edges of the City. While there are no known faults that intersect the City, the region is considered seismically active.

Seismicity

The City, as well as the general southern California region, are considered seismically active areas. The United States Geological Survey's Working Group on California Earthquake Probabilities forecasted in 2014 that the southern California region has a 93 percent likelihood of experiencing a magnitude 6.7 earthquake or greater over a 30-year period (USGS 2015). An earthquake could occur on any of the known faults in the region with well documented seismic history or even, as was the case for the 1994 Northridge earthquake, on a previously unrecognized fault. The California Geological Survey (CGS) (CGS 2018) classifies faults as follows:

- Holocene-active faults, which are faults that have moved during the past approximate 11,700 years. These faults are capable of surface rupture.
- Pre-Holocene faults, which are faults that have not moved in the past 11,700 years. This class of fault may be capable of surface rupture but is not regulated under the Alquist-Priolo Earthquake Fault Zoning Act of 1972, which regulates construction of buildings to be used for human occupancy.

- Age-undetermined faults, which are faults where the recency of fault movement has not been determined.

Holocene-active faults have been responsible for large historical earthquakes in Southern California, including the 1971 San Fernando earthquake (moment magnitude [Mw] 6.6), the 1992 Landers earthquake (Mw 7.3), the 1952 Kern County earthquake (Mw 7.5), the 1910 Elsinore earthquake (Magnitude 6), and the 1933 Long Beach earthquake (Mw 6.4). The Southern California region also includes blind thrust faults, which are faults that do not rupture all the way up to the surface but are capable of substantial earthquakes. Examples include the 1987 Whittier Narrows earthquake (Mw 5.9) and the 1994 Northridge earthquake (Mw 6.7).

Prominent Holocene-active and pre-Holocene faults in the project region include the Elsinore, San Jacinto, Newport-Inglewood-Rose Canyon, Coronado, and San Andreas faults, as shown in **Figure 6.2.** As noted above, no Holocene-active faults intersect the City's jurisdictional limits. The nearest Holocene-active fault to the City is the Rose Canyon fault which is located offshore approximately 12 miles to the southwest. Ground displacement caused by fault rupture is considered most likely to occur on Holocene Active faults.

Liquefaction and Lateral Spreading

Liquefaction occurs when saturated unconsolidated soils are subjected to groundshaking and the increased pore pressure causes the soils to behave in more of a liquid state than solid, resulting in the soil's inability to support overlying structures. Liquefaction typically occurs in areas where the groundwater is less than 50 feet from the surface and where the soils are composed of poorly consolidated fine to medium sand. Lateral spreading consists of lateral movement of gently to steeply sloping saturated soil deposits that is caused by earthquake-induced liquefaction. The Seismic Hazards Mapping Act of 1990 directs the California Geological Survey to identify and mitigate seismic hazards; however, the City has not yet been delineated by CGS for liquefaction susceptibility. According to mapping compiled by San Diego County, the City does not include areas identified as having liquefaction layers (San Diego County 2022). However, unconsolidated alluvial deposits along the City's larger drainages and in valley bottoms may be susceptible to liquefaction.

Other Hazards

Landslides

Slope failures, commonly referred to as landslides, include many phenomena that involve the downslope displacement and movement of material, either triggered by static (i.e., gravity) or dynamic (i.e., earthquake) forces. A slope failure is a mass of rock, soil, and debris displaced downslope by sliding, flowing, or falling. Landslides may occur on slopes of 15 percent or less; however, the probability is greater on steeper slopes that exhibit old landslide features such as scarps, slanted vegetation,

and transverse ridges. Landslide-susceptible areas are characterized by steep slopes and downslope creep of surface materials. Debris flows consist of a loose mass of rocks and other granular material that, if saturated and present on a steep slope, can move downslope. The rate of rock and soil movement can vary from a slow creep over many years to a sudden mass movement. Mudflows are another type of soil failure which occurs following heavy rainfalls and little to no brush, tree, or ground cover to hold the soil (a condition that can occur following a wildfire), causing mud to form and flow down-slope.

Susceptibility to landslides is dependent on a number of variables including geology, structure, and amount of groundwater in the slope affect slope failure potential, as do external processes (i.e., climate, topography, slope geometry, and human activity). The factors that contribute to slope movements include those that decrease the resistance in the slope materials and those that increase the stresses on the slope.

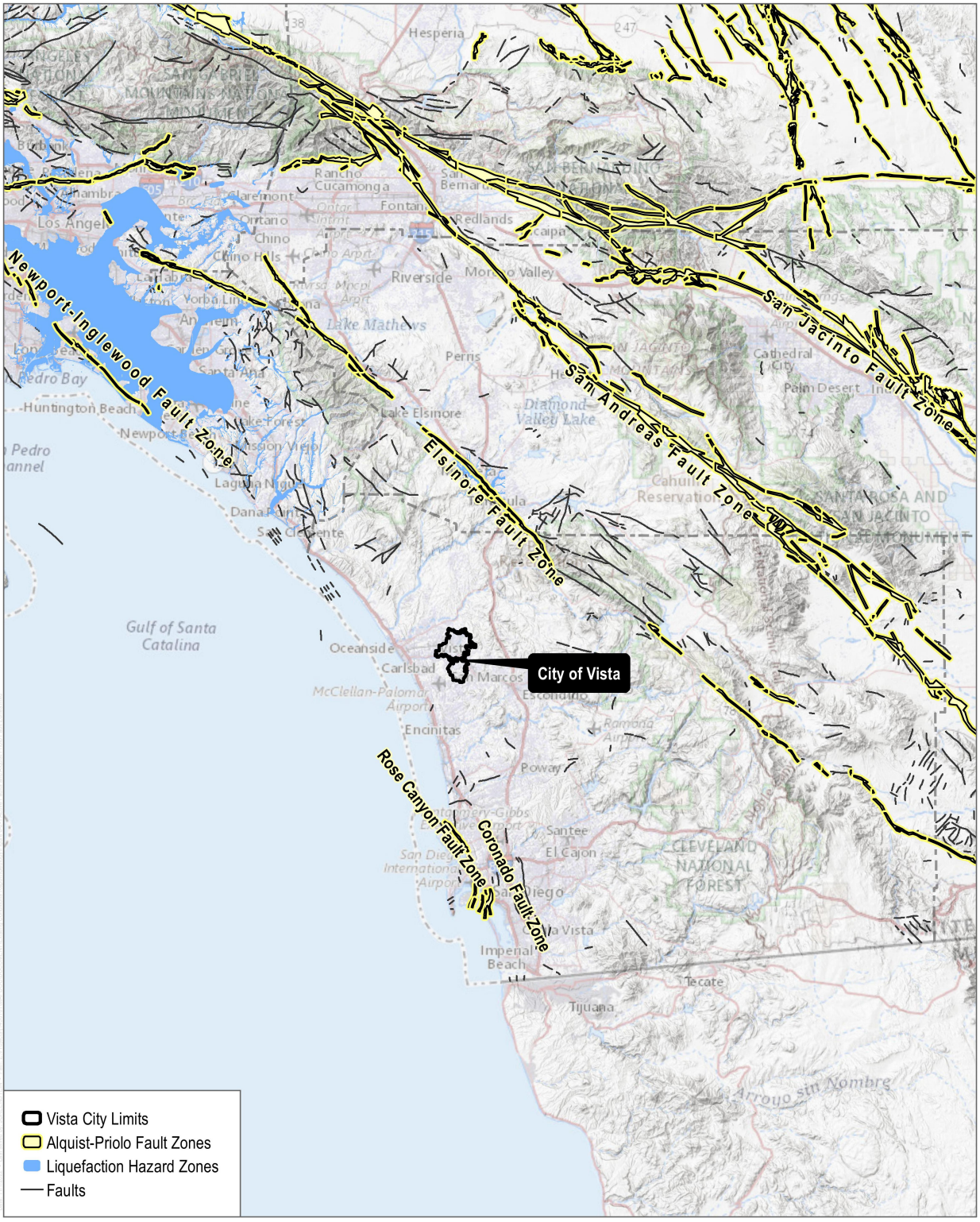
Subsidence

Land subsidence is the downward settlement of a large area of land, which can potentially result in surface infrastructure damage. Historical subsidence in California has resulted from several processes, including oil and gas production, groundwater withdrawal, hydrocompaction, and peat oxidation. Subsidence associated with water or gas withdrawal occurs when compressible subsurface deposits are depressurized as a result of removing water or gas and can no longer support the weight of the overlying material. In the case of groundwater withdrawal, subsidence occurs primarily when groundwater withdrawal from confined aquifers results in the depressurization and dewatering of compressible clay layers. Subsidence generally occurs slowly and can continue for a period of several years after pumping has terminated, as water continues to migrate from compressible clay layers. The City of Vista is not underlain by an oil field nor in an area of ground subsidence that is caused by groundwater pumping (USGS 2022).

Expansive Soils

Expansive soils tend to swell with seasonal increases in soil moisture in the winter months and shrink as soils become drier in the summer months. Repeated shrinking and swelling of the soil can lead to stress and damage of structures, foundations, fill slopes, and other associated facilities. Expansive soils owe their characteristics to the presence of swelling clay minerals. The presence of expansive soils is generally only determined by a site-specific evaluation of underlying soils that would occur as part of a geotechnical evaluation.

Figure 6.2: Active Faults And Alquist Priolo Fault Zones



6.3 Flood Hazards

This section addresses the flood hazard conditions within the City and the potential risk these conditions pose.

6.3.1 Findings

- Vista includes areas that are susceptible to flooding with the primary flood prone areas located along existing drainages (e.g., Buena Vista, Buena, and Agua Hedionda Creeks).
- Development proposed within an identified flood hazard area is required to adhere to Development Code 16.48, Flood Area Construction Regulations. These regulations require that a development permit be approved by the Floodplain Administrator, that the permit must include an analysis of hydrology impacts, and that future projects located in an existing floodplain must be able to demonstrate that they would not be at risk from flooding (e.g., flood protection could be ensured by elevating residences to or above base flood levels).

6.3.2 Regulatory Setting

Federal

Federal Emergency Management Agency

The Federal Emergency Management Agency (FEMA) is the primary federal agency with the responsibility of administering programs and coordinating with communities to establish effective floodplain management standards. FEMA is responsible for developing the Flood Insurance Rate Map, which delineates Special Flood Hazard Areas and flood risk zones. State and local agencies are responsible for implementing regulations, ordinances, and policies in compliance with FEMA requirements to address floodplain management issues.

National Flood Insurance Act

The National Flood Insurance Act of 1968 established the National Flood Insurance Program to provide flood insurance within communities that adopt floodplain management programs to mitigate future flood losses. The Act also requires identification of all floodplain areas within the United States and the establishment of flood risk zones within those areas. FEMA is the primary agency responsible for administering programs and coordinating with communities to establish effective floodplain management standards. FEMA is responsible for preparing Flood Insurance Rate Maps that delineate the areas of known special flood hazards and their risk applicable to the community.

Executive Order 11988

Under Executive Order 11988 – Floodplain Management, the FEMA is responsible for management of floodplain areas defined as the lowland and relatively flat areas

adjoining inland and coastal waters subject to a 1 percent or greater chance of flooding in any given year (the 100-year floodplain). FEMA requires that local governments covered by federal flood insurance pass and enforce a floodplain management ordinance that specifies minimum requirements for any construction within the 100-year floodplain. The Order addresses floodplain issues related to public safety, conservation, and economics. It generally requires federal agencies constructing, permitting, or funding a project in a floodplain to avoid incompatible floodplain development, be consistent with the standards and criteria of the National Flood Insurance Program, and restore and preserve natural and beneficial floodplain values.

Local

City of Vista General Plan

The City of Vista General Plan has goals and policies related to the flood hazards. The main goal is to reduce damage, losses, and the risk to the community from flooding, other forms of severe weather, dam inundation, and other hydrologic hazards.

City of Vista Development Code

Any development project proposing to place housing or other structures within the existing 100-year flood zones are subject to regulations by the City under the Flood Area Construction Regulations (Development Code 16.48). These regulations require that a development permit be approved by the Floodplain Administrator, that the permit must include an analysis of hydrology impacts, and that future projects located in an existing floodplain must be able to demonstrate that they would not be at risk from flooding (e.g., flood protection could be ensured by elevating residences to or above base flood levels).

6.3.3 Existing Conditions

General Flooding

Flooding is a general or temporary condition of partial or complete inundation of normally dry land areas. Flooding is commonly associated with the overflow of natural rivers or streams, but can also occur near stormwater diversion facilities, dams, or in low-lying areas with insufficient stormwater drainage facilities. Flood hazards can result from intense rain and/or failure of flood control facilities, such as dams, levees, or drainage channels. Flood hazard areas within the City, as delineated by the Federal Emergency Management Agency (FEMA), are primarily located along channels, creeks, and streams, including Buena Vista, Buena, and Agua Hedionda Creeks and a portion of their tributaries. Several factors determine the severity of floods including rainfall intensity and duration.

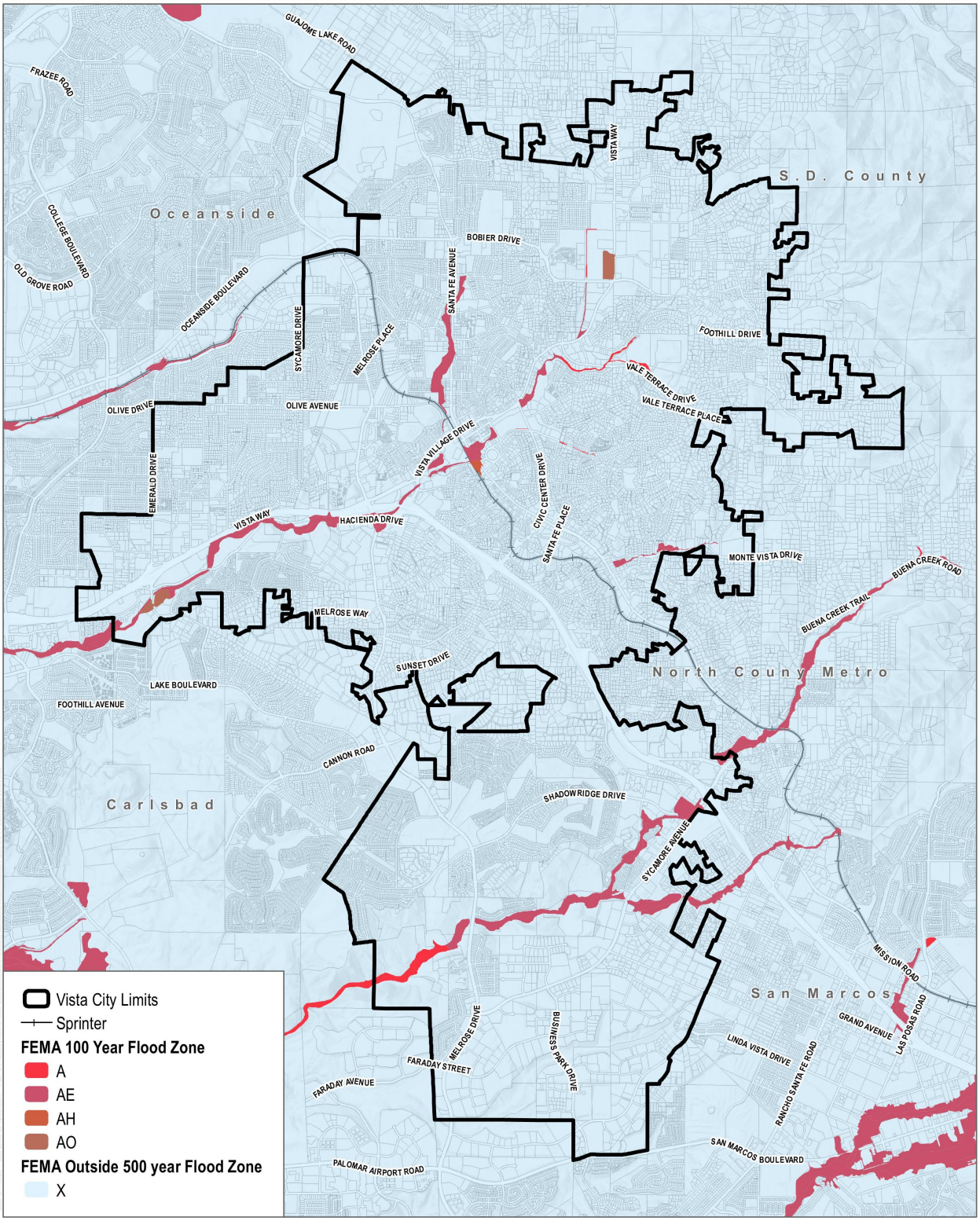
FEMA compiles data to produce flood zone mapping known as a Flood Insurance Rate Map (FIRM) as part of the National Flood Insurance Program. Flood hazard areas identified on the FIRM are identified as a Special Flood Hazard Area (SFHA).

SFHA are defined as the area that will be inundated by the flood event having a 1 percent chance of being equaled or exceeded in any given year, more commonly referred to as the base flood or 100-year flood. The areas between the limits of the base flood and the 0.2 percent-annual-chance are known as the 500-year flood zone. The areas of minimal flood hazard, which are the areas outside the SFHA and higher than the elevation of the 500-year flood. As shown in **Figure 6.3,** FEMA Flood Zones, portions of the City are within 100-year flood Zones A, without base flood elevations, and AE, with base flood elevations below three feet. However, the flood zone areas are generally confined to within existing drainages.

According to the City's Hazard Mitigation Plan, the City contains several significant floodplains and is subject to widespread flooding (City of Vista 2018). Throughout San Diego County, the areas surrounding the river valleys are susceptible to flooding because of the wide, flat floodplains surrounding riverbeds, the high variability in the runoff, and the numerous structures that are built in the floodplains (County of San Diego 2018). Based on FEMA records, the San Diego region has not suffered severe repetitive losses from flooding (defined as at least 4 damage claims exceeding $5,000). The City of Vista has only experienced 2 repetitive losses (defined as damage claims of at least $1,000) since 1974, one of the lower number of occurrences in the county (San Diego County 2018).

According to the Dam Breach Inundation maps, compiled by the Department of Water Resources, Division of Safety of Dams, there are no dam inundation areas that affect the City (DWR 2022).

Figure 6.3: FEMA Flood Zones



6.4 Hazardous Materials

This section addresses hazardous materials, including potential sources, historical sources, and contaminated sites in the City of Vista.

6.4.1 Findings

- The use, storage, transportation, and disposal of hazardous materials is widespread throughout the City in existing industrial, commercial, and residential land uses.
- According to a search of environmental databases, there are documented release sites in the City, however the majority of them are requiring no further action.
- Exposure to hazardous building materials is also possible in activities that require demolition of older structures that were built during different environmental regulation.
- Existing regulatory requirements around the use, storage, transportation, and disposal of hazardous materials limits the potential exposure hazardous materials and provides the measures to respond to unauthorized releases.

6.4.2 Regulatory Setting

Federal

The Environmental Protection agency (EPA) is the primary federal agency responsible for enforcement and implementation of federal laws and regulations pertaining to hazardous materials. Applicable federal regulations pertaining to hazardous materials are contained mainly in the Code of Federal Regulations (CFR) Titles 29, 40, and 49. Hazardous materials, as defined in the CFR, are listed in 49 CFR 172.101. These laws and associated regulations include specific requirements for facilities that generate, use, store, treat, and/or dispose of hazardous materials. EPA also provides oversight and supervision of Federal Superfund investigation/remediation projects, evaluates remediation technologies, and develops hazardous materials disposal restrictions and treatment standards. Management of hazardous materials is governed by the following laws:

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (commonly known as Superfund) established prohibitions and requirements concerning closed and abandoned hazardous waste sites; provided for liability of persons responsible for releases of hazardous waste at these sites; and established a trust fund to provide for cleanup when no responsible party could be identified. Under CERCLA, EPA has the authority to hold parties responsible for releases of hazardous substances and require their cooperation in site remediation. Superfund Amendments and Reauthorization Act (SARA Title III), the Emergency Planning and Community Right-to-Know Act, requires companies to declare

potential toxic hazards to ensure that local communities can plan for chemical emergencies. EPA maintains a National Priority List of uncontrolled or abandoned hazardous waste sites identified for priority remediation under the Superfund program. EPA also maintains the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database, which contains information on hazardous waste sites, potential hazardous waste sites, and remedial activities across the nation.

CERCLA was amended in 1986 under the Superfund Amendments and Reauthorization Act (SARA) which emphasized the importance of permanent remedies and innovative treatment technologies to clean up hazardous waste sites. SARA also required Superfund actions to consider the standards and requirements found in other state and federal environmental laws and regulations; provided new enforcement authorities and settlement tools; increased involvement of the states in every phase of the Superfund program; increased the focus on human health problems posed by hazardous waste sites; encouraged greater citizen participation in making decisions on how sites should be cleaned up; and increased the size of the trust fund.

Resource Conservation and Recovery Act

Hazardous wastes, although included in the definition of hazardous materials and hazardous substances, are regulated separately under the Resource Conservation and Recovery Act (RCRA) that was initially adopted in 1976. A waste can legally be considered hazardous if it is classified as ignitable, corrosive, reactive, toxic, or if it is a "listed" waste by the EPA. RCRA also gives EPA or an authorized state the authority to conduct inspections to ensure that individual facilities are in compliance with regulations, and to pursue enforcement action if a violation is discovered. EPA can delegate its responsibility to a state if the state's regulations are at least as stringent as the federal ones. RCRA was updated in 1984 by the passage of the Federal Hazardous and Solid Waste Amendments, which required phasing out land disposal of hazardous waste. Title 22, Section 66261.24 of the California Code of Regulations (CCR) (i.e., 22 CCR 66261.24) defines characteristics of toxicity. Under RCRA, EPA regulates hazardous waste from the time that the waste is generated until its final disposal ("cradle to grave").

Federal Insecticide, Fungicide, and Rodenticide Act

The federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) (7 USC 136 et seq.) provides federal control of pesticide distribution, sale, and use. EPA was given authority under FIFRA to study the consequences of pesticide usage and require users (e.g., farmers, utility companies) to register when purchasing pesticides. Later amendments to the law required users to take exams for certification as applicators of pesticides. All pesticides used in the United States must be registered (licensed) by EPA. Registration assures that pesticides will be properly labeled and that if used

in accordance with specifications, will not cause unreasonable harm to the environment.

Toxic Substances Control Act of 1976

The Toxic Substances Control Act of 1976 (15 USC 2605) banned the manufacturing, processing, distribution, and use of Polychlorinated Biphenyl (PCBs) in totally enclosed systems. PCBs are considered hazardous materials because of their toxicity; and they have been shown to cause cancer in animals, along with effects on the immune, reproductive, nervous, and endocrine systems, and studies have shown evidence of similar effects in humans (EPA 2004). The EPA Region 9 PCB Program regulates remediation of PCBs in several states, including California. 40 CFR Section 761.30(a)(1)(vi)(A) states that all owners of electrical transformers containing PCBs must register their transformers with EPA. Specified electrical equipment manufactured between July 1, 1978, and July 1, 1998, that does not contain PCBs, must be marked by the manufacturer with the statement "No PCBs" (Section 761.40[g]). Transformers and other items manufactured before July 1, 1978, containing PCBs must be marked as such.

Occupational Health and Safety Administration (OSHA)

The Occupational Safety and Health Administration (OSHA) of the U.S. Department of Labor is responsible for enforcement and implementation of Federal laws and regulations pertaining to worker health and safety. Workers at hazardous waste sites must receive specialized training and medical supervision according to the Hazardous Waste Operations and Emergency Response (HAZWOPER) regulations (29 CFR 1910.120).

Hazardous Waste Operations and Emergency Response (HAZWOPER)

HAZWOPER requirements include federal regulations that involve procedures for clean-up operations required by a governmental body, whether Federal, state, local, or other involving hazardous substances that are conducted at uncontrolled hazardous waste sites. This includes the EPA's National Priority Site List (NPL), state priority site lists, sites recommended for the EPA NPL, and other initial investigations of government identified sites which are conducted before the presence or absence of hazardous substances has been ascertained. A person who is engaged in work with any potential for exposure to hazardous substances would need to comply with HAZWOPER regulations.

Hazardous Materials Transportation Act

The transportation of hazardous materials is regulated by the Hazardous Materials Transportation Act (HMTA), which is administered by the Research and Special Programs Administration (RSPA) of United States Department of Transportation (USDOT). HMTA provides USDOT with a broad mandate to regulate the transport of hazardous materials, with the purpose of adequately protecting the nation against risk to life and property, which is inherent in the commercial transportation of

hazardous materials. The HMTA governs the safe transportation of hazardous materials by all modes, excluding bulk transportation by water. RSPA carries out these responsibilities by prescribing regulations and managing a user-funded grant program for planning and training grants for states and Indian tribes. USDOT regulations that govern the transportation of hazardous materials are applicable to any person who transports, ships, causes to be transported or shipped, or who is involved in any way with the manufacture or testing of hazardous materials packaging or containers. USDOT regulations pertaining to the actual movement govern every aspect of the movement, including packaging, handling, labeling, marking, placarding, operational standards, and highway routing. Additionally, USDOT is responsible for developing curriculum to train for emergency response and administers grants to states and Indian tribes for ensuring the proper training of emergency responders. HMTA was enacted in 1975 and was amended and reauthorized in 1990, 1994, and 2005.

State

California Environmental Protection Agency and Unified Program

California's Secretary for Environmental Protection has established a unified hazardous waste and hazardous materials management regulatory program (Unified Program) as required by Senate Bill 1082 (1993).

The California Environmental Protection Agency (Cal/EPA) oversees the implementation of the United Program. The Unified Program consolidates, coordinates, and makes consistent the administrative requirements, permits, inspection and enforcement activities of six environmental and emergency response programs. The state agencies responsible for these programs set the standards for their program while local governments implement the standards.

The Unified Program is implemented at the local level by 86 government agencies certified by the Secretary of Cal/EPA. These Certified Unified Program Agencies (CUPAs) have typically been established as a function of a local environment health or fire agency. Some CUPAs also have contractual agreements with one or more other local agencies called "participating agencies (PAs)," which implement one or more program elements, under the oversight of the CUPA.

The state agency partners involved in the Unified Program have the responsibility of setting program element standards, working with Cal/EPA on ensuring program consistency and providing technical assistance to the CUPAs and PAs. The following state agencies are involved with the United Program:

- **California Environmental Protection Agency (Cal/EPA).** The Secretary of the California Environmental Protection Agency is directly responsible for coordinating the administration of the Unified Program. The Secretary certified Unified Program Agencies. The Secretary has certified 86 CUPAs to

date. These 86 CUPAs carry out the responsibilities previously handled by approximately 1,300 state and local agencies.

- **Department of Toxic Substances Control (DTSC).** The Department of Toxic Substances Control provides technical assistance and evaluation for the hazardous waste generator program including onsite treatment (tiered permitting).
- **Governor's Office of Emergency Services (OES).** The Governor's Office of Emergency Services is responsible for providing technical assistance and evaluation of the Hazardous Material Release Response Plan (Business Plan) Program, the California Accidental Release Response Plan (CalARP) Programs and carrying out FEMA requirements to prepare the State Multi-Hazard Mitigation Plan also known as the State Hazard Mitigation Program.
- **Office of the State Fire Marshal (OSFM).** The Office of the State Fire Marshal is responsible for ensuring the implementation of the Aboveground Petroleum Storage Act (APSA). They are also responsible for oversight of the Hazardous Material Management Plans and the Hazardous Material Inventory Statement Programs. These programs tie in closely with the Business Plan Program.
- **State Water Resources Control Board (SWRCB).** The State Water Resources Control Board provides technical assistance and evaluation for the underground storage tank program.

Hazardous Waste Control Act

The hazardous waste management program enforced by DTSC was created by the Hazardous Waste Control Act (California Health and Safety Code Section 25100 et seq.), which is implemented by regulations described in CCR Title 22. The state program thus created is similar to, but more stringent than, the federal program under RCRA.

Unified Program Senate Bill 1082

California's Secretary for Environmental Protection has established a unified hazardous waste and hazardous materials management regulatory program (Unified Program) as required by Senate Bill 1082 (1993). The Unified Program consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities for the following environmental programs:

- Hazardous Materials Release Response Plans (Business Plan) Program;
- California Accidental Release Prevention (CalARP) Program;
- Underground Storage Tank Program;

- Aboveground Petroleum Storage Act (APSA) Program requirements for spill prevention, control, and countermeasure plans;
- Hazardous Waste Generator and Onsite Hazardous Waste Treatment (tiered permitting) Programs; and
- California Uniform Fire Code: Hazardous Material Management Plans and Hazardous Material Inventory Statements. Under this code, main petroleum and natural gas pipeline locations are considered a source of potential contamination and construction worker hazards. The pipelines are described in the Section 10.3 Energy/Mineral Resources of this document.

The six environmental programs within the Unified Program are implemented at the local level by local agencies, known as Certified Unified Program Agencies (CUPAs). CUPAs carry out the responsibilities previously handled by approximately 1,300 state and local agencies, providing a central permitting and regulatory agency for permits, reporting, and compliance enforcement. The San Diego County Department Environmental Health (SDCDEH) is the designated CUPA in San Joaquin County.

California Department of Industrial Relations, Division of Occupational Health Administration

The California Department of Industrial Relations, Division of Occupational Safety and Health Administration (Cal/OSHA), assumes primary responsibility for developing and enforcing workplace safety regulations within the state. Cal/OSHA standards are more stringent than Federal OSHA regulations and are presented in CCR Title 8. Standards for workers dealing with hazardous materials include practices for all industries (General Industry Safety Orders). Specific practices are described for construction and hazardous waste operations and emergency response. Cal/OSHA conducts on-site evaluations and issues notices of violation to enforce necessary improvements to health and safety practices.

State Water Resources Control Board

The State Water Resources Control Board (SWRCB) has primary responsibility to protect water quality and supply through their respective Regional Water Quality Control Boards (RWQCB). As described in Section 10.2, Water Resources, the RWQCB is authorized by the Porter-Cologne Water Quality Control Act of 1969 to protect the waters of the state. The RWQCB provides oversight for sites where the quality of groundwater or surface waters is threatened. Extraction and disposal of contaminated groundwater due to investigation/remediation activities or due to dewatering during construction require a permit from the RWQCB if the water were discharged to storm drains, surface water, or land.

California Code of Regulations Title 23, Chapter 15, requires that non-hazardous liquid (greater than 42 gallons) or solid (greater than 10 cubic yards) waste must be

reported to the RWQCB. Domestic wastewater and refuse releases are required to be reported under different non-Chapter 15 regulations.

Regional

San Diego County Department of Environmental Health

The San Diego County Department of Environmental Health (SDCDEH) regulates and enforces state UST and AST installation and monitoring requirements, including permitting and inspecting, for businesses within the county, including those in Vista. The County operates a Site Assessment Mitigation program to mitigate the release of contaminant materials. The SDCDEH is also responsible for administering the state's Leaking Underground Fuel Tank program. The purpose of the program is to oversee the proper assessment and remediation of contaminants released from USTs.

Local

City of Vista General Plan

The City of Vista General Plan has goals and policies related to the flood hazards. The main goal is to provide for the safe use and disposal of hazardous materials and wastes to protect life and property from exposure.

City of Vista Development Code, Title 18, Zoning Ordinance

The Vista Community Development Department, Planning Division, enforces the Zoning Ordinance as part of the development entitlement and permitting processes. The Zoning Ordinance helps ensure that incompatible land uses (for example, residential and industrial) are appropriately separated geographically. The Community Development Department, Building Division, requires projects to undergo plan reviews and/or building inspections prior to issuance of building permits or certificates of occupancy in order to determine that structures meet minimum safety, health, and fire standards.

6.4.3 Existing Conditions

Definitions

A material is considered hazardous if it appears on a list of hazardous materials prepared by a federal, state, or local agency, or if it has characteristics defined as hazardous by such an agency. Factors that influence the health effects of exposure to hazardous material include the dose to which the person is exposed, the frequency of exposure, the exposure pathway, and individual susceptibility.

The California Code of Regulations (CCR) defines a hazardous material as a substance that, because of physical or chemical properties, quantity, concentration, or other characteristics, may either: (1) cause an increase in mortality or an increase in serious, irreversible, or incapacitating illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored,

transported or disposed of, or otherwise managed (CCR, Title 22, Division 4.5, Chapter 10, Article 2, Section 66260.10).

Hazardous wastes are defined in the same manner. Hazardous wastes are hazardous materials that no longer have practical use, such as substances that have been discarded, discharged, spilled, contaminated, or are being stored prior to proper disposal. Hazardous materials and hazardous wastes are classified according to four properties: toxicity, ignitability, corrosivity, and reactivity (CCR, Title 22, Chapter 11, Article 3), which are defined in the CCR, Title 22, Sections 66261.20-66261.24.

Potential Receptors/Exposure

The sensitivity of potential receptors in the areas of known or potential hazardous materials contamination is dependent on several factors, the primary factor being an individual's potential pathway for exposure. Exposure pathways include external exposure, inhalation, and ingestion of tainted air, water, or food. The magnitude, frequency, and duration of human exposure can cause a variety of health affects ranging from short term acute symptoms or long-term chronic affects. Potential health effects from exposure can be evaluated in a health risk assessment. The principle elements of exposure assessments typically include:

- Evaluation of the fate and transport processes for hazardous materials at a given site;
- Identification of potential exposure pathways;
- Identification of potential exposure scenarios;
- Calculation of representative chemical concentrations; and
- Estimation of potential chemical uptake.

Hazardous Building Materials Associated with Demolition

Many buildings and structures within the City are of an age where the potential exists for the presence of hazardous building materials. Older buildings can contain building materials that consist of hazardous components such as lead-based paint, asbestos, mercury, and polychlorinated biphenyls (PCBs). When these buildings or structures are demolished for the purpose of renovation or new development, these hazardous building materials can become exposed.

Prior to the United States Environmental Protection Agency (EPA) ban in 1978, lead-based paint was commonly used on interior and exterior surfaces of buildings. Old peeling paint has been found to contaminate near surface soil and exposure to residual lead has resulted in illness in children.

Asbestos is a naturally occurring fibrous material that was extensively used as a fireproofing and insulating agent in building construction before such uses were

banned by the EPA in the 1970s. Asbestos can lead to lung disease by inhaling its tiny fibers.

Spent fluorescent light tubes commonly contain mercury vapors. In February 2004, regulations took effect in California that classified all fluorescent lamps and tubes as a hazardous waste. When these lamps or tubes are broken, mercury is released to the environment. Mercury can also be absorbed through the lungs into the bloodstream and can be washed by rainwater into waterways.

PCBs are organic oils that were formerly used primarily as insulators in many types of electrical equipment including transformers and capacitors. After PCBs were determined to be a carcinogen in the mid to late1970's, the EPA banned PCB use in most new equipment and began a program to phase out certain existing PCB-containing equipment. Fluorescent lighting ballasts manufactured after January 1, 1978, do not contain PCBs and are required to have a label clearly stating that PCBs are not present in the unit. Additional information about these materials is provided in the Regulatory Setting Section below.

Current and Historical Hazardous Materials Uses

While the majority of the City contains residential development, hazardous materials are used throughout the City for light industrial, commercial, and residential purposes, which are regulated by a multiple of agencies at the federal, state, and local government levels. Industrial facilities are present within several business parks in the southern part of the City while dry cleaners, gas stations, and automobile repair facilities are present throughout the City, primarily along main business corridors (East Vista Way, North and South Santa Fe Avenue, and North and South Melrose Drive). These businesses that use hazardous materials and generate hazardous waste are subject to regulations that are intended to protect both the environment and public health and safety from improper use, handling, storage, and transport of hazardous materials and hazardous waste. For example, the U.S. Department of Transportation (DOT) regulates transportation of hazardous materials which is overseen at the state level by the California Department of Transportation (Caltrans).

The San Diego Regional Water Quality Control Board has jurisdiction over water quality issues, including groundwater contamination from historical releases of hazardous materials, while the San Diego County Department of Environmental Health (SDCDEH) oversees and enforces state laws and regulations governing hazardous materials storage under the Hazardous Materials Business Plan program, extremely and acutely hazardous materials under the California Accidental Release Prevention (CalARP) program, hazardous waste generators, hazardous waste treatment, and hazardous substance storage in underground storage tanks (USTs). The SDCDEH also inspects aboveground petroleum storage tanks (ASTs) for compliance with the Spill Prevention Countermeasures and Control Program (SPCC).

Contaminated Sites

During earlier periods of history, environmental regulations were not as stringent as they are today. In the past, there often were releases of hazardous materials into the environment, and in some cases, these hazardous materials can still be present in surface waters, sediments, subsurface soils, and groundwater. Construction methods of underground storage tanks have also evolved over time to be more resilient to releases whereas older single-walled steel underground fuel storage tanks have resulted in releases of petroleum hydrocarbons to the subsurface.

Underground storage tanks (UST) are commonly used for fuel storage and have been for many years. UST design changed over the years after it was discovered that single walled steel tanks can be relatively easily compromised causing a release of petroleum hydrocarbons to the subsurface which can contaminate soil and groundwater. Current UST design typically contains engineering controls such as fiberglass construction which resists corrosion or cathodically-protected steel, double walled construction, and active monitoring controls which reduce the potential for inadvertent releases to the environment.

A regulatory database search of existing sites within the City was conducted for the purpose of this analysis including the State Water Resources Control Board (SWRCB) Geotracker database, Department of Toxic Substances Control's [DTSC's] Envirostor database, and EPA's Superfund Site Information (SWRCB 2022, DTSC 2022, and EPA 2022). The database searches involved a search for listings of sites with documented releases or presence of subsurface contamination of hazardous materials or petroleum products. The databases identified sites that have had reported releases of hazardous materials or waste including active contaminated sites that are currently under assessment and/or remediation. Some of the sites identified on these databases include closed cases because the contamination levels at those facilities or sites were found to be below regulatory thresholds requiring remediation, or remediation has satisfied the regulatory agency overseeing the effort.

Geotracker Database Sites

The GeoTracker database includes sites found on the Spills, Leaks, Investigations, and Cleanups (SLIC) program as well as the Leaking Underground Storage Tank (LUST) program, both of which are overseen by the Regional Water Quality Control Board (RWQCB). The database search results indicated a total of 91 records for the entire City; however, 89 cases have been closed and require no further action based on investigation results (SWRCB 2022). The remaining two open sites (Emerald Mobil Gas Station at 170 N Emerald Drive and Extra Space Storage Redevelopment Project at 1100 E Vista Way) are part of the Cleanup Program and in the site assessment stage with the Extra Space Storage Redevelopment Project also completing interim remedial actions.

Envirostor Database Sites

The Envirostor database includes sites that are overseen by the DTSC and typically involve non-petroleum related releases of hazardous materials or waste. The database search showed a total of 20 records for the City of which 14 had a status listed as closed, withdrawn or no further action required (DTSC 2022). The remaining sites are in varying stages of investigation and evaluation under the voluntary cleanup, military evaluation, and tiered permit.

Federal Superfund Sites

The Federal Superfund program is an environmental program established under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) to clean up abandoned hazardous waste sites. The fund was created to pay for the clean-up of abandoned toxic waste sites. There are no Federal Superfund sites within the City listed in the EPA's database (EPA 2022).

6.5 Noise and Vibration

This section describes the existing noise conditions and the regulatory framework applicable to noise.

6.5.1 Findings

- Noise is defined as loud, unexpected, or an annoying sound. The City of Vista is subjected to a wide variety of noise from various sources such as traffic noise from highways and local roadways, construction operations and construction equipment, aircraft overflights, and railway noise.

6.5.2 Regulatory Setting

Federal

Federal Aviation Administration

The Federal Aviation Administration (FAA), Title 14, Part 150 outlines the procedures, standards, and methodology 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. It provides technical assistance to airport operations, in conjunction with other local, state, and federal authorities, to prepare and execute appropriate noise compatibility planning and implementation programs. The FAA establishes a 65 dBA CNEL as the noise standard associated with aircraft noise. This standard is also generally applied to railroad noise (Federal Aviation Regulations Part 150, Section 150.21).

Federal Noise Control Act of 1972 (Code of Federal Regulations, Title 40)

The Federal Noise Control Act of 1972 Section 204 regulates noise emissions from the operation of construction equipment and facilities. It establishes noise emissions standards for construction equipment and other categories of equipment, and provides standards for the testing, inspection, and monitoring of such equipment. The act also gives states and municipalities primary responsibility for noise control.

Environmental Protection Agency

In its Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety document (otherwise known as the "Levels" document), the U.S. Environmental Protection Agency recommends a noise threshold of 55 dBA L_{dn} for outdoor land uses in residential areas and other noise-sensitive land uses where people spend varying amounts of time in which quiet is a basis for use. Although this guidance is not a regulation, it can serve as a quantified standard for stationary operational noise in the absence of such limits at the state and local jurisdictional levels.

U.S. Department of Housing and Urban Development

CFR Title 24, Section 51 establishes environmental noise criteria and standards for projects receiving HUD funding assistance, subsidy, or insurance. It establishes an interior noise level of 45 dBA L_{dn}.

Federal Highway Administration

CFR Title 23, Part 772 establishes procedures for the abatement of highway traffic noise and construction noise. The purpose of this regulation is to provide procedures for noise studies and noise abatement measures to help protect the public health and welfare, to supply noise abatement criteria, and to establish requirements for information to be given to local officials for use in the planning and design of highways. All highway projects which are developed in conformance with this regulation shall be deemed to be in conformance with the Department of Transportation (DOT) Federal Highway Administration (FHWA) guidelines. Part 772 establishes noise abatement criteria or federally funded highway projects for various land use types.

Federal Transit Administration and Federal Railroad Administration

Although the Federal Transit Administration (FTA) guidelines are intended for federally funded mass transit projects, the impact assessment procedures and criteria included in the FTA Transit Noise and Vibration Assessment Manual (September 2018) are routinely used for projects proposed by local jurisdictions. The FTA and the Federal Railroad Administration (FRA) have published guidelines for assessing the impacts of groundborne vibration associated with rail projects, which have been applied by other jurisdictions to other types of projects. The FTA measure

of the threshold of architectural damage for conventional sensitive structures is 0.2 inches/second PPV.

State

California Noise Control Act of 1973

Sections 46000 through 46080 of the California Health and Safety Code, known as the California Noise Control Act of 1973, declares 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. It also identifies a continuous and increasing bombardment of noise in the urban, suburban, and rural areas. 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 health or welfare.

California Government Code 65300

This state code establishes guidelines for developing noise elements for city and county general plans. The noise element of a general plan is used to identify and appraise any noise problems in the community. The noise element must recognize the guidelines established by the Office of Noise Control in the California Department of Public Health and must analyze and quantify, to the extent practicable (as determined by the legislative body), current and projected noise levels for all major sources of noise. The adopted noise element serves as a guideline for the compliance with the state's noise insulation standards.

Noise Insulations Standards for Multifamily Housing

Chapter 12, Section 1207.4 of CCR Title 24, part 2 of the California Building Code states that interior noise levels attributable to exterior sources shall not exceed 45 dB in any habitable room, consistent with the noise element of the local general plan (which would be 45 dBA CNEL).

Regional

Land Use Compatibility Plans, McClellan-Palomar and Oceanside Municipal Airports

Intended to protect the safety of people, property, and aircraft on the ground and in the air, land use compatibility plans guide property owners and local jurisdictions in determining what types of proposed new land uses are appropriate in the vicinity of airports. The Airport Influence Area (AIA) is used as a guideline when developing land use compatibility plans. Plans include policies that address noise compatibility issues associated with airports and their respective AIA.

Local

The City of Vista Municipal Code

Operational noise impacts for projects are governed by the City of Vista Municipal Code, Section 8.32 (Noise Control). Section 8.32.040 (A) states that for the purpose of controlling noise, the San Diego County Code of Regulatory Ordinances Title 3, Division 6, Chapter 4 relating to the control of noise is adopted, with the exception of the table from Section 36.404 of the County Code and replacing it with the City's own exterior property line noise limits. **Table 6.1** contains the City's exterior property line noise limits.

Table 6.1: City of Vista Applicable Exterior Property Line Noise Levels

Zone	Time	Applicable Limit One-hour Average Sound Level (Decibels)
A-1, E-1, O & OSR	7:00 a.m. - 10:00 p.m.	50
R-1B, MHP	10:00 p.m. - 7:00 a.m.	45
R-M	7:00 a.m. - 10:00 p.m.	55
	10:00 p.m. - 7:00 a.m.	50
C-1, C-2, C-3, , OP, M-U		
and Downtown Specific Plan	7:00 a.m. - 10:00 p.m.	60
	10:00 p.m. - 7:00 a.m.	55
M-1, I-P, all areas of the		
Vista Business Park Specific		
Plan and Specific Plan 14	Any time	70

The County's Noise Ordinance establishes prohibitions for disturbing, excessive, or offensive noise as well as provisions such as sound level limits for the purpose of securing and promoting the public health, comfort, safety, peace, and quiet for its citizens. Planned compliance with sound level limits and other specific parts of the ordinance allows presumption that the noise is not disturbing, excessive, or offensive. Limits are specified depending on the zoning placed on a property (e.g., varying densities and intensities of residential, industrial, and commercial zones). Where two adjacent properties have different zones, the sound level limit at a location on a boundary between two properties is the arithmetic mean of the respective limits for the two zones, except for extractive industries. It is unlawful for any person to cause or allow the creation of any noise that exceeds the applicable limits of the Noise Ordinance at any point on or beyond the boundaries of the property on which the sound is produced. Due to the project's proximity to residential land uses, the applicable exterior noise level limit established by the City is 50 dBA between the hours of 7:00 am and 10:00 pm and 45 dBA between the hours of 10:00 pm and 7:00 am.

The County regulates noise from construction activities by regulating the hours during which construction is conducted. The County Code of Regulatory Ordinances Section 36.408 states that: "Except for emergency work, it shall be unlawful for any person to operate or cause to be operated, construction equipment A) between 7:00 pm and 7:00 am or B) on a Sunday or holiday." The County also places sounds level limitations on construction equipment. The County Code of Regulatory Ordinances Section 36.409 states: "Except for emergency work, it shall be unlawful for any person to operate construction equipment or cause construction equipment to be operated, that exceeds an average sound level of 75 decibels for an eight-hour period, between 7 a.m. and 7 p.m., when measured at the boundary line of the property where the noise source is located or on any occupied property where the noise is being received."

6.5.1 Existing Conditions

Noise and Vibration Characteristics

Noise

Sound may be described in terms of level or amplitude (measured in decibels (dB)), frequency or pitch (measured in hertz (Hz) or cycles per second), and duration (measured in seconds or minutes). The standard unit of measurement of the amplitude of sound is the decibel. Because the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale is used to relate noise to human sensitivity. The A-weighted decibel scale (dBA) performs this compensation by discriminating against low and very high frequencies in a manner approximating the sensitivity of the human ear. Several descriptors of noise (noise metrics) exist to help predict average community reactions to the adverse effects of environmental noise, including traffic-generated noise, on a community. These descriptors include the equivalent noise level over a given period (L_{eq}), the statistical sound level (Ln), the day–night average noise level (L_{dn}), and the community noise equivalent level (CNEL). Each of these descriptors uses units of dBA. **Table 6.2** provides examples of A-weighted noise levels from common sounds. In general, human sound perception is such that a change in sound level of 3 dB is barely noticeable; a change of 5 dB is clearly noticeable; and a change of 10 dB is perceived as doubling or halving of the sound level.

Table 6.2: Typical Sound Levels in the Environment and Industry

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
—	110	Rock band
Jet flyover at 300 meters (1,000 feet)	100	—
Gas lawn mower at 1 meter (3 feet)	90	—
Diesel truck at 15 meters (50 feet), at 80 kph (50 mph)	80	Food blender at 1 meter (3 feet) Garbage disposal at 1 meter (3 feet)
Noisy urban area, daytime gas lawn mower at 30 meters (100 feet)	70	Vacuum cleaner at 3 meters (10 feet)
Commercial area Heavy traffic at 90 meters (300 feet)	60	Normal speech at 1 meter (3 feet)
Quiet urban daytime	50	Large business office Dishwasher, next room
Quiet urban nighttime	40	Theater, large conference room (background)
Quiet suburban nighttime	30	Library
Quiet rural night time	20	Bedroom at night, concert hall (background)
—	10	Broadcast/recording studio
Lowest threshold of human hearing	0	Lowest threshold of human hearing

Notes: dBA = A-weighted decibels; kph = kilometers per hour; mph = miles per hour
Source: Caltrans 2013

L_{eq} is a sound energy level averaged over a specified period (typically no less than 15 minutes for environmental studies). L_{eq} is a single numerical value that represents the amount of variable sound energy received by a receptor during a time interval. For example, a 1-hour L_{eq} measurement would represent the average amount of energy contained in all the noise that occurred in that hour. L_{eq} is an effective noise descriptor because of its ability to assess the total time-varying effects of noise on sensitive receptors. L_{max} is the greatest sound level measured during a designated time interval or event.

Unlike the L_{eq} metrics, L_{dn} and CNEL metrics always represent 24-hour periods, usually on an annualized basis. L_{dn} and CNEL also differ from L_{eq} because they apply a time-weighted factor designed to emphasize noise events that occur during the evening and nighttime hours (when speech and sleep disturbance is of more concern). "Time weighted" refers to the fact that L_{dn} and CNEL penalize noise that occurs during certain sensitive periods. In the case of CNEL, noise occurring during the daytime (7:00 a.m.–7:00 p.m.) receives no penalty. Noise during the evening (7:00 p.m.–10:00 p.m.) is penalized by adding 5 dB, while nighttime (10:00 p.m.–7:00 a.m.) noise is penalized by adding 10 dB. L_{dn} differs from CNEL in that the daytime

period is defined as 7:00 a.m.–10:00 p.m., thus eliminating the evening period. L_{dn} and CNEL are the predominant criteria used to measure roadway noise affecting residential receptors. These two metrics generally differ from one another by no more than 0.5 dB to 1 dB, and as such are often treated as equivalent to one another.

Vibration

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Vibration can be a serious concern, causing buildings to shake and rumbling sounds to be heard. In contrast to noise, vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. Some common sources of vibration are trains, buses on rough roads, and construction activities, such as blasting, pile driving, and heavy earthmoving equipment.

Several different methods are used to quantify vibration. Peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. PPV is most frequently used to describe vibration impacts to buildings and is usually measured in inches per second. The root mean square (RMS) amplitude is most frequently used to describe the effect of vibration on the human body and is defined as the average of the squared amplitude of the signal. Decibel notation (VdB) is commonly used to measure RMS. The decibel notation acts to compress the range of numbers required to describe vibration.

High levels of vibration may cause physical personal injury or damage to buildings. However, vibration levels rarely affect human health. Instead, most people consider vibration to be an annoyance that can affect concentration or disturb sleep. In addition, high levels of vibration can damage fragile buildings or interfere with equipment that is highly sensitive to vibration (e.g., electron microscopes). Most perceptible indoor vibration is caused by sources within buildings, such as operation of mechanical equipment, movement of people, or slamming of doors. Typical outdoor sources of perceptible vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If the roadway is smooth, the vibration from traffic is rarely perceptible.

Sensitive Receptors

Noise- and vibration-sensitive land uses are locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Residences, schools, hospitals, guest lodging, libraries, and some passive recreation areas would be considered noise and vibration sensitive and may warrant unique measures for protection from intruding noise.

Ambient Noise Measurements

Short and long-term measurements were conducted throughout the City on September 7, 2022, to characterize the existing noise levels. Sixteen (16) short-term noise measurements (ST) were taken at locations throughout the City. These locations are depicted as receivers ST1–ST16 on **Figure 6.4**, Noise Measurement Locations. The measured energy-averaged (L_{eq}), maximum (L_{max}), minimum (L_{min}), 90th percentile (L_{90}), 50th percentile (L_{50}), and 10th percentile (L_{10}) noise levels are provided in **Table 6.3**. The primary noise sources at the sites identified in **Table 6.3** consisted of traffic along adjacent roadways, birds, distant aircraft, rustling leaves, distant conversations and yelling, sprinklers, distant back—up alarms, crosswalk signals, distant power tools, and distant industrial noise. As shown in **Table 6.3**, the measured noise levels ranged from approximately 51.1 dBA L_{eq} at ST7 to 70.7 dBA L_{eq} at ST11.

Additionally, four long-term noise measurement locations (LT) were taken throughout the City. These locations are depicted as receivers LT1- LT4 on **Figure 6.4**, Noise Measurement Locations. **Table 6.3** through **Table 6.7** contain the L_{eq} for each measured hour, the 24-hour L_{eq}, the highest hourly L_{eq}, the lowest hourly L_{eq}, and the CNEL as measured at each respective long-term noise measurement location.

See **Appendix H** for details regarding noise measurement collection methodology, including field noise measurement data sheets generated for the project, which include photographs and measured levels at each measurement location.

Table 6.3: Measured Outdoor Short-Term Ambient Noise Levels

Tag	Location	Measurement Start and End Times	L_{eq} (dBA)	L_{max} (dBA)	L_{min} (dBA)	L_{90} (dBA)	L_{50} (dBA)	L_{10} (dBA)
ST1	Adjacent to the single-family residence at 923 Emerald Drive	11:00 AM to 11:15 AM	69.8	76.5	59.2	59.9	68.4	73.1
ST2	Adjacent to the single-family residence at 2158 Opal Ridge	10:10 AM to 10:25 AM	58.7	67.3	43.1	44.0	56.2	62.6
ST3	Adjacent to the commercial use at 1216 Liberty Way	10:45 AM to 11:00 AM	57.8	66.3	46.8	48.7	53.7	62.1
ST4	Adjacent to the multi-family residences at 820 Sycamore Avenue	9:00 AM to 9:15 AM	59.8	72.2	50.1	51.1	56.4	62.2
ST5	Adjacent to the multi-family residences at 2144 University Drive	11:15 AM to 11:30 AM	65.7	69.9	61.5	63.2	65.3	67.3
ST6	Adjacent to the multi-family residences at 213 Guajome Street	11:40 AM to 11:55 AM	59.2	67.3	48.6	51.3	56.4	62.9
ST7	Adjacent to the single-family residence at 1124 Cypress Drive	8:00 AM to 8:15 AM	51.1	56.4	46.7	47.4	50.8	53.0
ST8	Adjacent to the commercial building at 723 Olive Avenue	10:30 AM to 10:45 AM	66.1	77.5	56.1	56.7	61.5	68.9
ST9	Adjacent to the single-family residence at 2021 Columbus Way	9:30 AM to 9:45 AM	62.5	70.3	44.7	52.4	60.2	66.2
ST10	Adjacent to the single-family residence at 1198 Drifting Circle	1:00 PM to 1:15 PM	67.6	74.9	45.8	48.3	63.8	72.0
ST11	Adjacent to the single-family residence 1170 Hackamore Road	11:45 AM to 12:00 PM	70.7	75.0	66.4	65.0	70.9	73.8
ST12	Adjacent to the single-family residence at 1553 County Highway S14	9:50 AM to 10:05 AM	70.4	82.8	56.7	59.0	68.2	75.1
ST13	Adjacent to the multi-family residences at 759 Nob Circle	9:15 AM to 9:30 AM	63.1	71.7	52.0	53.9	60.0	67.1
ST14	Next to the commercial building at 206 Main Street	8:30 AM to 8:45 AM	64.3	68.5	49.7	54.1	62.9	67.7
ST15	Located at Wildwood Park, 651 East Vista Way	1:30 PM to 1:45 PM	68.5	76.2	52.9	60.0	66.2	71.2
ST16	Adjacent to the senior center at 1400 Vale Terrace Drive	1:00 PM to 1:15 PM	58.3	66.8	49.6	51.9	55.7	61.3

Notes: L_{eq} = equivalent continuous sound level (time-averaged sound level); L_{max} = maximum sound level during the measurement interval; dBA = A-weighted decibels.

Table 6.4: Measured Long-Term 1 (LT1) Ambient Noise Levels

Hour Beginning	L_{eq} (dBA)
12:00:00 PM	61.0
1:00:00 PM	61.3
2:00:00 PM	65.0
3:00:00 PM	62.7
4:00:00 PM	62.5
5:00:00 PM	68.0
6:00:00 PM	67.3
7:00:00 PM	62.0
8:00:00 PM	60.1
9:00:00 PM	57.5
10:00:00 PM	57.0
11:00:00 PM	53.8
12:00:00 AM	48.5
1:00:00 AM	47.6
2:00:00 AM	45.1
3:00:00 AM	50.3
4:00:00 AM	58.5
5:00:00 AM	62.1
6:00:00 AM	63.7
7:00:00 AM	64.9
8:00:00 AM	63.6
9:00:00 AM	60.7
10:00:00 AM	60.5
Lowest Hourly Average Noise Level: 45.1 dBA L_{eq} at 2:00 AM	
Highest Hourly Average Noise Level: 68.0 dBA L_{eq} eq at 5:00 PM	
23-Hour Average Noise Level: 62.1 dBA $L_{eq\ 24\text{-}Hr}$)	
23-Hour Weighted-Average Noise Level: 66.2 dBA CNEL	

Notes: L_{eq} = equivalent continuous sound level (time-averaged sound level); CNEL = Community Noise Equivalent Level; the LT1 measurement was conducted for 23 hours

Table 6.5: Measured Long-Term 2 (LT2) Ambient Noise Levels

Hour Beginning	L_{eq} (dBA)
10:00:00 AM	63.1
11:00:00 AM	63.4
12:00:00 PM	63.4
1:00:00 PM	62.8
2:00:00 PM	63.6

Table 6.5: Measured Long-Term 2 (LT2) Ambient Noise Levels

Hour Beginning	L_{eq} (dBA)
3:00:00 PM	63.2
4:00:00 PM	63.7
5:00:00 PM	63.1
6:00:00 PM	63.3
7:00:00 PM	63.0
8:00:00 PM	67.7
9:00:00 PM	63.1
10:00:00 PM	61.4
11:00:00 PM	61.9
12:00:00 AM	59.3
1:00:00 AM	56.6
2:00:00 AM	57.1
3:00:00 AM	59.8
4:00:00 AM	59.7
5:00:00 AM	63.3
6:00:00 AM	64.4
7:00:00 AM	65.1
8:00:00 AM	64.5
9:00:00 AM	64.2
Lowest Hourly Average Noise Level: 56.7 dBA L_{eq} at 2:00 AM	
Highest Hourly Average Noise Level: 68.1 dBA L_{eq} at 9:00 PM	
24-Hour Average Noise Level: 63.1 dBA $L_{eq\ 24\text{-}Hr}$)	
24-Hour Weighted-Average Noise Level: 69.2 dBA CNEL	

Notes: L_{eq} = equivalent continuous sound level (time-averaged sound level) ; CNEL = Community Noise Equivalent Level

Table 6.6: Measured Long-Term 3 (LT3) Ambient Noise Levels

Hour Beginning	L_{eq} (dBA)
9:00:00 AM	64.0
10:00:00 AM	68.0
11:00:00 AM	50.1
12:00:00 PM	46.6
1:00:00 PM	59.7
2:00:00 PM	47.8
3:00:00 PM	45.6
4:00:00 PM	45.1
5:00:00 PM	45.0
6:00:00 PM	55.6
7:00:00 PM	43.1
8:00:00 PM	45.8

Table 6.5: Measured Long-Term 2 (LT2) Ambient Noise Levels

Hour Beginning	L_{eq} (dBA)
9:00:00 PM	41.7
10:00:00 PM	43.2
11:00:00 PM	37.9
12:00:00 AM	33.4
1:00:00 AM	34.1
2:00:00 AM	33.9
3:00:00 AM	35.9
4:00:00 AM	37.7
5:00:00 AM	41.4
6:00:00 AM	44.8
7:00:00 AM	48.7
8:00:00 AM	50.5
Lowest Hourly Average Noise Level: 33.4 dBA L_{eq} at 12:00 AM	
Highest Hourly Average Noise Level: 68.0 dBA L_{eq} at 10:00 AM	
24-Hour Average Noise Level: 56.6 dBA $L_{eq\ 24\text{-}Hr}$)	
24-Hour Weighted-Average Noise Level: 56.9 dBA CNEL	

Notes: L_{eq} = equivalent continuous sound level (time-averaged sound level); CNEL = Community Noise Equivalent Level

Table 6.7: Measured Long-Term 4 (LT4) Ambient Noise Levels

Hour Beginning	Leq (dBA)
12:00:00 PM	59.9
1:00:00 PM	51.2
2:00:00 PM	48.2
3:00:00 PM	59.9
4:00:00 PM	54.8
5:00:00 PM	49.5
6:00:00 PM	53.5
7:00:00 PM	45.3
8:00:00 PM	46.5
9:00:00 PM	45.2
10:00:00 PM	45.0
11:00:00 PM	45.0
12:00:00 AM	44.5
1:00:00 AM	44.0
2:00:00 AM	40.8
3:00:00 AM	41.3
4:00:00 AM	39.5

Table 6.7: Measured Long-Term 4 (LT4) Ambient Noise Levels

Hour Beginning	Leq (dBA)
5:00:00 AM	45.2
6:00:00 AM	52.5
7:00:00 AM	53.6
8:00:00 AM	49.8
9:00:00 AM	49.8
10:00:00 AM	50.8
Lowest Hourly Average Noise Level: 39.5 dBA L_{eq} at 4:00 AM	
Highest Hourly Average Noise Level: 59.9 dBA L_{eq} at 12:00 PM	
23-Hour Average Noise Level: 52.2 dBA $L_{eq\ 24\text{-}Hr}$)	
23-Hour Weighted-Average Noise Level: 55.0 dBA CNEL	

Notes: L_{eq} = equivalent continuous sound level (time-averaged sound level); CNEL = Community Noise Equivalent Level; the LT4 measurement was conducted for 23 hours

Transportation Noise

Traffic Noise

Traffic noise is the dominant noise source within the City limits. High traffic volumes on CA-78 and major arterials are the loudest noise sources found within the City due to high traffic volumes. For example, Melrose Way and East Vista Way, both major arterials, carry up to an average of 42,000 vehicles per day (average daily traffic, or ADT) and up to 48,000 vehicles per day, respectively (CR Associates 2022). CA-78 carries up to 119,000 vehicles per day (Caltrans, 2020).

The FHWA's Highway Traffic Noise Prediction Model RD-77-108 was used to estimate the CNEL for existing conditions traffic volumes. Information used in the model included ADT, posted traffic speeds, a "soft" ground type, truck mix percentage (97 percent autos and 3 percent combined trucks for arterials, 95 percent autos and 5 percent combined trucks for CA-78), and day/evening/night mix percentage. Consistent with Caltrans guidance (Caltrans 2013), this analysis assumes 80 percent of the ADT occurs during daytime hours (7:00 a.m. to 7:00 p.m.), 5 percent during the evening (7:00 p.m. to 10:00 p.m.), and 15 percent during the nighttime (10:00 p.m. to 7:00 a.m.).

Table 6.8 shows the existing traffic noise level in CNEL for numerous roadway segments throughout the City. A distance of 75 feet from the centerline was utilized for consistency with the City's previous General Plan update. **Figure 6.5**, Noise Contours, contains the existing traffic noise contours for the studied roadways. Attachment B in **Appendix H** contains the traffic noise model worksheets used to calculate existing traffic noise levels.

Table 6.8: Existing Traffic Noise Levels

Roadway	Segment		Existing (dBA CNEL) @ 75 feet from centerline
	From	To	
N. Santa Fe Ave.	Osborne St.	Museum Way	68.0
	Museum Way	Taylor St.	68.0
	Taylor St.	Bobier Dr.	68.0
	Bobier Dr.	California Ave.	66.2
	California Ave.	Vista Village Dr.	66.4
S. Santa Fe Ave.	Vista Village Dr.	Civic Center Dr.	64.7
	Civic Center Dr.	City Boundary	65.9
N. Melrose Dr.	City Boundary	North Ave.	71.0
	North Ave.	Olive Ave.	71.0
	Olive Ave.	Ascot Dr.	71.4
	Ascot Dr.	W. Vista Way	70.0
S. Melrose Dr.	W. Vista Way	SR-78 Off-Ramp	70.2
	SR-78 Off-Ramp	Hacienda Dr.	70.2
	Hacienda Dr.	Matagual Dr.	69.4
	Matagual Dr.	Sunset Dr.	70.3
	Sunset Dr.	Cannon Rd.	70.9
	Cannon Rd.	Longhorn Dr. / Live Oak Rd.	71.0
	Longhorn Dr./Live Oak Rd.	Shadowridge Dr.	70.9
	Shadowridge Dr.	Sycamore Ave.	72.3
	Sycamore Ave.	Faraday Ave.	73.1
	Faraday Ave.	City Boundary	72.9
E. Vista Way	Taylor St.	City Boundary	68.5
	Taylor St.	E. Bobier Dr./Foothill Dr.	68.5
	E. Bobier Dr./Foothill Dr.	Williamstown St.	68.0
	Williamstown St.	Anza Ave./Vale Terrace Dr.	68.0
	Anza Ave./Vale Terrace Dr.	Townsite Dr.	69.2
	Townsite Dr.	Hillside Terrace/Civic Center Dr.	69.2
Emerald Dr.	Olive Ave.	Date St.	66.5
	Date St.	West Dr.	67.1
	West Dr.	SR-78 WB Ramps	67.4
	SR-78 WB Ramps	SR-78 EB Ramps	68.2
	SR-78 EB Ramps	Hacienda Dr.	68.2
Civic Center Dr.	Vista Village Dr./E. Vista Way	Eucalyptus Ave.	67.1
	Eucalyptus Ave.	S. Santa Fe Ave.	67.1
	S. Santa Fe Ave.	SR-78 WB Ramps	67.9
	SR-78 WB Ramps	SR-78 EB Ramps	65.9
	SR-78 EB Ramps	Seaview Pl./Crestview Rd.	61.3
Sunset Dr.	Seaview Pl./Crestview Rd.	Crestview Rd.	57.2

Table 6.8: Existing Traffic Noise Levels

Roadway	Segment		Existing (dBA CNEL) @ 75 feet from centerline
	From	To	
Sycamore Ave.	SR-78 WB Ramps	City Boundary	69.2
	SR-78 WB Ramps	SR-78 EB Ramps	70.6
	SR-78 EB Ramps	Watson Way/Hibiscus Ave.	71.5
	Watson Way/Hibiscus Ave.	Green Oak Rd.	70.5
	Greek Oak Rd.	La Mirada Dr.	70.5
	La Mirada Dr.	S. Melrose Dr.	69.4
Business Park Dr.	Sycamore Ave.	Park Center Dr.	65.8
	Park Center Dr.	Poinsettia Ave.	64.7
	Poinsettia Ave.	Palomar Airport Rd.	67.0
Poinsetta Ave.	Business Park Dr.	La Mirada Dr.	66.4
W. Bobier Dr.	Melrose Dr.	N. Santa Fe Ave.	67.5
E. Bobier Dr.	N. Santa Fe Ave.	Anza Ave. (North)	67.0
	Anza Ave. (North)	E. Vista Way	67.0
North Ave.	Maryland Dr.	N. Melrose Dr.	60.6
Olive Ave.	Emerald Dr.	N. Melrose Dr.	62.0
W. Vista Way	Emerald Dr.	Brass Ln.	66.3
	Brass Ln.	SR-78 WB On-Ramp	66.3
	SR-78 WB On-Ramp	Melrose Dr.	66.3
	Melrose Dr.	Vista Village Dr.	66.9
Vista Village Dr.	Hacienda Dr.	SR-78 EB Ramps	67.4
	SR-78 EB Ramps	SR-78 WB Ramps	68.7
	SR-78 WB Ramps	N. Santa Fe Ave.	70.0
	N. Santa Fe Ave.	Hillside Terr./Civic Center Dr.	68.1
Hacienda Dr.	Emerald Dr.	Melrose Dr.	65.5
Mar Vista Dr.	SR-78 EB Ramps	SR-78 WB Ramps	60.1
Shadowridge Dr.	S. Melrose Dr.	Lupine Hills Dr.	65.6
	Lupine Hills Dr. (west)	Lupine Hills Dr. (east)	65.0
	Lupine Hills Dr. (east)	Sycamore Ave.	64.1
Faraday Ave.	City Boundary	S. Melrose Dr.	69.1
Park Center Dr.	S. Melrose Dr.	Oak Ridge Way	61.6
CA-78	City Boundary	Emerald Dr.	80.9
	Emerald Dr.	N. Melrose Dr.	80.9
	N. Melrose Dr.	Sunset Dr.	80.7
	Sunset Dr.	Mar Vista Dr.	80.9
	Mar Vista Dr.	Sycamore Ave.	80.8
	Sycamore Ave.	City Boundary	81.3

Notes: L_{eq} = equivalent continuous sound level (time-averaged sound level); CNEL = Community Noise Equivalent Level

Aviation Noise

Located approximately two miles southwest of Vista, the McClellan-Palomar Airport is the nearest public airport. The Oceanside Municipal Airport is located approximately 6.5 miles west of the city. San Diego International Airport is approximately 33 miles south of the city and is the nearest major commercial airport. Munn Field at Camp Pendleton lies approximately 10 miles northwest of the city and is the source of military aircraft overflights. The McClellan-Palomar and Oceanside Municipal Airport land use plans show that the City is located outside of the 60 dBA CNEL airport noise contours.

Rail Noise

The North County Transit District (NCTD) SPRINTER rail line uses the existing rail line to traverse the City. There are two SPRINTER stations within the City boundaries:

- Vista Transit Center, located at 240 N. Santa Fe Avenue; and
- Civic Center Drive, located at 810 Phillips Street.

Land uses within the vicinity of the Vista Transit Center include residential to the north, east, and west, and commercial land uses to the south. Land uses within the vicinity of the Civic Center Drive station include residential to the north, west, and south, and commercial to the east of the station.

The SPRINTER operates approximately 34 weekday trips and 25 weekend trips in each direction and operates between the 4:00 AM and 9:00 PM hours. The existing rail alignment also serves freight traffic through the City during nighttime hours.

The train schedule from the SPRINTER website was used to calculate CNEL noise contour distances. For the purposes of this analysis, freight trips were assumed to be 0 trains per hour during daytime hours (7:00 AM to 10:00 PM) and 0.667 trains per hour during nighttime hours (10:00 PM to 7:00 AM). Horizontal distances from the railway centerline to the 70 dBA CNEL, 65 dBA CNEL, and 60 dBA CNEL contours are 115 feet, 230 feet, and 500 feet respectively, and include other assumed inputs using the FTA-based “CREATE” model:

- SPRINTER trains include two commuter diesel locomotives and four passenger cars each, at an average speed of 25 miles per hour (mph); and
- Freight trains include up to four locomotives and up to a 4,000-foot length of cars traveling at an average speed of 40 mph.

Rail operation noise prediction worksheets are provided in Attachment C, Railway Noise Modeling Worksheets, located in **Appendix H**.

Figure 6.4: Noise Measurement Locations

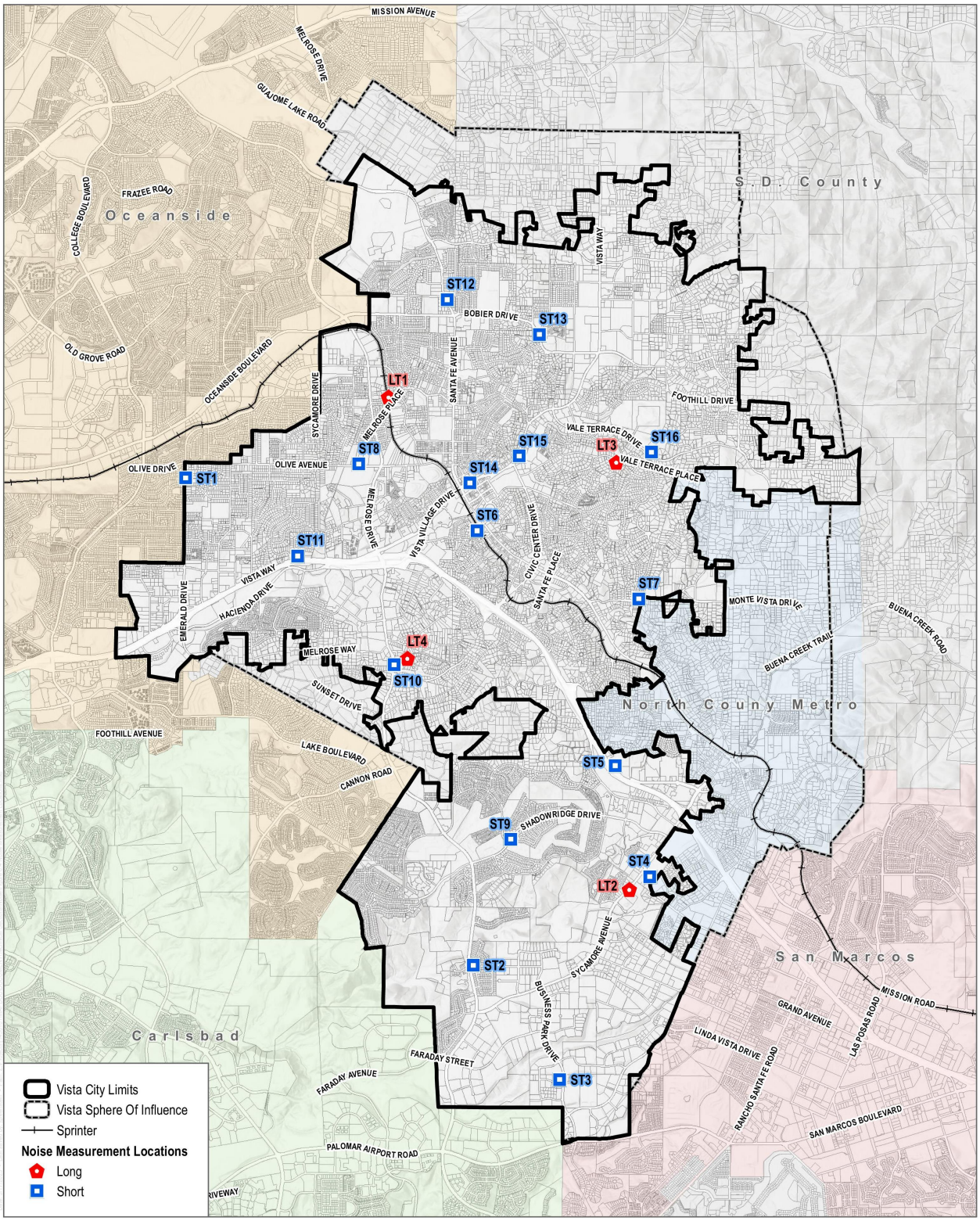
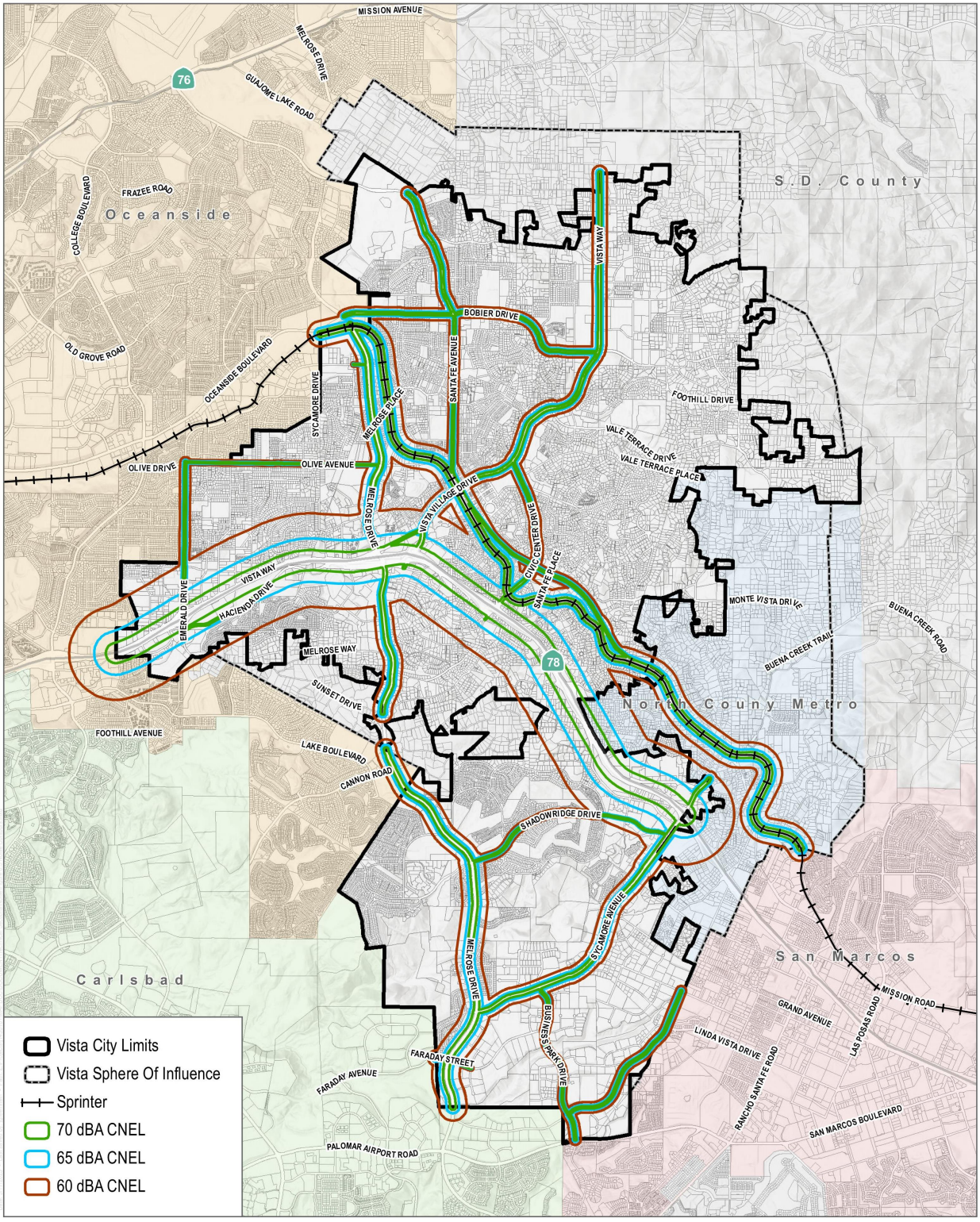


Figure 6.5: Noise Contours



6.6 Key Terms

Age-undetermined faults: Faults where the recency of fault movement has not been determined.

Carcinogen. Any substance that can cause cancer.

Defensible Space. Defensible space is the managed space around a structure that is designed and maintained to reduce the risk of damage to the structure from wildfires.

Exposure Pathway. The route through which a chemical can enter the body (e.g., through the skin, inhaling, ingesting).

Fuel. Fuel is the material that feeds a fire and is a key factor in wildfire behavior. Fuel sources are diverse and include everything from dead tree leaves, twigs, and branches to dead standing trees, live trees, brush, and cured grasses.

Groundwater. Water that exists beneath the land surface in openings (space) between soil and rock. It does not include water residue from underground mining.

Hazardous Material. Any item or agent (biological, chemical, physical) that has the potential to cause harm to humans, animals, or the environment, either by itself or through interaction with other factors.

Holocene. The geological epoch that began after the Pleistocene at approximately 9,700 BCE (before common era) and continues to the present time.

Holocene-active faults: Faults that have moved during the past approximate 11,700 years. These faults are capable of surface rupture.

Pre-Holocene faults: Faults that have not moved in the past 11,700 years. This class of fault may be capable of surface rupture but is not regulated under the Alquist-Priolo Earthquake Fault Zoning Act of 1972, which regulates construction of buildings to be used for human occupancy.

Ignitability. The ability to catch fire; flammable (e.g., lighter fluid, paint remover).

Inundation. To become covered with water, especially floodwaters.

Liquefaction. The process by which water-saturated, unconsolidated sediments are transformed into a substance that acts like a liquid, often in an earthquake.

National Flood Insurance Program. The National Flood Insurance Program aims to reduce the impact of flooding on private and public structures. It does so by providing affordable insurance to property owners and by encouraging communities to adopt and enforce floodplain management regulations. These efforts help mitigate the effects of flooding on new and improved structures. Overall, the program reduces the socioeconomic impact of disasters by promoting the purchase and retention of general risk insurance, but also of flood insurance, specifically.

Polychlorinated Biphenyls. Chemicals formerly manufactured for use as coolants and lubricants in transformers, and in other electrical equipment (e.g., fluorescent light ballasts, old televisions). In 1978, production of polychlorinated biphenyls was banned in the United States because accumulation in the environment can cause harmful health effects, including cancer.

Reactivity. The ability to create an explosion or produce deadly vapors (e.g., bleach mixed with an ammonia-based cleaner).

Subsidence: The downward settlement of a large area of land, which can potentially result in surface infrastructure damage.

Toxic. Toxic materials have the ability to produce injury, illness, or damage to people, domestic animals, or wildlife through ingestion, inhalation, or absorption through the body (e.g., cleaning fluids, pesticides, bleach, drain cleaner).

Wildfire Hazards

CFC: California Fire Code

FHSZs: Fire Hazard Severity Zones

CWPP: Community Wildfire Protection Plan

EOP: Emergency Operations Plan

FRA: Federal Responsibility Area

SRA: State Responsibility Area

LRA: Local Responsibility Area

VFPD: Vista Fire Protection District

Geologic and Seismic Hazards

NEHRP: National Earthquake Hazards Reduction Program

FEMA: Federal Emergency Management Agency

OSHA: Occupational Safety and Health Administration

Flood Hazards

FIRM: Flood Insurance Rate Map

SFHA: Special Flood Hazard Area

FEMA: Federal Emergency Management Agency

Hazardous Materials

HAZWOPER: Hazardous Waste Operations and Emergency Response

PCBs: Polychlorinated biphenyls

USTs: Underground storage tanks

ASTs: Aboveground petroleum storage tanks

Noise

CNEL: Community Noise Equivalent Level

dB: decibels

dBA: A-weighted decibel scale

Hz: hertz

L_{dn}: day–night average noise level

L_{eq}: equivalent noise level over a given period

L_{max}: measured energy-averaged maximum

L_{min}: measured energy-averaged minimum

Ln: statistical sound level

LT: long-term noise measurement

L_{90}: measured energy-averaged 90th percentile noise levels

L_{50}: measured energy-averaged 50th percentile noise levels

L_{10}: measured energy-averaged 10th percentile noise levels

PPV: Peak particle velocity - defined as the maximum instantaneous peak of the vibration signal

RMS: root mean square amplitude - most frequently used to describe the effect of vibration on the human body and is defined as the average of the squared amplitude of the signal

ST: short-term noise measurements

VdB: Decibel notation. VdB is commonly used to measure RMS. The decibel notation acts to compress the range of numbers required to describe vibration

6.7 References

Wildfire Hazards

Anchorpoint 2005. Vista Fire Protection District Wildland Urban Interface Community Wildfire Protection Plan. December 2, 2005.

Anchorpoint 2022. Vista Fire Protection District Community Wildfire Protection Plan Update 2022. 2022.

CAL FIRE 2018. 2018 Strategic Fire Plan For California. 2018. https://osfm.fire.ca.gov/

media/5590/2018-strategic-fire-plan-approved-08_22_18.pdf#:~:text=2018%

20STRATEGIC%20FIRE%20PLAN%20FOR%20CALIFORNIA%20A%

20vision,through%20local%2C%20state%2C%20federal%2C%20tribal%2C%

20and%20private%20partnerships.

CAL FIRE 2022a. Top 20 Most Destructive Fires. top20_destruction.pdf (ca.gov).

CAL FIRE, 2022b. 2021 Incident Archive. 2021 Fire Season. 2021 Fire Season (ca.gov).

City of Vista. 2012. City of Vista General Plan- Public Safety Element. December 2011. https://records.cityofvista.com/WebLink/PDF/hagebhmtgnfpvz3yyx0vdce3/3/cc%202030%20GENERAL%20PLAN%20public%20safety,%20facilities%20_%

20services%20element.pdf.

City of Vista. 2016. City of Vista Municipal Code- Chapter 16.40: Fire Code. November 2016.https://records.cityofvista.com/WebLink/PDF/

uapbtokmqyvzrehwpme5wf2a/18/deve%20code%2016.40%20fire%

20code.pdf.

City of Vista. 2020. Vista Fire Department 2020- 2025 Strategic Plan. March 2020.

https://www.cityofvista.com/Home/ShowDocument?id=21336.

Dudek, 2022. Biological Resources and Open Space. October 2022.

International Fire Code 2021. International Code Council. 2021.

ICC IFC-2021 - 2021 International Fire Code (ansi.org).

USDA Forest Service; US Department of the Interior. 2001. National Fire Plan. Managing the impact of wildfires on communities and the environment: A report to the President in response to the wildfires of 2000, Sept. 8, 2000. Washington, DC. Managing the Impact of Wildfires on Communities and the Environment (archives.gov).

USDCESO & CSD (Unified San Diego County Emergency Services Organization & County of San Diego). 2022. Operational Area Emergency Operations Plan Annex Q. September 2022. https://www.sandiegocounty.gov/content/

dam/sdc/oes/emergency_management/plans/op-area-plan/

2022/EOP2022_Annex%20Q.pdf.

Western Regional Climate Center. 2022. Vista 2, NNE, California (049378) Climate Data. Available: https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca9378. Accessed September 2022.

Windfinder. 2022. Annual wind and weather statistics for McClellan-Palomar Airport. Available: https://www.windfinder.com/windstatistics/carlsbad_palomar. Accessed September 2022.

Geologic and Seismic Hazards/Flood Hazards/Hazardous Materials

City of Vista, 2018. Local Hazard Mitigation Plan, 2018.

California Geological Survey (CGS), 2002. Note 36 California Geomorphic Provinces, revised December 2002.

County of San Diego, 2022. Draft Liquefaction County of San Diego Hazard Mitigation Planning, https://www.sandiegocounty.gov/oes/docs/DRAFT_COSD_Liquefaction1.pdf, accessed September 6, 2022.

County of San Diego, 2018. 2018 Hazard Mitigation Plan, 2018.

Environmental Protection Agency (EPA), 2022. Superfund National Priorities List, https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=33cebcdfdd1b4c3a8b51d41695 6c41f1, accessed September 9, 2022.

Department of Toxic Substances Control (DTSC), 2022. Envirostor Database search for the City of Vista, https://www.envirostor.dtsc.ca.gov/public/map/?myaddress=Vista+CA, September 9, 2022.

State Water Resources Control Board (SWRCB), 2022. Geotracker Database search for the City of Vista, https://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=Vista%2C+CA#, accessed September 9, 2022.

United States Geological Survey (USGS), 2022. Areas of Land Subsidence in California, https://ca.water.usgs.gov/land_subsidence/california-subsidence-areas.html, accessed September 6, 2022.

Noise

AirNav.com. 2019 Airports search. Accessed January 24, 2019. http://www.airnav.com/airports/.4/

City of Vista. 2014. Vista Municipal Code. https://records.cityofvista.com/WebLink/0/doc/1044354/Page1.aspx

City of Vista. 2017. Vista Development Code. https://records.cityofvista.com/WebLink/0/doc/716692/Page1.aspx

CR Associates. 2023. Existing Conditions Roadway Analysis worksheet. January 16, 2023.

DOT (U.S. Department of Transportation). 2006. *Transit Noise and Vibration Impact Assessment.* FTA-VA-90-1003-06. Prepared under contract by Harris, Miller, Miller and Hanson. Burlington, Massachusetts: DOT, Federal Transit Administration, Office of Planning and Environment. May 2006.

Environmental Protection Agency. 1972. The Noise Control Act of 1972. https://www.gsa.gov/cdnstatic/Noise_Control_Act_of_1972.pdf

Environmental Protection Agency. 1974. Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare With an Adequate Margin of Safety. https://nepis.epa.gov/Exe/ZyPDF.cgi/2000L3LN.PDF?Dockey=2000L3LN.PDF

Federal Aviation Administration. 1984. Part 150 – Airport Noise Compatibility Planning. https://www.ecfr.gov/current/title-14/chapter-I/subchapter-I/part-150

Federal Highway Administration. 2010. Procedures for Abatement of Highway Traffic Noise and Construction Noise. https://www.ecfr.gov/current/title-23/chapter-I/subchapter-H/part-772

Federal Highway Administration. 2008. *Roadway Construction Noise Model (RCNM), Software Version 1.1.* Washington, DC: U.S. Department of Transportation, Research and Innovative Technology Administration, John A. Volpe National Transportation Systems Center, Environmental Measurement and Modeling Division.

Federal Transit Administration. 2018. Transit Noise and Vibration Impact Assessment Manual. https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf

San Diego County. 2011. McClellan-Palomar Airport Land Use Compatibility Plan. https://www.lee-associates.com/elee/sandiego/LeeLandTeam/Ponto/McClellan-Palomar_ALUCP_20111.pdf

State of California. 1973. California Noise Control Act of 1973. https://leginfo.legislature.ca.gov/faces/codes_displayexpandedbranch.xhtml?tocCode=HSC&division=28.&title=&part=&chapter=&article=&nodetreepath=34

State of California. 1984. Article 5: Authority for and Scope of General Plans. https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?sectionNum=65300.&lawCode=GOV

State of California. 2016. California Building Code 2016, Section 1207 Sound Transmission. https://up.codes/viewer/california/ca-building-code-2016/chapter/12/interior-environment#1207

7.0 CLIMATE CHANGE AND RESILIENCY

The Climate Change and Resiliency chapter addresses the state of climate change science; and the affects, impacts, and City's vulnerability and resiliency to climate change. Climate change is a global issue that relies on the critical role of members of society, including local governments, to reduce greenhouse gas (GHG) emissions in their communities. The City's 2019 Climate Action Plan (CAP) provides a comprehensive roadmap to address the challenges of climate change in the City of Vista (City). Acting on climate change means both reducing GHG emissions from activities within the city and helping the community to adapt to climate change and improve its resilience over the long term.

7.1 Greenhouse Gas Emissions

Greenhouse gases (GHG) are those that absorb infrared radiation (i.e., trap heat) in the Earth's atmosphere. The trapping and buildup of heat in the atmosphere near the Earth's surface (the troposphere), is referred to as the "greenhouse effect", and is a natural process that contributes to the regulation of the Earth's temperature, creating a livable environment on Earth. The Earth's temperature depends on the balance between energy entering and leaving the planet's system, and many factors (natural and human) can cause changes in Earth's energy balance. Human activities that generate and emit GHGs to the atmosphere increase the amount of infrared radiation that gets absorbed before escaping into space, thus enhancing the greenhouse effect and causing the Earth's surface temperature to rise. This rise in temperature has led to large-scale changes to the Earth's system (e.g., temperature, precipitation, wind patterns, etc.), which are collectively referred to as climate change. Global climate change is a cumulative impact. Urban growth and development contribute to this impact through its incremental contribution combined with the cumulative increase of all other sources of GHGs. Thus, GHG impacts are recognized exclusively as cumulative impacts (CAPCOA 2008).

This section provides a summary of the applicable regulatory framework and plans and programs associated with climate change; the City's GHG inventory, projections, and reduction targets; and reduction strategies and measures as identified in the CAP.

7.1.1 Findings

- The City adopted its first CAP in 2012 to outline strategies to reduce GHG emissions within the City to align with statewide targets. With implementation of strategies and measures identified in the 2012 CAP, the City had already begun to see emissions reductions citywide.
- An update to the CAP was completed in 2021 and includes an updated 2030 GHG emissions reduction target to ensure the City aligns with the state's goal of reducing emissions to 40 percent below 1990 levels, as required by Senate Bill 32.

- Similar to statewide trends, the majority of the City's GHG emissions are attributed to on-road transportation (49 percent), followed by electricity generation (31 percent). City-specific measures outlined in the most recent CAP Update, together with statewide programs and regulations, will ensure that emissions of GHGs continue to decline within the City.

7.1.2 Regulatory Setting

Federal

Massachusetts v. EPA

In *Massachusetts v. EPA* (April 2007), the U.S. Supreme Court directed the EPA administrator to determine whether GHG emissions from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. In December 2009, the administrator signed a final rule with the following two distinct findings regarding GHGs under section 202(a) of the federal Clean Air Act:

- The administrator found that elevated concentrations of GHGs—CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6—in the atmosphere threaten the public health and welfare of current and future generations. This is the "endangerment finding."
- The administrator further found that the combined emissions of GHGs—CO_2, CH_4, N_2O, and HFCs—from new motor vehicles and new motor vehicle engines contribute to the GHG air pollution that endangers public health and welfare. This is the "cause or contribute finding."

These two findings were necessary to establish the foundation for regulation of GHGs from new motor vehicles as air pollutants under the Clean Air Act (42 U.S.C. § 7401).

Energy Independence and Security Act

The Energy Independence and Security Act of 2007 (Public Law 110-140), among other key measures, would do the following, which would aid in the reduction of national GHG emissions:

- Increase the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard requiring fuel producers to use at least 36 billion gallons of biofuel in 2022.
- Set a target of 35 miles per gallon for the combined fleet of cars and light trucks by model year 2020 and directs National Highway Traffic Safety Administration (NHTSA) to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for work trucks.

- Prescribe or revise standards affecting regional efficiency for heating and cooling products and procedures for new or amended standards, energy conservation, energy-efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.

Federal Vehicle Standards

In 2007, in response to the *Massachusetts v. EPA* U.S. Supreme Court ruling, the Bush Administration issued Executive Order (EO) 13432 directing the EPA, the Department of Transportation, and the Department of Energy to establish regulations that reduce GHG emissions from motor vehicles, non-road vehicles, and non-road engines by 2008. In 2009, the NHTSA issued a final rule regulating fuel efficiency and GHG emissions from cars and light-duty trucks for model year 2011; and, in 2010, the EPA and NHTSA issued a final rule regulating cars and light-duty trucks for model years 2012 through 2016 (75 Fed. Reg. 25324–25728).

In 2010, President Obama issued a memorandum directing the Department of Transportation, Department of Energy, EPA, and NHTSA to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, the EPA and NHTSA proposed stringent, coordinated federal GHG and fuel economy standards for model years 2017 through 2025 light-duty vehicles. The proposed standards projected to achieve 163 grams per mile of CO_2 in model year 2025, on an average industry fleet-wide basis, which is equivalent to 54.5 miles per gallon if this level were achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017 through 2021 (77 Fed. Reg. 62624–63200). On January 12, 2017, the EPA finalized its decision to maintain the current GHG emissions standards for model years 2022–2025 cars and light trucks.

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011, the EPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014 through 2018. The standards for CO_2 emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to the EPA, this regulatory program will reduce GHG emissions and fuel consumption for the affected vehicles by 6 percent to 23 percent over the 2010 baselines (76 Fed. Reg. 57106–57513).

In August 2016, the EPA and NHTSA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program will apply to vehicles with model year 2018 through 2027 for certain trailers, and model years 2021 through 2027 for semi-trucks, large pickup trucks, vans, and all sizes of buses and work trucks. The final standards are expected to lower CO_2 emissions by approximately 1.1 billion metric tons and reduce oil consumption by up to 2 billion barrels over the lifetime of the vehicles sold under the program (EPA and NHTSA 2016).

On April 2, 2018, the EPA, under administrator Scott Pruitt, reconsidered the final determination for light-duty vehicles and withdrew its previous 2017 determination, stating that the current standards may be too stringent and therefore should be revised as appropriate (EPA 2018).

In August 2018, EPA and NHTSA proposed to amend certain fuel economy and GHG standards for passenger cars and light trucks and establish new standards for model years 2021 through 2026. Compared to maintaining the post-2020 standards then in place, the 2018 proposal would increase U.S. fuel consumption by about half a million barrels per day (2 percent to 3 percent of total daily consumption, according to the Energy Information Administration) and would impact the global climate by 3/1000th of one degree Celsius by 2100 (EPA and NHTSA 2018). California and other states have stated their intent to challenge federal actions that would delay or eliminate GHG reduction measures and have committed to cooperating with other countries to implement global climate change initiatives.

In 2019, the EPA and NHTSA published the Safer Affordable Fuel-Efficient Vehicles Rule Part One: One National Program (SAFE-1)(84 Fed. Reg. 51310), which revoked California's authority to set its own GHG emissions standards and set zero-emission vehicle (ZEV) mandates in California. In March 2020, Part Two was issued which set CO_2 emissions standards and corporate average fuel economy standards for passenger vehicles and light-duty trucks for model years 2021 through 2026. In March 2022, EPA reinstated California's authority under the Clean Air Act to implement its own GHG emission standards and ZEV sales mandate. EPA's action concludes its reconsideration of the 2019 SAFE-1 rule by finding that the actions taken under the previous administration as a part of SAFE-1 were decided in error and are now entirely rescinded.

The Inflation Reduction Act of 2022

The Inflation Reduction Act was signed into law by President Biden in August 2022. The bill includes specific investment in energy and climate reform and is projected to reduce GHG emissions within the U.S. by 40 percent as compared to 2005 levels by 2030. The bill allocates funds to boost renewable energy infrastructure (e.g., solar panels and wind turbines), includes tax credits for the purchase of electric vehicles, and includes measures that will make homes more energy efficient.

State

The statewide GHG emissions regulatory framework is summarized in this subsection by category: state climate change targets, building energy, renewable energy and energy procurement, mobile sources, water, solid waste, and other state actions. The following text describes EOs, Assembly Bills (ABs), Senate Bills (SBs), and other plans and policies that would directly or indirectly reduce GHG emissions and/or address climate change issues.

State Climate Targets

Executive Order S-3-05

EO S-3-05 (June 2005) established California's GHG emissions-reduction targets and laid out responsibilities among the state agencies for implementing the EO and for reporting on progress toward the targets. This EO established the following targets:

By 2010, reduce GHG emissions to 2000 levels

By 2020, reduce GHG emissions to 1990 levels

By 2050, reduce GHG emissions to 80 percent below 1990 levels

EO S-3-05 also directed the California Environmental Protection Agency to report biannually on progress made toward meeting the GHG targets and the impacts to California due to global warming, including impacts to water supply, public health, agriculture, the coastline, and forestry.

Executive Order B-30-15

EO B-30-15 (April 2015) identified an interim GHG-reduction target in support of targets previously identified under S-3-05 and AB 32. EO B-30-15 set an interim target goal of reducing GHG emissions to 40 percent below 1990 levels by 2030 to keep California on its trajectory toward meeting or exceeding the long-term goal of reducing GHG emissions to 80 percent below 1990 levels by 2050, as set forth in S-3-05. To facilitate achieving this goal, EO B-30-15 called for CARB to update the Scoping Plan to express the 2030 target in terms of MMT CO_2e. The EO also called for state agencies to continue to develop and implement GHG emission-reduction programs in support of the reduction targets.

Executive Order B-55-18

EO B-55-18 (September 2018) establishes a statewide policy for the state to achieve carbon neutrality as soon as possible (no later than 2045) and achieve and maintain net negative emissions thereafter. The goal is an addition to the existing statewide targets of reducing the state's GHG emissions. CARB will work with relevant state agencies to ensure that future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal.

Assembly Bill 32

In furtherance of the goals established in EO S-3-05, the Legislature enacted AB 32, the California Global Warming Solutions Act of 2006 (California Health and Safety Code Sections 38500-38599 et seq.). AB 32 provided initial direction on creating a comprehensive multiyear program to limit California's GHG emissions at 1990 levels by 2020, and initiate the transformations required to achieve the state's long-range climate objectives.

Senate Bill 32 and Assembly Bill 197

SB 32 and AB 197 (enacted in 2016) are companion bills. SB 32 codified the 2030 emissions-reduction goal of EO B-30-15 by requiring CARB to ensure that statewide GHG emissions are reduced to 40 percent below 1990 levels by 2030. AB 197

established the Joint Legislative Committee on Climate Change Policies, consisting of at least three members of the Senate and three members of the Assembly, in order to provide ongoing oversight over implementation of the state's climate policies. AB 197 also added two members of the Legislature to the Board as nonvoting members; requires CARB to make available and update (at least annually via its website) emissions data for GHGs, criteria air pollutants, and toxic air contaminants from reporting facilities; and requires CARB to identify specific information for GHG emissions-reduction measures when updating the scoping plan.

California Air Resources Board's Climate Change Scoping Plan

One specific requirement of AB 32 is for CARB to prepare a "scoping plan" for achieving the maximum technologically feasible and cost-effective GHG emission reductions by 2020 (California Health and Safety Code Section 38561[a]), and to update the plan at least once every 5 years. In 2008, CARB approved the first scoping plan: The *Climate Change Proposed Scoping Plan: A Framework for Change* (Scoping Plan). The Scoping Plan included a mix of recommended strategies that combined direct regulations, market-based approaches, voluntary measures, policies, and other emission-reduction programs calculated to meet the 2020 statewide GHG emission limit and initiate the transformations needed to achieve the state's long-range climate objectives.

In 2014, CARB approved the first update to the Scoping Plan. The First Update to the Climate Change Scoping Plan: Building on the Framework (First Update) defined the state's GHG emission reduction priorities for the next 5 years and laid the groundwork to start the transition to the post-2020 goals set forth in EOs S-3-05 and B-16-2012 (CARB 2014). The First Update concluded that California was on track to meet the 2020 target, but recommended a 2030 mid-term GHG reduction target be established to ensure a continuum of action to reduce emissions. The First Update recommended a mix of technologies in key economic sectors to reduce emissions through 2050 including energy demand reduction through efficiency and activity changes; large-scale electrification of on-road vehicles, buildings, and industrial machinery; decarbonizing electricity and fuel supplies; and the rapid market penetration of efficient and clean energy technologies.

In December 2017, CARB released the *2017 Climate Change Scoping Plan Update* (Second Update) for public review and comment (CARB 2017a). The Second Update built upon the successful framework established in the initial Scoping Plan and First Update, while identifying new technologically feasible and cost-effective strategies that served as the framework to achieve the 2030 GHG target and define the state's climate change priorities to 2030 and beyond. The strategies' "known commitments" included implementing renewable energy and energy efficiency (including the mandates of SB 350), increased stringency of the Low Carbon Fuel Standard, measures identified in the Mobile Source and Freight Strategies, measures identified in the proposed Short-Lived Climate Pollutant Plan, and increased stringency of SB 375 targets. To fill the gap in additional reductions needed to

achieve the 2030 target, the Second Update recommended continuing the Cap-and-Trade Program and a measure to reduce GHGs from refineries by 20 percent. The Second Update was approved by CARB's Governing Board on December 14, 2017.

CARB released the *Draft 2022 Scoping Plan Update* in May 2022, which outlines the state's plan to reach carbon neutrality by 2045 or earlier, while also assessing the progress the state is making toward reducing GHG emissions by at least 40 percent below 1990 levels by 2030, as is required by SB 32 and laid out in the Second Update. The carbon neutrality goal requires CARB to expand proposed actions from only the reduction of anthropogenic sources of GHG emissions to also include those that capture and store carbon (e.g., through natural and working lands, or mechanical technologies). The carbon reduction programs build on and accelerate those currently in place including: moving to zero-emission transportation; phasing out use of fossil gas use for heating homes and buildings; reducing chemical and refrigerants with high GWP; providing communities with sustainable options for walking, biking, and public transit; displacement of fossil-fuel fired electrical generation through use of renewable energy alternatives (e.g., solar arrays and wind turbines); and scaling up new options such as green hydrogen[1] (CARB 2022b).

The *Draft 2022 Scoping Plan Update* also emphasizes that there is no realistic path to carbon neutrality without carbon removal and sequestration, and to achieve the state's carbon neutrality goal, carbon reduction programs must be supplemented by strategies to remove and sequester carbon. Strategies for carbon removal and sequestration include carbon capture and storage (CCS) from anthropogenic point sources, where CO_2 is captured as it leaves a facility's smokestack and is injected into geologic formations or used in industrial materials (e.g., concrete); and carbon dioxide removal (CDR) from ambient air, through mechanical (e.g., direct air capture with sequestration [DACS]) or nature-based (e.g., management of natural and working lands) applications.

California Air Resources Board's Regulations for the Mandatory Reporting of Greenhouse Gas Emissions

CARB's Regulation for the Mandatory Reporting of Greenhouse Gas Emissions (Cal. Code Regs. tit. 17, § 95100–95157) incorporated by reference certain requirements that EPA promulgated in its Final Rule on Mandatory Reporting of Greenhouse Gases (40 Code of Federal Regulations Section 98). Specifically, section 95100(c) of the Mandatory Reporting Regulation incorporated those requirements that EPA promulgated in the *Federal Register* on October 30, 2009; July 12, 2010; September 22, 2010; October 28, 2010; November 30, 2010; December 17, 2010; and April 25, 2011. In general, entities subject to the Mandatory Reporting Regulation that emit over 10,000 MT CO_2e per year are required to report annual GHGs through the

[1] Green hydrogen refers to hydrogen that is generated by renewable energy or from low-carbon power, and has significantly lower associated carbon emissions than grey hydrogen, which is produced using natural gas and makes up the majority of hydrogen production. For the purposes of the Draft 2022 Scoping Plan, the term "green hydrogen" is not limited to only electrolytic hydrogen produced from renewables.

California Electronic GHG Reporting Tool. Certain sectors, such as refineries and cement plants, are required to report regardless of emission levels. Entities that emit more than the 25,000 MT CO_2e per year threshold are required to have their GHG emissions report verified by a CARB-accredited third party.

Executive Order B-18-12

EO B-18-12 (April 2012) directed state agencies, departments, and other entities under the Governor's executive authority to take action to reduce entity-wide GHG emissions by at least 10 percent by 2015 and 20 percent by 2020, as measured against a 2010 baseline. EO B-18-12 also established goals for existing state buildings for reducing grid-based energy purchases and water use.

Senate Bill 605 and Senate Bill 1383

SB 605 (2014) requires CARB to complete a comprehensive strategy to reduce emissions of short-lived climate pollutants (SLCPs) in the state (California Health and Safety Code Section 39730); and SB 1383 (2016) requires CARB to approve and implement that strategy by January 1, 2018 (Cal. Pub. Resources Code, § 42652-43654). SB 1383 also establishes specific targets for the reduction of SLCPs (40 percent below 2013 levels by 2030 for CH_4 and HFCs, and 50 percent below 2013 levels by 2030 for anthropogenic black carbon) and provides direction for reductions from dairy and livestock operations and landfills. Accordingly, and as mentioned above, CARB adopted its *Short-Lived Climate Pollutant Reduction Strategy* (SLCP Reduction Strategy) in March 2017. The SLCP Reduction Strategy establishes a framework for the statewide reduction of emissions of black carbon, methane, and fluorinated gases (CARB 2017b).

Executive Order N-82-20

EO N-82-20 (October 2020) directs state agencies to deploy nature-based strategies to remove carbon from the atmosphere and store it in the state's natural and working lands. The order sets a goal to conserve 30 percent of the state's land and coastal waters by 2030. To implement EO N-82-20, the CNRA developed the *Natural and Working Lands Climate Smart Strategy*, which defines the natural and working landscapes, and identifies land management actions that will help achieve carbon neutrality in alignment with EO B-55-18 and the *Draft 2022 Scoping Plan* (CNRA 2022).

Assembly Bill 1279

The Legislature enacted AB 1279, the California Climate Crisis Act, in September 2022. The bill declares the policy of the state to achieve net zero GHG emissions as soon as possible, but no later than 2045, and achieve and maintain net negative GHG emissions thereafter. Additionally, the bill requires that by 2045, statewide anthropogenic GHG emissions be reduced to at least 85 percent below 1990 levels.

Assembly Bill 1757

AB 1757 (September 2022) requires the CNRA to determine a range of targets for natural carbon sequestration, and for nature-based climate solutions that reduce GHG emissions for future years 2030, 2038, and 2045. These targets are to be

determined by no later than January 1, 2024 and are established to support the state's goals to achieve carbon neutrality and foster climate adaptation and resilience.

Building Energy

California Code of Regulations, Title 24, Part 6

The California Building Standards Code were established in 1978 and serves to enhance and regulate California's building standards. While not initially promulgated to reduce GHG emissions, Part 6 of Title 24 specifically established Building Energy Efficiency Standards that are designed to ensure that new and existing buildings in California achieve energy efficiency and preserve outdoor and indoor environmental quality. These energy efficiency standards are reviewed every few years by the Building Standards Commission and the California Energy Commission (CEC), and revised if necessary (Cal. Pub. Resources Code, § 25402(b)(1)). The regulations receive input from members of industry, as well as the public, in order to "reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy" (Cal. Pub. Resources Code, § 25402). These regulations are carefully scrutinized and analyzed for technological and economic feasibility (Cal. Pub. Resources Code, § 25402(d)) and cost effectiveness (Cal. Pub. Resources Code, § 25402(b)(2–3)). As a result, these standards save energy, increase electricity supply reliability, increase indoor comfort, avoid the need to construct new power plants, and help preserve the environment. The current Title 24 standards are the 2019 Title 24 building energy efficiency standards, which became effective January 1, 2020.

The 2022 standards will improve upon the 2019 standards for new construction of, and additions and alterations to, residential and nonresidential buildings. The CEC updates the Title 24 Energy Code every 3 years. The CEC adopted the 2022 Title 24 Energy Code in August 2021 and the California Building Standards Commission approved incorporating the updated Code into the California Building Standards Code (CALGreen) in December 2021. The 2022 Energy Code will go into effect on January 1, 2023. When compared to the 2019 Title 24 Standards, the 2022 amendments include measures that will further reduce energy use in single family, multifamily, and nonresidential buildings, through the following strategies (CEC 2021):

- New prescriptive and performance standards for electric heat pumps for space conditioning and water heating, as appropriate for the various climate zones in California;
- Require PV and battery storage systems for newly constructed multifamily and selected nonresidential buildings;
- Updated efficiency measures for lighting, building envelope, HVAC; and

- Improvements to reduce the energy loads of certain equipment covered by (i.e., subject to the requirements of) the Energy Code that perform a commercial process that is not related to the occupant needs in the building (such as refrigeration equipment in refrigerated warehouses, or air conditioning for computer equipment in data processing centers).

California Code of Regulations, Title 24, Part 11

In addition to the CEC's efforts, in 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11 of Title 24) is commonly referred to as California's Green Building Standards (CALGreen) and establishes minimum mandatory standards and voluntary standards pertaining to the planning and design of sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and interior air quality. The CALGreen standards took effect in January 2011 and instituted mandatory minimum environmental performance standards for all ground-up, new construction of commercial, low-rise residential, and state-owned buildings and schools and hospitals. The 2019 CALGreen standards are the current applicable standards. For nonresidential development, some of the key mandatory CALGreen 2019 standards involve requirements related to bicycle parking, designated parking for clean air vehicles, electric vehicle (EV) charging stations, shade trees, water conserving plumbing fixtures and fittings, outdoor potable water use in landscaped areas, recycled water supply systems, construction waste management, excavated soil and land clearing debris, and commissioning (Cal. Code Regs. tit. 24, Part 11).

California Code of Regulations, Title 20

Title 20 of the California Code of Regulations requires manufacturers of appliances to meet state and federal standards for energy and water efficiency (Cal. Code Regs. tit. 20, § 1401-1410 et seq.). The CEC certifies an appliance based on a manufacturer's demonstration that the appliance meets the standards. New appliances regulated under Title 20 include: refrigerators, refrigerator-freezers and freezers; room air conditioners and room air-conditioning heat pumps; central air conditioners; spot air conditioners; vented gas space heaters; gas pool heaters; plumbing fittings and plumbing fixtures; fluorescent lamp ballasts; lamps; emergency lighting; traffic signal modules; dishwaters; clothes washers and dryers; cooking products; electric motors; low voltage dry-type distribution transformers; power supplies; televisions and consumer audio and video equipment; and battery charger systems. Title 20 presents protocols for testing each type of appliance covered under the regulations and appliances must meet the standards for energy performance, energy design, water performance, and water design. Title 20 contains three types of standards for appliances: federal and state standards for federally regulated appliances, state standards for federally regulated appliances, and state standards for non-federally regulated appliances.

Senate Bill 1

SB 1 (2006) established a $3 billion rebate program to support the goal of the state to install rooftop solar energy systems with a generation capacity of 3,000 megawatts through 2016. SB 1 added sections to the Public Resources Code, including Chapter 8.8 (California Solar Initiative), that require building projects applying for ratepayer-funded incentives for photovoltaic systems to meet minimum energy efficiency levels and performance requirements (Cal. Pub. Resources Code, § 25780-25784 et seq.). Section 25780 established that it is a goal of the state to establish a self-sufficient solar industry. The goals included establishing solar energy systems as a viable mainstream option for both homes and businesses within 10 years of adoption and placing solar energy systems on 50 percent of new homes within 13 years of adoption. SB 1, also termed "Go Solar California," was previously titled "Million Solar Roofs."

Assembly Bill 1470 (Solar Water Heating)

AB 1470 established the Solar Water Heating and Efficiency Act of 2007 (California Public Utilities Code Sections 2851-2869 et seq.). The bill makes findings and declarations of the Legislature relating to the promotion of solar water heating systems and other technologies that reduce natural gas demand.

Assembly Bill 1109

AB 1109 (2007) required the CEC to adopt minimum energy efficiency standards for general-purpose lighting to reduce electricity consumption by 50 percent for indoor residential lighting and by 25 percent for indoor commercial lighting (Cal. Pub. Resources Code, § 25402.5.4).

Renewable Energy and Energy Procurement

Senate Bill 1078

SB 1078 (2002) (California Public Utilities Code Section 399.11 et seq.) established the Renewables Portfolio Standard (RPS) program, which required an annual increase in renewable generation by the utilities equivalent to at least 1 percent of sales, with an aggregate goal of 20 percent by 2017. This goal was subsequently accelerated, requiring utilities to obtain 20 percent of their power from renewable sources by 2010 (see SB 107, EO S-14-08, and EO S-21-09).

Senate Bill 1368

SB 1368 (2006) required the CEC to develop and adopt regulations for GHG emission performance standards for the long-term procurement of electricity by local publicly owned utilities (California Public Utilities Code Section 8340-8341 et seq.). These standards must be consistent with the standards adopted by the California Public Utilities Commission (CPUC).

Executive Order S-14-08

EO S-14-08 (2008) focused on the contribution of renewable energy sources to meet the electrical needs of California while reducing the GHG emissions from the electrical sector. This EO required that all retail suppliers of electricity in California

serve 33 percent of their load with renewable energy by 2020. Furthermore, the EO directed state agencies to take appropriate actions to facilitate reaching this target. The CNRA, through collaboration with CEC and the California Department of Fish and Wildlife, was directed to lead this effort.

Executive Order S-21-09 and Senate Bill X1-2

EO S-21-09 (2009) directed CARB to adopt a regulation consistent with the goal of EO S-14-08 by July 31, 2010. CARB was further directed to work with CPUC and CEC to ensure that the regulation builds upon the RPS program and was applicable to investor-owned utilities, publicly owned utilities, direct access providers, and community choice providers. Under this order, CARB was to give the highest priority to those renewable resources that provide the greatest environmental benefits with the least environmental costs and impacts on public health, and those that can be developed the most quickly in support of reliable, efficient, cost-effective electricity system operations. On September 23, 2010, CARB initially approved regulations to implement a Renewable Electricity Standard; however, this regulation was not finalized because of subsequent legislation (SB X1-2) signed by Governor Brown in April 2011.

SB X1-2 expanded RPS by establishing a renewable energy target of 20 percent of the total electricity sold to retail customers in California per year by December 31, 2013, and 33 percent by December 31, 2020, and in subsequent years. Under the bill, a renewable electrical generation facility is one that uses biomass, solar thermal, photovoltaic, wind, geothermal, fuel cells using renewable fuels, small hydroelectric generation (30 megawatts or less), digester gas, municipal solid waste conversion, landfill gas, ocean wave, ocean thermal, or tidal current, and that meets other specified requirements with respect to its location.

SB X1-2 applies to all electricity retailers in the state, including publicly owned utilities, investor-owned utilities, electricity service providers, and community choice aggregators. All of these entities must meet the renewable energy goals listed above.

Senate Bill 350

SB 350 (2015) further expanded the RPS program by establishing a goal of 50 percent of the total electricity sold to retail customers in California per year by December 31, 2030. In addition, SB 350 included the goal to double the energy efficiency savings in electricity and natural gas final end uses (such as heating, cooling, lighting, or class of energy uses on which an energy-efficiency program is focused) of retail customers through energy conservation and efficiency. The bill also requires the CPUC, in consultation with the CEC, to establish efficiency targets for electrical and gas corporations consistent with this goal.

Senate Bill 100

SB 100 (2018) increased the standards set forth in SB 350, establishing that 44 percent of the total electricity sold to retail customers in California per year by

December 31, 2024, 52 percent by December 31, 2027, and 60 percent by December 31, 2030, be secured from qualifying renewable energy sources. SB 100 states that it is the policy of the state that eligible renewable energy resources and zero-carbon resources supply 100 percent of the retail sales of electricity to California. This bill requires that the achievement of 100 percent zero-carbon electricity resources do not increase the carbon emissions elsewhere in the western grid and that the achievement not be achieved through resource shuffling.

Senate Bill 1020

SB 1020 (September 2022) revises the standards from SB 100, requiring the following percentage of retail sales of electricity to California end-use customers come from eligible renewable energy resources and zero-carbon resources:

- 90% by December 31, 2035
- 95% by December 31, 2040
- 100% by December 31, 2045

Mobile Sources

State Vehicle Standards (Assembly Bill 1493 and Executive Order B-16-12)

AB 1493 (July 2002) was enacted in a response to the transportation sector accounting for more than half of California's CO_2 emissions. AB 1493 required CARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles determined by the state board to be vehicles that are primarily used for noncommercial personal transportation in the state. The bill required that CARB set GHG emission standards for motor vehicles manufactured in 2009 and all subsequent model years. CARB adopted the standards in September 2004. EO B-16-12 (March 2012) required that state entities under the governor's direction and control support and facilitate the rapid commercialization of zero-emissions vehicles. It ordered CARB, CEC, CPUC, and other relevant agencies to work with the Plug-in Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks to help achieve benchmark goals by 2015, 2020, and 2025. On a statewide basis, EO B-16-12 established a target reduction of GHG emissions from the transportation sector equaling 80 percent less than 1990 levels by 2050. This directive did not apply to vehicles that have special performance requirements necessary for the protection of the public safety and welfare. As explained under the "Federal Vehicle Standards" description above, EPA and NHTSA approved the SAFE Vehicles Rule Part One and Two, which revoked California's authority to set its own GHG emissions standards and set zero-emission vehicle mandates in California. As the EPA rule is the subject of pending legal challenges, this analysis continues to utilize the best available information at this time, as set forth in EMFAC.

Heavy-Duty Diesel

CARB adopted the final Heavy-Duty Truck and Bus Regulation on December 31, 2014, to reduce diesel particulate matter, a major source of black carbon, and

oxides of nitrogen emissions from heavy-duty diesel vehicles (Cal. Code Regs. tit. 13, § 2025). The rule requires diesel particulate matter filters be applied to newer heavier trucks and buses by January 1, 2012, with older vehicles required to comply by January 1, 2015. The rule will require nearly all diesel trucks and buses to be compliant with the 2010 model year engine requirement by January 1, 2023. CARB also adopted an Airborne Toxic Control Measure to limit idling of diesel-fueled commercial vehicles on December 12, 2013. This rule requires diesel-fueled vehicles with gross vehicle weights greater than 10,000 pounds to idle no more than 5 minutes at any location (Cal. Code Regs. tit. 13, § 2485).

Executive Order S-1-07

Executive Order (EO) S-1-07 (January 2007, implementing regulation adopted in April 2009) sets a declining Low Carbon Fuel Standard for GHG emissions measured in CO_2e grams per unit of fuel energy sold in California. The target of the Low Carbon Fuel Standard is to reduce the carbon intensity of California passenger vehicle fuels by at least 10 percent by 2020 (Cal. Code Regs. tit. 17, § 95480 et seq.). The carbon intensity measures the amount of GHG emissions in the lifecycle of a fuel—including extraction/feedstock production, processing, transportation, and final consumption—per unit of energy delivered.

Senate Bill 375

SB 375 (California Government Code Section 65080 amendment, 2008) addresses GHG emissions associated with the transportation sector through regional transportation and sustainability plans. SB 375 requires CARB to adopt regional GHG-reduction targets for the automobile and light-truck sector for 2020 and 2035, and to update those targets every 8 years. SB 375 requires the state's 18 regional metropolitan planning organizations (MPOs) to prepare a Sustainable Communities Strategy (SCS) as part of their Regional Transportation Plan (RTP) that will achieve the GHG-reduction targets set by CARB. If an MPO is unable to devise an SCS to achieve the GHG-reduction target, the MPO must prepare an Alternative Planning Strategy demonstrating how the GHG-reduction target would be achieved through alternative development patterns, infrastructure, or additional transportation measures or policies.

A SCS does not: (i) regulate the use of land; (ii) supersede the land use authority of cities and counties; or (iii) require that a city's or county's land use policies and regulations, including those in a general plan, be consistent with it (California Government Code Section 65080[b][2][K]). Nonetheless, SB 375 makes regional and local planning agencies responsible for developing those strategies as part of the federally required metropolitan transportation planning process and the state-mandated housing element process.

Advanced Clean Cars Program and Zero-Emissions Vehicle Program

The Advanced Clean Cars (ACC) I program (January 2012) is an emissions-control program for model years 2015 through 2025. The program combines the control of

smog- and soot-causing pollutants and GHG emissions into a single coordinated package of regulations: the Low-Emission Vehicle (LEV) regulation for criteria air pollutant and GHG emissions and a technology forcing regulation for zero-emission vehicles (ZEV) that contributes to both types of emission reductions (CARB 2022c). The package includes elements to reduce smog-forming pollution, reduce GHG emissions, promote clean cars, and provide the fuels for clean cars. To improve air quality, CARB has implemented new emission standards to reduce smog-forming emissions beginning with 2015 model year vehicles. It is estimated that in 2025 cars will emit 75 percent less smog-forming pollution than the average new car sold in 2015. The ZEV program will act as the focused technology of the ACC I program by requiring manufacturers to produce increasing numbers of ZEVs and plug-in hybrid EVs in the 2018 to 2025 model years.

The ACC II program is currently in development to establish the next set of LEV and ZEV requirements for model years after 2025 to contribute to meeting federal ambient air quality ozone standards and California's carbon neutrality standards (CARB 2022c). The main objectives of ACC II are:

1) Maximize criteria and GHG emission reductions through increased stringency and real-world reductions; and
2) Accelerate the transition to ZEVs through both increased stringency of requirements and associated actions to support wide-scale adoption and use.

An ACC II rulemaking package, which will consider technological feasibility, environmental impacts, equity, economic impacts, and consumer impacts, is anticipated to be presented to CARB for consideration in June 2022. However, as detailed previously, EPA and NHTSA published the SAFE Vehicles Rule, which revokes California's authority to set its own GHG emissions standards and set ZEV mandates in California. Since California and 22 other states, as well as the District of Columbia and four cities, filed suit against the EPA and a petition for reconsideration of the SAFE Rule, the ACC II rulemaking's course may vary depending on the results of this ongoing litigation.

Executive Order N-79-20

EO N-79-20 (September 2020) requires CARB to develop regulations as follows: (1) Passenger vehicle and truck regulations requiring increasing volumes of new ZEVs sold in the State towards the target of 100 percent of in-state sales by 2035; (2) medium- and heavy-duty vehicle regulations requiring increasing volumes of new zero-emission trucks and buses sold and operated in the State towards the target of 100 percent of the fleet transitioning to zero-emission vehicles by 2045 everywhere feasible and for all drayage trucks to be zero emission by 2035; and (3) strategies, in coordination with other State agencies, the EPA and local air districts, to achieve 100 percent zero-emission from off-road vehicles and equipment operations in the State by 2035. EO N-79-20 called for the development of a Zero-Emissions Vehicle Market

Development Strategy, which was released February 2021, to be updated every 3 years, that ensures coordination and implementation of the EO and outlines actions to support new and used ZEV markets. In addition, the EO specifies identification of near-term actions, and investment strategies, to improve clean transportation, sustainable freight, and transit options; and calls for development of strategies, recommendations, and actions by July 15, 2021, to manage and expedite the responsible closure and remediation of former oil extraction sites as the State transitions to a carbon-neutral economy.

Advanced Clean Trucks Regulation

The Advanced Clean Trucks (ACT) Regulation was also approved by CARB in 2020. The purpose of the ACT Regulation is to accelerate the market for zero-emission vehicles in the medium- and heavy-duty truck sector and to reduce air pollutant emissions generated from on-road mobile sources (CARB 2022d). The regulation has two components including (1) a manufacturer sales requirement and (2) a reporting requirement:

Zero-emission truck sales: Manufacturers who certify Class 2b-8 chassis or complete vehicles with combustion engines will be required to sell zero-emission trucks as an increasing percentage of their annual California sales from 2024 to 2035. By 2035, zero-emission truck/chassis sales would need to be 55 percent of Class 2b – 3 truck sales, 75 percent of Class 4 – 8 straight truck sales, and 40 percent of truck tractor sales.

Company and fleet reporting: Large employers including retailers, manufacturers, brokers, and others will be required to report information about shipments and shuttle services. Fleet owners, with 50 or more trucks, will be required to report about their existing fleet operations. This information will help identify future strategies to ensure that fleets purchase available zero-emission trucks and place them in service where suitable to meet their needs.

Water

Senate Bill X7-7

SB X7-7, or the Water Conservation Act of 2009, required that all water suppliers increase their water use efficiency with an overall goal of reducing per capita urban water use by 20 percent by December 31, 2020. Each urban water supplier was required to develop water use targets to meet this goal.

Executive Order B-29-15

In response to the ongoing drought in California, EO B-29-15 (April 2015) set a goal of achieving a statewide reduction in potable urban water usage of 25 percent relative to water use in 2013. The term of the EO extended through February 28, 2016, although many of the directives have become permanent water-efficiency standards and requirements. The EO includes specific directives that set strict limits on water usage in the state. In response to EO B-29-15, the California Department of Water Resources has modified and adopted a revised version of the Model Water

Efficient Landscape Ordinance that, among other changes, significantly increases the requirements for landscape water use efficiency and broadens its applicability to include new development projects with smaller landscape areas.

Executive Order N-10-21

In response to a state of emergency due to severe drought conditions, EO N-10-21 (July 2021) called on all Californians to voluntarily reduce their water use by 15 percent from their 2020 levels. Actions suggested in EO N-10-21 include reducing landscape irrigation, running dishwashers and washing machines only when full, finding and fixing leaks, installing water-efficient showerheads, taking shorter showers, using a shut-off nozzle on hoses, and taking cars to commercial car washes that use recycled water.

Solid Waste

Assembly Bill 939, Assembly Bill 341, Assembly Bill 1826, and Senate Bill 1383

In 1989, AB 939, known as the Integrated Waste Management Act (Cal. Pub. Resources Code, § 40000 et seq.), was passed because of the increase in waste stream and the decrease in landfill capacity. The statute established the California Integrated Waste Management Board (replaced in 2010 by the California Department of Resources Recycling and Recovery, or CalRecycle), which oversees a disposal reporting system. AB 939 mandated a reduction of waste being disposed where jurisdictions were required to meet diversion goals of all solid waste through source reduction, recycling, and composting activities of 25 percent by 1995 and 50 percent by the year 2000.

AB 341 (2011) amended the California Integrated Waste Management Act of 1989 to include a provision declaring that it is the policy goal of the state that not less than 75 percent of solid waste generated be source-reduced, recycled, or composted by the year 2020, and annually thereafter. In addition, AB 341 required CalRecycle to develop strategies to achieve the state's policy goal. CalRecycle has conducted multiple workshops and published documents that identify priority strategies that it believes would assist the state in reaching the 75 percent goal by 2020.

AB 1826 (Chapter 727, Statutes of 2014, effective 2016) requires businesses to recycle their organic waste (i.e., food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed in with food waste) depending on the amount of waste they generate per week. This law also requires local jurisdictions across the state to implement an organic waste recycling program to divert organic waste generated by businesses, including multi-family residential dwellings that consist of five or more units. The minimum threshold of organic waste generation by businesses decreases over time, which means an increasingly greater proportion of the commercial sector will be required to comply.

SB 1383 (2016) requires a 50 percent reduction in organic waste disposal from 2014 levels by 2020, and a 75 percent reduction by 2025—essentially requiring the

diversion of up to 27 million tons of organic waste—to reduce GHG emissions. SB 1383 also requires that not less than 20 percent of edible food that is currently disposed be recovered for human consumption by 2025.

Other State Actions

Senate Bill 97

SB 97 (2007) directed the Governor's Office of Planning and Research and the CNRA to develop guidelines under CEQA for the mitigation of GHG emissions. In 2008, the Governor's Office of Planning and Research issued a technical advisory as interim guidance regarding the analysis of GHG emissions in CEQA documents. The advisory indicated that the lead agency should identify and estimate a project's GHG emissions, including those associated with vehicular traffic, energy consumption, water usage, and construction activities (OPR 2007). The advisory further recommended that the lead agency determine significance of the impacts and impose all mitigation measures necessary to reduce GHG emissions to a level that is less than significant. The CNRA adopted the CEQA Guidelines amendments in December 2009, which became effective in March 2010.

Under the amended CEQA Guidelines, a lead agency has the discretion to determine whether to use a quantitative or qualitative analysis or apply performance standards to determine the significance of GHG emissions resulting from a particular project (Cal. Code Regs. tit. 14, § 15064.4[a]). The CEQA Guidelines require a lead agency to consider the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (Cal. Code Regs. tit. 14, § 15064.4[b]). The CEQA Guidelines also allow a lead agency to consider feasible means of mitigating the significant effects of GHG emissions including reductions in emissions through the implementation of project features or off-site measures (Cal. Code Regs. tit. 14, § 15126.4[c]). The adopted amendments do not establish a GHG emission threshold, instead allowing a lead agency to develop, adopt, and apply its own thresholds of significance or those developed by other agencies or experts. The CNRA also acknowledged that a lead agency could consider compliance with regulations or requirements implementing AB 32 in determining the significance of a project's GHG emissions (CNRA 2009).

With respect to GHG emissions, CEQA Guidelines Section 15064.4(a), as subsequently amended in 2018, states that lead agencies "shall make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions. The CEQA Guidelines now note that an agency "shall have discretion to determine, in the context of a particular project, whether to: (1) [q]uantify greenhouse gas emissions resulting from a project; and/or (2) [r]ely on a qualitative analysis or performance based standards" (Cal. Code Regs. tit. 14, § 15064.4[a]). Section 15064.4(b) states that the lead agency should consider the following when assessing the significance of impacts from GHG emissions on

the environment: (1) the extent a project may increase or reduce GHG emissions as compared to the existing environmental setting; (2) whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and (3) the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (Cal. Code Regs. tit. 14, § 15064.4[b]).

Executive Order S-13-08

EO S-13-08 (November 2008) is intended to hasten California's response to the impacts of global climate change, particularly sea-level rise. Therefore, the EO directs state agencies to take specified actions to assess and plan for such impacts. The final *2009 California Climate Adaptation Strategy* report was issued in December 2009, and an update, *Safeguarding California: Reducing Climate Risk*, followed in July 2014. To assess the state's vulnerability, the report summarizes key climate change impacts to the state for the following areas: Agriculture, Biodiversity and Habitat, Emergency Management, Energy, Forestry, Ocean and Coastal Ecosystems and Resources, Public Health, Transportation, and Water. Issuance of the *Safeguarding California: Implementation Action Plans* followed in March 2016. In January 2018, the CNRA released the *Safeguarding California Plan: 2018 Update,* which communicates current and needed actions that state government should take to build climate change resiliency.

Regional

San Diego Association of Governments Regional Transportation Plan/Sustainable Communities Strategy

As discussed above, the passage of SB 375 requires Metropolitan Planning Organizations (MPOs) to prepare a Sustainable Communities Strategy (SCS) in their Regional Transportation Plan (RTP). The San Diego Association of Governments (SANDAG) serves as the MPO for the San Diego region and is responsible for developing and adopting a SCS that integrates transportation, land use, and housing to meet GHG reduction targets set by CARB. The RTP/SCS is updated every 4 years in collaboration the 18 cities and unincorporated County of San Diego, in addition to regional, state, and federal partners. The most recent plan, *San Diego Forward: The 2021 Regional Plan* was adopted in 2021 and provides guidance on meeting or exceed GHG targets through implementation of five key transportation strategies including complete corridors, high-speed transit services, mobility hubs, flexible fleets, and a digital platform to tie the transportation system together. Through these strategies, the *2021 Regional Plan* is projected to reduce per capita GHG emissions from cars and light-duty trucks to 20 percent below 2005 levels by 2035, exceeding the regions state-mandated target of 19 percent (SANDAG 2021).

Local

City of Vista General Plan 2030

The City's current Vista General Plan 2030 was adopted in 2012. The General Plan discusses the very real impacts of climate change and the role the City has in contributing to state and national conservations and resiliency goals. It identified the following challenges, opportunities, and climate change issues that are still relevant today:

- The reduction of GHG emissions and other strategies to address climate change is largely dependent on regional, state, national and even worldwide, but the City knows that local efforts will contribute to the global efforts to fight climate change.
- The City sees the opportunity to work closely with other agencies and community partners to achieve resiliency responsibly and efficiently.
- The City will support and implement policies, plans, programs, activities, and regulations to reduce GHG emissions, while encouraging local employers and businesses to do the same.
- There is room to update the Greenhouse Gas Inventory, minimizing fugitive dust, promoting energy conservation and increased energy efficiency, promoting waste reduction and recycling, and using renewable resources.

City of Vista Climate Action Plan

The City adopted their first Climate Action Plan (CAP) in 2012, followed by a CAP Update in October 2021. The 2021 CAP outlines the City's plan to reduce GHG emissions and address the challenges of climate change. The 2021 CAP includes a 2012 baseline inventory, and a 2030 reduction target to align with the state's goals of reducing emissions for 40 percent below 1990 levels. To meet the City's 2030 target, the 2021 CAP identifies strategies and measures to reduce GHG emissions citywide from a variety of emissions sectors. The seven strategies are listed below (City of Vista 2021).

Strategy 1: Increase the Use of Zero-Emission/Alternative Fuel Vehicles

Strategy 2: Reduce Vehicle Miles Traveled

Strategy 3: Reduce Fossil Fuel Use

Strategy 4: Increase Building Energy Efficiency

Strategy 5: Increase Renewable and Zero-Carbon Energy

Strategy 6: Reduce and Recycle Solid Waste

Strategy 7: Carbon Sequestration

City of Vista Energy Roadmap

The City of Vista Energy Roadmap was prepared in July 2012 through the SANDAG Energy Roadmap Program in consultation with City of Vista staff, as a resource to the City for implementing goals and policies laid out in the General Plan and Climate Action Plan for government operations to save energy and money. It provides opportunities to save and reduce GHGs and eight specific strategies, unique to Vista, that the City can improve on for innovative programs for energy efficiency and sustainability in municipal operations and in the communities resulting in municipal cost savings and benefits to the environment. The eight specific measures include:

1. Save energy in city buildings and facilities
2. Promote commuter benefits to employees
3. Demonstrate emerging energy technologies
4. Leverage planning and development authority
5. Green the city vehicle fleet
6. Support green jobs and workforce training
7. Develop employee knowledge of energy efficiency
8. Market energy programs to local residents, schools, and businesses

7.1.3 Existing Conditions

Greenhouse Gases

As defined in California Health and Safety Code section 38505(g) for purposes of administering many of the state's primary GHG emissions reduction programs, GHGs include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3) (see also 14 CCR 15364.5). Some GHGs, such as CO_2, CH_4, and N_2O are emitted into the atmosphere through natural processes and human activities. Of these gases, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Manufactured GHGs, which have a much greater heat-absorption potential than CO_2, include fluorinated gases, such as HFCs, PFCs, and SF_6, which are associated with certain industrial products and processes. The following provides a summary of the most common GHGs and their sources:

Carbon Dioxide. CO_2 is a naturally occurring gas and a by-product of human activities and is the principal anthropogenic GHG that affects the Earth's radiative balance. Natural sources of CO_2 include respiration of bacteria, plants, animals, and fungus; evaporation from oceans; volcanic out-gassing; and decomposition of dead organic matter. Human activities that generate CO_2 are from the combustion of fuels such as coal, oil, natural gas, and wood and changes in land use.

Methane. CH_4 is produced through both natural and human activities. CH_4 is a flammable gas and is the main component of natural gas. Methane is produced through anaerobic (without oxygen) decomposition of waste in landfills, flooded rice fields, animal digestion, decomposition of animal wastes, production and distribution of natural gas and petroleum, coal production, and incomplete fossil fuel combustion.

Nitrous Oxide. N_2O is produced through natural and human activities, mainly through agricultural activities and natural biological processes, although fuel burning and other processes also create N_2O. Sources of N_2O include soil cultivation practices (microbial processes in soil and water), especially the use of commercial and organic fertilizers, manure management, industrial processes (such as in nitric acid production, nylon production, and fossil-fuel-fired power plants), vehicle emissions, and using N_2O as a propellant (such as in rockets, racecars, and aerosol sprays).

Fluorinated Gases. Fluorinated gases (also referred to as F-gases) are synthetic powerful GHGs emitted from many industrial processes. Fluorinated gases are commonly used as substitutes for stratospheric O_3-depleting substances (e.g., CFCs, HCFCs, and halons). The most prevalent fluorinated gases include the following:

Hydrofluorocarbons: HFCs are compounds containing only hydrogen, fluorine, and carbon atoms. HFCs are synthetic chemicals used as alternatives to O3-depleting substances in serving many industrial, commercial, and personal needs. HFCs are emitted as by-products of industrial processes and are used in manufacturing.

Perfluorocarbons: PFCs are a group of human-made chemicals composed of carbon and fluorine only. These chemicals were introduced as alternatives, with HFCs, to the ozone depleting substances. The two main sources of PFCs are primary aluminum production and semiconductor manufacturing. Since PFCs have stable molecular structures and do not break down through the chemical processes in the lower atmosphere, these chemicals have long lifetimes, ranging between 10,000 and 50,000 years.

Sulfur Hexafluoride: SF6 is a colorless gas soluble in alcohol, ether, and slightly soluble in water. SF6 is used for insulation in electric power transmission and distribution equipment, semiconductor manufacturing, the magnesium industry, and as a tracer gas for leak detection.

Nitrogen Trifluoride: NF3 is used in the manufacture of a variety of electronics including semiconductors and flat panel displays.

Chlorofluorocarbons. CFCs are synthetic chemicals that have been used as cleaning solvents, refrigerants, and aerosol propellants. CFCs are chemically unreactive in the lower atmosphere (troposphere), and the production of CFCs was prohibited in 1987 due to the chemical destruction of stratospheric O3.

Hydrochlorofluorocarbons. HCFCs are a large group of compounds, whose structure is very close to that of CFCs—containing hydrogen, fluorine, chlorine, and carbon atoms—but including one or more hydrogen atoms. Like HFCs, HCFCs are used in refrigerants and propellants. HCFCs were also used in place of CFCs for some applications; however, their use in general is being phased out.

Black Carbon. Black carbon is a component of $PM_{2.5}$, which has been identified as a leading environmental risk factor for premature death. It is produced from the incomplete combustion of fossil fuels and biomass burning, particularly from older diesel engines and forest fires. Black carbon warms the atmosphere by absorbing solar radiation, influences cloud formation, and darkens the surface of snow and ice, which accelerates heat absorption and melting. Black carbon is a short-lived substance that varies spatially, which makes it difficult to quantify the global warming potential (GWP). Diesel exhaust emissions are a major source of black carbon and are TACs that have been regulated and controlled in California for several decades to protect public health. In relation to declining DPM as a result of CARB's regulations pertaining to diesel engines, diesel fuels, and burning activities, CARB estimates that annual black carbon emissions in California have reduced by 70 percent between 1990 and 2010, with 95 percent control expected by 2020 (CARB 2014).

Water Vapor. The primary source of water vapor is evaporation from the ocean, with additional vapor generated by sublimation (change from solid to gas) from ice and snow, evaporation from other water bodies, and transpiration from plant leaves. Water vapor is the most important, abundant, and variable GHG in the atmosphere and maintains a climate necessary for life.

Ozone. Tropospheric O_3, which is created by photochemical reactions involving gases from both natural sources and human activities, acts as a GHG. Stratospheric O_3, which is created by the interaction between solar ultraviolet radiation and molecular oxygen, plays a decisive role in the stratospheric radiative balance. Depletion of stratospheric O_3, due to chemical reactions that may be enhanced by climate change, results in an increased ground-level flux of ultraviolet-B radiation.

Aerosols. Aerosols are suspensions of particulate matter in a gas emitted into the air through burning biomass (plant material) and fossil fuels. Aerosols can warm the atmosphere by absorbing and emitting heat and can cool the atmosphere by reflecting light.

Global Warming Potential

Gases in the atmosphere can contribute to climate change both directly and indirectly. Direct effects occur when the gas itself absorbs radiation. Indirect radiative forcing occurs when chemical transformations of the substance produce other GHGs, when a gas influences the atmospheric lifetimes of other gases, and/or when a gas affects atmospheric processes that alter the radiative balance of the Earth (e.g., affect cloud formation or albedo) (EPA 2022). The Intergovernmental

Panel on Climate Change (IPCC) developed the GWP concept to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The GWP of a GHG is defined as the ratio of the time-integrated radiative forcing from the instantaneous release of one kilogram of a trace substance relative to that of one kilogram of a reference gas (IPCC 2014). The reference gas used is CO_2; therefore, GWP-weighted emissions are measured in metric tons of CO_2 equivalent (MT CO_2e).

The IPCC's Fourth Assessment Report indicates that the GWP for CH_4 is 25 (so emissions of 1 MT of CH_4 are equivalent to emissions of 25 MT of CO_2), and the GWP for N_2O is 298 (IPCC 2007).

Sources of Greenhouse Gas Emissions

Global Inventory

Anthropogenic GHG emissions worldwide in 2019 (the most recent year for which data is available) totaled approximately 52,400 million metric tons (MMT) of CO_2e, excluding land use change and forestry (PBL 2020). The top six GHG emitters include China, the United States, the Russian Federation, India, Japan, and the European Union, which accounted for approximately 62 percent of the total global emissions, or approximately 32,500 MMT CO_2e (PBL 2020). **Table 7.1** presents the top GHG-emissions-producing countries.

Table 7.1: Six Top GHG Producer Countries

Emitting Countries	2019 GHG Emissions (MMT CO2e)[a,b]
China	14,000
United States	6,600
European Union	4,300
India	3,700
Russian Federation	2,500
Japan	1,400
Total	32,500

Source: PBL 2020.

Notes: MMT CO_2e = million metric tons of carbon dioxide equivalent.
[a] Column may not add due to rounding.
[b] GHG emissions do not include land use change and forestry-related GHG emissions.

National Inventory

Per the EPA Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990 to 2020 (EPA 2022), total United States GHG emissions were approximately 5,981.4 MMT CO_2e in 2020 (EPA 2022). The primary GHG emitted by human activities in the United States was CO_2, which represented approximately 78.8 percent of total GHG

emissions (4,715.7 MMT CO_2e). The largest source of CO_2, and of overall GHG emissions, was fossil-fuel combustion, which accounted for approximately 92.1 percent of CO_2 emissions in 2020 (4,343 MMT CO_2). Relative to 1990, gross United States GHG emissions in 2020 were 7.3 percent lower, down from the high of 15.7 percent above 1990 levels in 2007. GHG emissions decreased from 2019 to 2020 by 9.0 percent (590.4 MMT CO_2e) and overall, net emissions (including sinks) decreased 10.6 percent from 2019 to 2020 and 21.4 percent from 2005 levels (EPA 2022).

State Inventory

According to California's 2000–2019 GHG emissions inventory (2021 edition), California emitted approximately 418 MMT CO_2e in 2019, including emissions resulting from out-of-state electrical generation (CARB 2022). The sources of GHG emissions in California include transportation, industry, electric power production from both in-state and out-of-state sources, residential and commercial activities, agriculture, high-GWP substances, and recycling and waste. **Table 7.2** presents California GHG emission source categories and their relative contributions to the emissions inventory in 2019.

Between 2000 and 2019, per-capita GHG emissions in California have dropped from a peak of 14.0 MT per person in 2001 to 10.5 MT per person in 2019, representing an approximate 25 percent decrease. In addition, total GHG emissions in 2019 were approximately seven MMT CO_2e lower than 2018 emissions (CARB 2022).

Table 7.2: GHG Emissions Sources in California

Source Category	Annual GHG Emissions (MMT CO_2e)	% of Total[a]
Transportation	166.1	39.7%
Industrial	88.2	21.1%
Electric power	58.8	14.1%
Commercial and residential	43.8	10.5%
Agriculture	31.8	7.6%
High global-warming potential substances	20.6	4.9%
Recycling and waste	8.9	2.1%
Total	**418.2**	**100%**

Source: CARB 2022.

Notes: GHG = greenhouse gas; MMT CO_2e = million metric tons of carbon dioxide equivalent.
[a] Column may not add due to rounding.

Local Inventory

According to the GHG inventory data compiled by the Energy Policy Initiative Center (EPIC), the City of Vista emitted over 600,000 MT CO_2e in 2012 (EPIC 2018). As outlined in **Table 7.3** below, on-road transportation generated 49 percent of these emissions. Similar to emissions trends statewide, electricity generation is the second largest emitter.

Table 7.3: City of Vista Greenhouse Gas Inventory (2012)

Sector	Annual GHG Emissions (MMT CO_2e)	% of Total
On-Road	297,000	49%
Electricity	185,000	31%
Natural Gas	82,000	14%
Off-road Transportation	17,000	3%
Solid Waste	14,000	2%
Water	6,000	1%
Wastewater	3,000	<1%
Total	603,000	100

Source: EPIC 2018, City of Vista 2021.

Projections and Reduction Targets

Citywide emissions projections as modeled in the CAP were based on a continuation of current trends in activity, population, and job growth. The business-as- usual (BAU) conditions provide estimates of citywide emissions into the future assuming no changes in citywide activities.

Trends indicate a decrease in emissions through 2020 under BAU conditions to 14 percent below 2012 baseline levels primarily due to the city's implementation of the 2012 CAP and federal and state actions. Citywide emissions under BAU conditions would steadily rise after 2020 through 2030, but would still be eight percent below 2012 baseline levels.

Reduction targets identified for the City to achieve, as shown below in **Table 7.4**, are:

- Four percent below 2012 levels by 2020; and
- 42 percent below 2012 levels by 2030.

Additionally, Vista has set a 2030 target based upon the trajectory necessary to meet the statewide 2050 goal. The City's targets would require GHG emissions to be reduced to 580,000 MTCO2e per year in 2020 and 350,000 MTCO2e per year in 2030.

Table 7.4: Greenhouse Gas Emissions Projections and Targets

Projection	2012 Baseline Emissions (MTCO2 e)	2020		2030	
		Total Emissions (MTCO2 e)	Change from 2012 Baseline (%)	Total Emissions (MTCO2 e)	Change from 2012 Baseline (%)
BAU	603,000	521,000	-14	553,000	-8
Legislatively-Adjusted BAU	--	500,000	-17	399,000	-34
Reduction Targets	--	580,000	-4	350,000	-42

Source: EPIC 2019.

Notes: BAU = business-as-usual; GHG = greenhouse gas; $MTCO_2e$ = metric tons of carbon dioxide equivalent

Reduction Strategies and Measures

In order to achieve the City's 2030 reduction target, additional actions beyond those implemented at the federal and state level are required. The Vista CAP identifies seven strategies and detailed measures to reduce GHG emissions citywide from a variety of emissions categories as listed below in **Table 7.5**.

Table 7.5: Summary of Greenhouse Gas Reduction Strategies

Strategy	Description
Strategy 1	Increase the Use of Zero-Emission/Alternative Fuel Vehicles
Strategy 2	Reduce Vehicle Miles Traveled
Strategy 3	Reduce Fossil Fuel Use
Strategy 4	Increase Building Energy Efficiency
Strategy 5	Increase Renewable and Zero-Carbon Energy
Strategy 6	Reduce and Recycle Solid Waste
Strategy 7	Carbon Sequestration

Source: EPIC 2019.

Of the 13 detailed reduction measures identified in the CAP, the four following measures would result in the most significant GHG reductions include:

- Measure E-3: The city to join a program (e.g. community choice energy [CCE] program) to increase the renewable or zero-carbon electricity supplied to the city to 90 percent, reducing citywide emissions by approximately 28,300 MTCO2e in 2030.
- Measure W-1: The city to work with waste haulers to achieve an 85 percent waste diversion target by 2030, which would reduce citywide emissions generated from the waste category by approximately 13,900 MTCO2e.
- Measure T-7: To require all new development projects within the city to have that at least 30 percent of construction equipment be electric-powered or

alternatively fueled. This measure will reduce emissions associated with off-road transportation approximately 3,200 MTCO2e.

- Measure T-3: To require new multi-family and commercial developments to install electric vehicle charging stations in a minimum of three percent of a project's total parking spaces. This measure would encourage residents and workers to drive electric vehicles to and from locations within the city, reducing emissions from the transportation category by approximately 1,500 MTCO2e.

In addition to the CAP, the Vista Energy Roadmap also contains eight specific strategies on energy efficiency and sustainability in municipal operations and in the communities resulting in municipal cost savings and benefits to the environment. The eight specific measures include:

1. Save energy in city buildings and facilities
2. Promote commuter benefits to employees
3. Demonstrate emerging energy technologies
4. Leverage planning and development authority
5. Green the city vehicle fleet
6. Support green jobs and workforce training
7. Develop employee knowledge of energy efficiency
8. Market energy programs to local residents, schools, and businesses

7.2 Climate Change Vulnerability and Adaptation

In addition to the GHG inventory, projections, and reduction targets, the CAP also includes a detail analysis of the City's vulnerability to climate change and provides programs and strategies for adapting to minimize that vulnerability. This section provides a summary of the Climate Change Vulnerability, Resiliency, and Adaptation chapter of the CAP which describes the applicable regulations, policies, programs, and plans that address the effects of climate change; climate-related impacts that may affect Vista in the future; how these impacts would potentially affect the community's population, functions, and structures; and key strategies for improving community resiliency and adaptation, including the City's current adaptation efforts.

7.2.1 Findings

- The annual average maximum temperatures in the City will increase to 77.5°F by 2099, a 4.5°F increase from the historical average. Under the BAU-emissions scenario, the average maximum temperature is expected to reach 79.9°F by 2099, a 6.9°F increase (CEC 2019).
- Under the medium-emissions scenario, the average minimum temperature is expected to reach 56.0°F by 2099, a 4.3°F increase from the historical

average. Under the BAU-emissions scenario, the average minimum temperature is expected to reach 58.6°F by 2099, a 6.9°F increase (CEC 2019).

- The total annual precipitation in Vista will decrease down to 10.0 inches, as compared to 12.9 inches (Cal-Adapt 2018a).
- Increased average temperatures and changes in precipitation patterns because of climate change will result in increased risk of flooding events in the City. Increases in rainfall following periods of drought will result in increases in winter flooding events (McCabe et al. 2007; Das et al. 2013). Additionally, because of the effects of warming, the largest storms in the San Diego region are projected to become even larger. The increased frequency and severity of flooding events in the City will place stresses on the town transportation system and storm water management systems.
- Vista will be at increased risk from wildfire and its associated impacts. The maximum predicted burn probability – the likelihood of an area to burn over a 100-year period - within the city limits and SOI is 12 percent. Approximately 60 percent of the plan area was classified as non-burnable while approximately 19 percent of the plan area is classified as middle, higher, or highest burn probability.

7.2.2 Regulatory Setting

Federal, state and regional regulations governing climate change vulnerability and adaptation have been identified in Section 5.1, Air Quality and 7.1.2, Greenhouse Gas Emissions above. Climate change vulnerability and adaption directly relate to greenhouse gas emissions so governing regulations are synonymous between the two.

Local

City of Vista General Plan 2030

Additional Local policy is set forth in the City of Vista General Plan 2030. There are numerous goals and policies aimed to reduce overall GHG emissions and address climate change vulnerability and adaptation across many of the Elements of the city's General Plan (City of Vista 2012) as noted below:

Circulation Element

- **GOAL 3:** Support a regional transportation system that serves existing and future travel between Vista and other population and employment centers in North San Diego County and the larger region.
- **GOAL 5:** Encourage alternative forms of transportation to private automobiles that meet the needs of all city residents by providing improved access to transit connections to employment and other activity centers.

- **GOAL 6:** Develop an efficient bicycle and pedestrian circulation system that improves access and linkages in a manner that is human-scaled, bicycle- and pedestrian-oriented, and transit-accessible, encourages use of these facilities for recreation, and provides alternatives to the personal automobile.

Land Use and Community Identity Element

- **GOAL 4:** Promote sustainable and smart growth land use patterns and development regulations and guidelines.

Public Safety, Facilities, and Services Element

- **GOAL 4:** Reduce damage, losses, and the risk to the community from flooding, other forms of severe weather, dam inundation, and other hydrologic hazards**.**
- **GOAL 11:** Continue to ensure that the city has an adequate, safe, and reliable water supply to meet the existing and planned needs of the community.
- **GOAL 15:** Provide and maintain public facilities, including the Civic Center, maintenance and warehouse facilities, as well as city welcome signs and other community identifiers, to serve the citizens of Vista and meet their existing and anticipated needs.

Resource Conservation and Sustainability Element

- **GOAL 1:** Improve air quality and protect persons and the environment from the effects of air pollution.
- **GOAL 2:** Reduce GHG emissions from community activities and municipal facilities and operations within the city boundaries to support the state's efforts under AB 32, SB 375, and other state and federal mandates, and to mitigate the community's contributions to global climate change.
- **GOAL 3:** Reduce the projected demand for water service in the city through water conservation and increased use of recycled water.
- **GOAL 8:** Provide and preserve open space areas for the protection of public health and safety.
- **GOAL 9:** Continue to provide parkland to effectively serve the recreational needs of the community.
- **GOAL 14:** Promote efficient and sustainable use of energy resources through conservation, demand reduction activities, and alternative energy sources.
- **GOAL 15:** Reduce the amount of solid waste generated and diverted to landfills.

7.2.3 Existing Conditions

Climate Change Effects

The first step in the climate adaptation planning process is to identify what climate change effects the city would experience throughout the latter half of this century (2050-2099). The CAP analyzed a "medium" emissions scenario that models a future where communities attempt to reduce GHG emissions and a "business as usual (BAU)" scenario.

The medium GHG emissions scenario predicts GHG emissions will level off in the middle of the twenty first century (approximately 2040) and decrease to lower than 1990 levels by the end of the century. GHG emissions effects include: increased temperatures and increased frequency of extreme heat events and heat waves; wildfire risks; change in precipitation and hydrology; inland flooding; and increased erosion and ground instability

Increased Temperatures

Annual temperatures in the San Diego region in general and the City in particular are projected to climb steadily. The city's annual average maximum temperature based on historical data from 1950-2005 is 73.0 degrees Fahrenheit (°F). Under the medium-emissions scenario, the annual average maximum temperature is expected to reach 77.5°F by 2099, a 4.5°F increase from the historical average. Under the BAU-emissions scenario, the average maximum temperature is expected to reach 79.9°F by 2099, a 6.9°F increase (CEC 2019).

Similarly, the City's annual average minimum temperature based on historical data from 1950-2005 is 51.7°F. Under the medium-emissions scenario, the average minimum temperature is expected to reach 56.0°F by 2099, a 4.3°F increase from the historical average. Under the BAU-emissions scenario, the average minimum temperature is expected to reach 58.6°F by 2099, a 6.9°F increase (CEC 2019).

Urbanized areas can experience higher temperatures, greater pollution, and negative health effects, especially during summer months, when compared to communities that are more rural. The Urban Heat Island Effect (UHIE) is the term known for the phenomenon where urbanized areas can experience higher temperatures, greater pollution, and negative health effects, especially during summer months, when compared to communities that are more rural. Urban heat islands are created by a combination of heat-absorptive surfaces (e.g., dark pavement and roofing), heat-generating activities (e.g., automobile engines and industrial generators), and the absence of vegetation and "green spaces" (which provides evaporative cooling). The UHIE could affect Vista in several ways as temperatures increase, including increased energy demand for cooling, decreased ambient air quality, and increased heat-related public health risks such as heat stroke, dehydration, and exposure to degraded air quality (California Environmental Protection Agency [CalEPA] 2019).

Increased Frequency of Extreme Heat Events and Heat Waves

Cal-Adapt (a climate change scenario-planning tool developed by the California Energy Commission [CEC] and the University of California Berkeley Geospatial Innovation Facility) defines the "extreme heat" day threshold for the City as 93.4º F or higher. Historically (i.e., between 1950 and 2005, within the warmer season of April 1 through October 31, where the maximum temperature exceeds the historical maximum temperature), the city experienced an average of four extreme heat days annually. The number of extreme heat days as a result of climate change is projected to increase substantially by 2099. Under the medium-emissions scenario, the City is projected to experience an average of 10 extreme heat days per year from 2050 to 2099, an increase of about six days. Under the BAU-emissions scenario, the City is projected to experience an average of 22 extreme heats days per year from 2050 to 2099, an increase of about 33 days (CEC 2019).

Changes in Precipitation Patterns and Water Availability

The climate of the San Diego region is highly variable as shown in the unusually wet years of 2005, 2011, and 2017 and the droughts of 2001-2004, 2007-2010, and 2012-2015. Southern California has the highest year-to-year variability of any place in the continental U.S. While days with measurable precipitation become less frequent in Southern California, extreme precipitation events are projected to intensify (Kalansky and Cayan et al. 2018).

According to Cal-Adapt, California has a highly variable climate and is susceptible to dry spells. Recent research suggests that extended drought occurrence (a "mega-drought") could become more pervasive in future decades (CEC 2019). An extended drought scenario is predicted for all of California from 2051–2070 under a climate model using the BAU-emissions scenario. The extended drought scenario is based on the average annual precipitation over 20 years. This average value equates to 78 percent of the historical median annual precipitation averaged over the North Coast and Sierra California Climate Tracker regions.

Under this scenario, the average precipitation rate is predicted to be 10.0 inches for the City of Vista, as compared to 12.9 inches for the observed average historical rate in the years 1961 to 1990. While this projection appears to show little change in total annual precipitation in California, even modest changes could have a dramatic effect on California's ecosystems.[2]

Increased Likelihood of Flooding

Precipitation volatility is projected to intensify in the future as the global climate continues to warm. While days with measurable precipitation become less frequent in Southern California, extreme precipitation events are projected to intensify.

[2] Data for this 20-year drought scenario also included another 20-year drought scenario for the earlier part of the twenty first century (2023-2042). The model for both was derived from downscaled meteorological and hydrological simulations, and the earlier twenty first century model resulted in the same precipitation rate as the latter century scenario.

Similar to other California regions, the high year-to-year variability of precipitation in San Diego County is heavily affected by extreme precipitation events (days having precipitation at or exceeding the 95th percentile), which accounts for 80 percent of the year-to-year variability (Kalansky and Cayan et al. 2018). Most of the heaviest events occur during winter, although the region occasionally experiences a few high rainfall events from tropical storms or convective rainfall patterns during late summer and early fall.

Vista currently experiences localized flooding in several areas during heavy rainfall and extreme weather events, typically near creeks or tributaries. In the northern portion of the City, these areas include: properties and streets along the western side of E. Vista Way from about Arcardia Avenue to Anza Avenue; along some east and west sections of N. Santa Fe Drive (Cananea Street to W. Orange); and low-lying areas adjacent to Buena Vista Creek from approximately the western boundary of Brengle Terrace Park to the boundary line with Oceanside, southwest of Emerald Drive. In addition, flooding also occurs along properties and roads adjacent to a section of Monte Vista Drive from about Valley Drive to just east of S. Santa Fe Drive. In the southern portion of the city, flooding occurs along low-lying areas adjacent to Buena Creek (a tributary), and adjacent to Agua Hedionda Creek from the boundaries with the City of San Marcos to the east and the City of Carlsbad to the west.

The City's flooding potential is also projected to be exacerbated when experiencing atmospheric rivers. Atmospheric rivers - transports of moisture from the tropics over the Pacific Ocean in long, thin ephemeral filaments responsible for most extremes - will carry more moisture. This trend has recently been detected in observations (Kalansky and Cayan et al. 2018). By the end of the century, the average wettest day every five years is projected to increase by 10-25 percent under the medium emissions scenario and by 15-30 percent under the BAU-emissions scenario. Under BAU emissions scenarios where temperatures are expected to increase more when compared to medium emissions scenarios, the intensity and magnitude of atmospheric rivers are expected to become more severe, resulting in increased regional and localized flooding (Kalansky and Cayan et al. 2018).

Increased Wildfire Risk

As discussed above in Section 7.2.1 and Chapter 6, Hazards and Safety, the reduction in the number of wet days leads to more variable yearly precipitation, which consequently leads to more frequent and intense drought. Longer dry, warm seasons, along with increasing evapotranspiration due to higher temperatures, and lower daytime relative humidity, will cause stronger seasonal dryness of San Diego County landscapes including within the City (Kalansky and Cayan et al. 2018).

According to the San Diego County Multi-Jurisdictional Hazard Mitigation Plan (SDMHMP), most recently updated in 2017, a significant amount of the Vista is exposed to the potential of loss as a result of extreme fire conditions in undeveloped core and interface areas (County of San Diego 2017).

7.3 Key Terms

Adjusted Business As Usual (ABAU). A scenario estimating future annual GHG emissions for a jurisdiction based on key growth factors such as projections for number of households and employment growth which also anticipated GHG reductions that are applied to a jurisdiction's future emissions based on State legislation, which will continue to affect a jurisdictions annual emissions.

Biogeography. The pattern of plants and animal species distributed across geographical areas.

Business As Usual (BAU). A scenario estimating future annual GHG emissions for a jurisdiction based on key growth factors such as projections for number of households and employment growth.

Carbon dioxide (CO2). An odorless and colorless GHG emitted from natural sources, such as the decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic out-gassing. Anthropogenic (man-made) sources include the burning of fossil and other fuels (e.g., coal, oil, natural gas, wood).

Carbon dioxide equivalent (CO2e). A unit for describing how much global warming a given type and amount of GHG may cause, normalized to a functionally equivalent amount or concentration of CO2 as the reference. See Global Warming Potential.

Carbon Sequestration. Atmospheric CO2 taken up through leaves and becomes carbon in the woody biomass of trees and other vegetation where it is stored.

Climate Adaptation. Adjustment or preparation of natural or human systems to a new or changing environment which moderates harm or exploits beneficial opportunities.

Climate Change. Long-term changes in temperature, precipitation, and other elements of the Earth's climate system. An ever-increasing body of scientific research attributes these climatological changes to GHGs, particularly those generated from the human production and use of fossil fuels.

Global Warming Potential (GWP). One type of simplified index based upon properties of the GHG that can be used to estimate the effect on the climate system with reference to CO2. For example, one ton of methane is as potent a GHG as 25 tons of CO2. Therefore, Methane has a GWP of 25 CO2e. See also Carbon dioxide equivalent.

Greenhouse Effect. The Earth's natural warming process. Certain atmospheric gases that trap heat in the atmosphere, causing the greenhouse effect, are referred to as GHGs.

Greenhouse Gases (GHGs). Gases that contribute to the greenhouse effect. Some GHGs such as carbon dioxide (CO2) occur naturally, and are emitted to the atmosphere through natural processes and human activities. Other GHGs (e.g., fluorinated gases) are created and emitted solely through human activities. The principal GHGs that enter the atmosphere because of human activities include: carbon dioxide (CO2), methane (CH4),

nitrous oxide (N2O), chlorofluorocarbons (CFCs), and fluorinated gases (hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF6).

Greenhouse Gas (GHG) Inventory. An accounting of the amount of GHGs emitted to or removed from the atmosphere over a specific period of time (e.g., one year) for a specified area.

Hazard Mitigation. Hazard Mitigation is sustained action taken to reduce or eliminate long-term risk to people and their property from hazards and their effects.

Hydrofluorocarbon (HFCs). Organic compounds that contain fluorine and hydrogen atoms. HFCs are classified as GHG's by the IPCC and are frequently used in air conditioning and as refrigerants. HFCs have a GWP range from 4 to 12,400, depending on the type of HFC.

Methane (CH4). A GHG with GWP of 25. Anthropogenic (human-caused) sources of methane emissions include agricultural activities, natural gas consumption, landfills, wastewater treatment plants, and mobile sources.

Nitrous oxide (N2O). A GHG with GWP of 298. Nitrous oxide sources include wastewater treatment plants, fertilizer application and soil management in agricultural activities, and mobile sources.

Perfluorocarbons (PFCs). A group of human-made chemicals composed of carbon and fluorine only. PFCs are classified as GHG's by the IPCC and are used most commonly used in the manufacturing of semi-conductors and as refrigerants. PFCs have a GWP range from 6,630 to 23,500, depending on the type of PFC.

Representative Concentration Pathway (RCP). The IPCC Fifth Assessment Report uses future emissions scenarios known as Representative Concentration Pathways to estimate scenarios in which varying (higher or lower) levels of GHGs would be emitted in the future. The RCP scenarios take into account various socio-economic assumptions which affect GHG emissions with higher RCP scenarios assuming higher rates of GHG emissions through the end of the century.

Resilience. The ability of a social or ecological system to absorb disturbances while retaining the same basic structure and ways of functioning, the capacity for self-organization, and the capacity to adapt to stress and change.

Sulfur hexafluoride (SF6). An inorganic, colorless, odorless, non-flammable gas. SF6 is classified as a GHG by the IPCC and is primarily used in electronics industry. SF6 have a GWP of 23,500.

Tertiary Impact. A third order impact caused by the results of the primary and secondary effects.

Vulnerability. The extent to which a natural or social system is susceptible to sustaining damage from climate change, and is a function of the magnitude of climate change, the sensitivity of the system to changes in climate and the ability to adapt the system to changes in climate.

Greenhouse Gases

Acronym/Key Term	Definition
CAPCOA	California Air Pollution Control Officers Association
CAP	Climate Action Plan
CARB	California Air Resources Board
MMT	Million metric tons
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
CH_4	Methane
N_2O	Nitrous Oxide
HFCs	Hydrofluorocarbons
PFCs	Perfluorocarbons
SF_6	Sulfur Hexafluoride
O_3	Ozone
NO_x	Oxides of Nitrogen

7.4 References

City of Vista General Plan, 2011

SANDAG, City of Vista Energy Roadmap, 2012

CAPCOA (California Air Pollution Control Officers Association). 2008. CEQA & Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act. January. Available: http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA-White-Paper.pdf. Accessed September 2022.

CARB. 2014. First Update to the Climate Change Scoping Plan Building on the Framework Pursuant to AB 32 – The California Global Warming Solutions Act of 2006. May 2014. Available: https://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/2013_update/first_update_climate_change_scoping_plan.pdf. Accessed September 2022.

CARB. 2017a. California's 2017 Climate Change Scoping Plan. November. Available: https://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/scoping_plan_2017.pdf. Accessed September 2022.

CARB. 2017b. Short-Lived Climate Pollutant Reduction Strategy. March. Available: https://ww2.arb.ca.gov/sites/default/files/2020-07/final_SLCP_strategy.pdf. Accessed September 2022.

CARB. 2022a. California Greenhouse Gas Emissions for 2000 to 2019, Trends and Other Indicators. July 2021. Available: https://ww2.arb.ca.gov/sites/default/files/classic/cc/inventory/2000_2019_ghg_inventory_trends_20220516.pdf. Accessed June 2022.

CARB. 2022b. Draft 2022 Scoping Plan Update. May 10. Available: https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents. Accessed September 2022.

California Energy Commission (CEC). 2021a. Draft Environmental Impact Report for Amendments to the Building Energy Efficiency Standards (2022 Energy Code). May 19. Available: https://ceqanet.opr.ca.gov/2021030504/2. Accessed September 2022.

California Natural Resources Agency (CNRA). 2009. Final Statement of Reasons for Regulatory Action. December. Available: https://resources.ca.gov/CNRALegacyFiles/ceqa/docs/Final_Statement_of_Reasons.pdf. Accessed September 2022.

CNRA. 2022. Natural and Working Lands Climate Smart Strategy. April 22. Available: https://resources.ca.gov/-/media/CNRA-Website/Files/Initiatives/Expanding-Nature-Based-Solutions/CNRA-Report-2022---Final_Accessible_Compressed.pdf. Accessed September 2022.

City of Vista. 2021. City of Vista Climate Action Plan. October. Available: https://www.cityofvista.com/departments/community-development/climate-action-plan. Accessed September 2022.

Energy Policy Initiatives Center. 2018 (August). City of Vista Greenhouse Gas Emissions Inventories and Projections. Prepared for the City of Vista

EPA. 2022. Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2020 EPA 430-R-22-003. Available: https://www.epa.gov/system/files/documents/2022-04/us-ghg-inventory-2022-main-text.pdf. Accessed September 2022.

EPA and NHTSA (Department of Transportation's National Highway Traffic Safety Administration). 2016. EPA and NHTSA Adopt Standards to Reduce Greenhouse Gas Emissions and Improve Fuel Efficiency of Medium- and Heavy-Duty Vehicles for Model Year 2018 and Beyond. August 2016. Available: https://nepis.epa.gov/Exe/ZyPDF.cgi/P100P7NL.PDF?Dockey=P100P7NL.PDF. Accessed September 2022.

IPCC (Intergovernmental Panel on Climate Change). 2007. Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 996 pp. Available: https://www.ipcc.ch/assessment-report/ar4/. Accessed September 2022.

OPR (Office of Planning and Research). 2007. Senate Bill No. 97 Chapter 185. Available: https://opr.ca.gov/docs/SB_97_bill_20070824_chaptered.pdf. Accessed September 2022.

PBL Netherlands Environmental Assessment Agency. 2020. Trends in global CO2 and total greenhouse gas emissions: 2020 Report. December. Available: https://www.pbl.nl/sites/default/files/downloads/pbl-2020-trends-in-global-co2-and_total-greenhouse-gas-emissions-2020-report_4331.pdf. Accessed September 2022.

SANDAG (San Diego Association of Governments). 2021. San Diego Forward: The 2021 Regional Plan. December. Available: https://sdforward.com/mobility-planning/2021-regional-plan. Accessed September 2022.

8.0 Public Facilities, Services, And Infrastructure

This chapter analyzes the existing public facilities, services, and infrastructure within the City of Vista. These components of the built environment have a direct impact on the quality of life for the residents, workforce, and visitors. The following sections examine the water supply and delivery, wastewater collection and treatment, stormwater drainage, solid waste, recycling and composting, dry utilities and telecommunications, fire protection, law enforcement, schools and libraries, and park and recreation facilities.

8.1 Water Supply and Delivery

This section describes the water supply sources, water distribution system facilities, water use, and water conservation programs in the City.

8.1.1 Findings

- Vista Irrigation District (VID) provides water to the City of Vista, as well as portions of the City of San Marcos, Escondido, Oceanside, and portions of unincorporated areas of San Diego County.
- VID's distribution system is comprised of approximately 430 miles of pipeline ranging in diameter from 4-inch to 42-inch, 12 reservoirs, and 7 pump stations. Total capacity of the reservoirs exceeds 46 million gallons.
- VID obtains its water from Lake Henshaw, Northern California, and the Colorado River via the Metropolitan Water District (MWD), and the San Diego County Water Authority (CWA). Water received from the CWA is a combination of imported water, combination of Colorado River Water and State Project Water, and desalinated seawater produced at the Claude "Bud" Lewis Carlsbad Desalination Plant.
- In 2020 the VID served 28,879 municipal connections and supplied 16,416 acre-feet of water to its customers.
- VID prepared an Urban Water Management Plan (UWMP) in 2020. The 2020 Plan outlines VID's strategies to manage reliability through 2045. SANDAG's Series 14 Regional Growth Forecast was used to forecast water demands for years 2025, 2030, 2035, 2040, and 2045.
- Per the 2020 UWMP, if CWA, MWD and VID supplies are developed as planned and conservation targets are achieved, no shortages are anticipated within the VID service area in Normal or Dry Water Year assessments through 2045.
- The UWMP forecasts water supply and demand through the year 2045 based on knowledge of existing land uses. The UWMP should be updated if changes

to the land uses that occur with the General Plan Update significantly alter the assumptions of the UWMP for supply/demand. Additionally, the UWMP only forecasts through the year 2045. The General Plan is anticipated to plan for year 2050. Water supply/demand analysis should be conducted through the year 2050.

8.1.2 Regulatory Setting

Federal

Safe Drinking Water Act (SDWA)

The SDWA was established to protect the quality of drinking water in the United States. The law focuses on all waters actually or potentially designed for drinking use whether from above or below ground water sources.

State

California Water Code

The California Water Code is enforced by the California Department of Water Resources and is responsible for promoting California's general welfare by ensuring beneficial water use and development statewide.

Urban Water Management Planning Act

The California Water Code requires all urban water suppliers in the state to prepare urban water management plans (UWMPs) and update them every five years. Amendments include requirements for water suppliers to analyze the reliability of its water supplies to meet its water use demands over an extended drought period, prepare a drought risk assessment, and specifically address seismic risk and include a lay description of water service reliability.

Sustainable Groundwater Management Act (SGMA)

In September 2014, the Sustainable Groundwater Management Act (SGMA) was signed into law. The law provides new tools and authorities for local agencies to manage groundwater resources within their jurisdiction to achieve a sustainable use of those resources within a 20-year implementation period. While SGMA provides specific mandates only for those groundwater basins deemed by the State to be "medium" or "high" priority groundwater basins, the law encourages the formation of "Groundwater Sustainability Agencies" (GSAs) and the preparation of "Groundwater Sustainability Plans" (GSPs) for all groundwater basins, even those deemed "low" and "very low" priority basins. The VID is investigating groundwater resources in the Warner Basin and evaluating various groundwater management strategies as the Warner Basin represents a significant water source for VID.

Senate Bill 606 (SB 606), and Assembly Bill 1668 (SB 1668)

In November 2009, the State of California enacted Senate Bill X-7-7 that mandated retail urban water agencies within the state to achieve a 20 percent reduction in

urban per capita water use by December 31, 2020 (referred to as "20x2020"). In 2018, new conservation legislation was signed into law. Senate Bill (SB) 606 and Assembly Bill (AB) 1668 created a framework that directed DWR and the State Water Resources Control Board (SWRCB) to develop and adopt long-term water efficiency targets to exceed 20 x 2020 water savings by 2027. Each retail urban water supplier across the state will have a water use target based on efficiency standards for indoor residential water use, landscape irrigation and water loss.

Local

As part of its water supply management policy, VID has implemented a number of local water supply management programs addressing as conjunctive use and conservation to maximize the use of available water resources and minimize the need for imported water. These programs include Conjunctive Use Program, Groundwater Program, and Water Conservation Program.

Conjunctive Use Program

The Conjunctive Use Program was established in 1954 when VID first drilled 38 wells in the Warner Basin to help supplement its local surface water supply, namely Lake Henshaw. VIDs procedure is to use its surface water supply when available and conserve its groundwater for dry years when run-off is minimal and surface water supplies are reduced. During dry years, the groundwater is pumped into Lake Henshaw and released when needed. Conversely, during wet years, the surface water supply is used, and groundwater pumping is halted permitting the Warner Basin to recharge and groundwater supply levels to rise.

Groundwater Program

VID does not participate in any groundwater storage or replenishment programs due to the remote location of its surface water supply. However, because the Warner Basin represents a significant water source for VID, VID is continuing to investigate groundwater resources and evaluate groundwater management strategies.

Water Conservation Program

Established in 1981, the water conservation program has been successful in its efforts to reduce demand and manage water demand as populations grew. As drought gripped California in the early 1990's, water purveyors, including VID, increased their water conservation efforts to reduce demand. Over the years, these programs have been successful in managing water demand as populations grew.

Water Conservation Programs

VID has adopted a Water Supply Response Program (WSRP), which is a comprehensive water conservation program. The WSRP was amended in 2021 to establish six levels of actions, with increasing restrictions on water use, in response to worsening water supply conditions and decreasing available supplies. All six

levels are mandatory and become increasingly restrictive in order to attain escalating conservation goals. The declaration of each level is based on the condition of the potable water supply:

Level 1 – Water Efficiency

Level 1 applies at all times up to and including 10 percent water shortage, unless the VID Board of Directors has declared another level. Level 1 is designed to ensure customers use water efficiently and eliminate waste at all times. Mandatory water use efficiency practices are in effect.

Level 2 – Water Conservation

Cutbacks are required by drought or other reductions in supplies and a reduction of up to and including 20 percent is required to meet demands. Water conservation measures are mandatory.

Level 3 - Water Shortage

Increasing cutbacks required by drought or other reductions in supplies and a reduction of up to and including 30 percent is required to meet demands. Water conservation measures are mandatory.

Level 4 – Critical Water Shortage

Increasing cutbacks required by drought or other reductions in supplies and a reduction of up to and including 40 percent is required to meet demands. Water conservation measures are mandatory.

Level 5 – Water Emergency

Water shortage emergency is declared and a reduction of up to and including 50 percent is required to meet demands. Water conservation measures are mandatory.

Level 6 – Critical Water Emergency

Water shortage emergency is declared and a reduction of more than 50 percent is required to meet demands. Water conservation measures are mandatory.

As soon as a particular level is declared to exist, the water-use efficiency practices, water conservation measures and/or mandatory water use restrictions set forth in that level will apply to all VID water services until a different level is declared.

Recycled Water Program

Wastewater collection, treatment, and disposal services within the VID's boundaries are provided by the Vista Sanitation District, Buena Sanitation District, and Vallecitos Water District. VID was the distributor of recycled water produced by the City of Vista (Buena Sanitation District) at the Shadowridge Water Reclamation Plant (SWRP). VID distributed up to 300 acre-feet (AF) per year of recycled water to the Shadowridge Golf Course when the SWRP was operational. The City of Vista

suspended operation of the SWRP in December 2003 due to high production costs. VID currently does not supply recycled water in their service area and has no plans to do so during the time-period covered in the 2020 Plan.

8.1.3 Existing Conditions

Vista Irrigation District

The City's water is supplied by the VID, an independent entity governed by an independent five-member Board of Directors. VID provides water to much of northern San Diego County, also provides water to portions of including the City of Vista, portions of San Marcos, Escondido, Oceanside, and some unincorporated areas. **See Figure 8.1.**

VID receives a variety of water to supply its customers, including imported water from the San Diego County Water Authority (CWA), including desalinated seawater produced at the Claude “Bud” Lewis Carlsbad Desalination Plant, and local water from its Lake Henshaw facilities. Most of CWA's water supply is from the Metropolitan Water District (MWD), although CWA is pursuing projects to diversify its supplies.

VID’s original source of water, dating back to 1926, was from Lake Henshaw. The Lake was later purchased by the VID, along with the 43,000-acre Warner Ranch, in 1946. However, drought conditions and population growth eventually caused the District to look for other sources of water. In 1954, VID became a member of the San Diego County Water Authority to take advantage of water imported from the Colorado River and Northern California.

In December 2015, the San Diego County Water Authority began receiving and distributing desalinated seawater from the Claude "Bud" Lewis Carlsbad Desalination Plant to its member agencies, including the VID.

Historically, 30 percent of the VID’s water has come from Lake Henshaw and 70 percent is purchased from the Water Authority and includes imported water from the Colorado River, the Sacramento River/San Joaquin River Delta in Northern California, and desalinated sea water. During years when rainfall is significantly below average and the availability of local water is limited, well over 90 percent of VID’s water supply is purchased.

Water Distribution System

VID’s population served has increased by 42 percent from 1990 to 2020 (94,526 to 134,588). VID now serves more than 135,000 people via approximately 28,500 metered residential and commercial connections. VID provided an average of 13.6 million gallons per day of potable water during the 2020 fiscal year.

VID's distribution system is comprised of approximately 430 miles of pipeline ranging in diameter from four-inch to 42-inch, 12 reservoirs, and seven pump stations. Total capacity of the reservoirs exceeds 46 million gallons. **See Figure 8.1.**

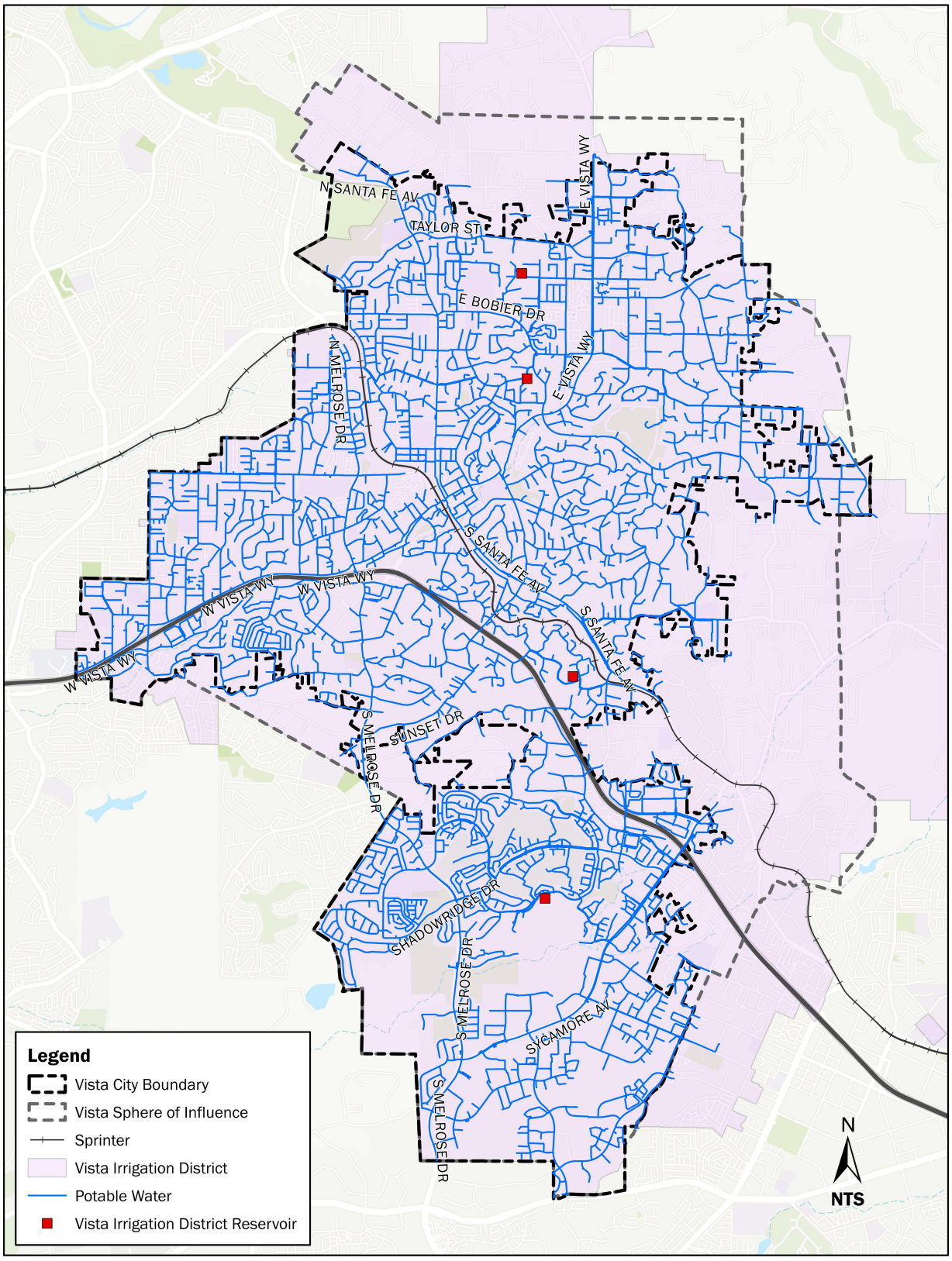
However, water received for delivery to its customers has remained relatively constant. Water received for delivery has averaged 20,277 acre-feet per year (AF/YR) over this period which is less than water received for delivery in 1990 (22,530 AF/YR).

VID and other Water Authority member agencies partnered with Metropolitan and/or the Water Authority to offer conservation programs to their customers in the early 1990's. Since that time, the Water Authority and its member agencies have jointly funded programs (public education and financial incentives) that benefit the region as a whole. Examples include residential, commercial, industrial, and institutional (CII) voucher/rebate programs, water surveys, professional and homeowner landscape classes, and landscape assistance programs.

Escondido-Vista Water Treatment Plant

The Escondido-Vista Water Treatment Plant (Plant), jointly owned by the City of Escondido and VID, was constructed in 1976 and has capacity to produce 75 million gallons of potable water per day. The Plant uses a combination of mechanical and chemical processes to remove constituents from the raw water supply; the result is water meeting all state and federal requirements. The treated water travels 14 miles from the Plant through the Vista Flume to the VID's service area to residents taps. Major upgrades to the Plant, including the installation of state-of-the-art on-site chlorine dioxide generation, were completed in 2017. Emergency power generators capable of managing the demands of the redesigned Plant, even during a power outage, were also added as part of the upgrades. These improvements greatly enhance the security, safety, and reliability of the overall water treatment process.

Figure 8.1: Water System and VID Boundaries



Water Supply

Per the UWMP, the VID plans to use its local water supply, in conjunction with water received from the Water Authority to meet demands in its services area. If VID delivers its local water supply as projected and the Water Authority and Metropolitan's supplies are developed as planned, no shortages are anticipated within its service area in a normal year. **Table 8.1** below provides total quantities of current and planned water supplies for VID in a normal year (NOTE: The quantities shown in the table below assume the implementation and achievement of SBX 7-7 conservation goals).

Table 8.1: Current And Planned Water Supplies (Normal Year - AF/YR)

Water Supply Sources	2020	2025	2030	2035	2040	2045
Purchased from Water Authority	3,136	5,659	6,717	7,462	8,253	8,828
Provided by Reclamation	9,195	7,900	7,900	7,900	7,900	7,900
VID surface water diversions	3,860	5,000	5,000	5,000	5,000	5,000
VID produced groundwater	-	-	-	-	-	-
Recycled Water	0	0	0	0	0	0
Total	16,416	18,559	19,617	20,362	21,153	21,728

Source: Vista Irrigation District, UWMP

Groundwater

VID augments the natural runoff into Lake Henshaw with groundwater that is pumped into the lake from the Warner Springs Groundwater Basin and released when needed. Conversely, during wet-years, the surface water supply is used, and groundwater pumping is halted permitting the Warner Basin to recharge and groundwater supply levels to rise.

In 2018, VID prepared an assessment of the Warner Springs Groundwater Basin and concluded that they could extract up to 9,100 AF/YR of groundwater on a substantial long-term basis. Approximately 40 percent of the groundwater is distributed to VID.

8.1.4 Water Use and Projected Demand

Water use in the VID's service area falls into two classes, municipal/industrial (residential and non-residential) and agriculture. Municipal and industrial uses currently constitute approximately 95 percent of the VID's water consumption. The remaining five percent is attributable to agricultural water use, primarily for irrigation of groves and nursery products. This Chapter describes the VID's current and projected water use.

VID is considered a potable water supplier only. VID does not own and maintain a recycled water distribution system and does not have recycled water demand.

Demands for Potable Water

Per the UWMP, in 2020, the total demand for potable water within the VID service area across all residential and non-residential uses was 16,416 AF. Residential uses account for the highest percentage of water use with single-family homes accounting for 46 percent of the total annual water and multifamily accounting for around 17 percent.

Projected Demand

Table 8.2 below shows the projected demands per use type for VID's service area through 2045 per the UWMP. As discussed above, the current annual water demand in 2020 was 16,416 AF per year. As seen in **Table 8.2**, the water demand is expected to increase to 18,559 AF in 2025 and increase further to 21,728 AF annually in 2045. That is an approximately 25 percent increase in water demand over the next 25 years.

Table 8.2: Use for Potable Water - Projected

Use Type	Projected Water Use				
	2025	2030	2035	2040	2045
Single Family	8,840	9,284	9,600	9,858	10,083
Multi-family	3,230	3,558	3,777	4,069	4,215
Commercial	1,283	1,360	1,425	1,490	1,555
Industrial	606	630	644	658	678
Institutional/Governmental	321	341	357	374	390
Landscape	2,135	2,275	2,371	2,474	2,558
Groundwater Recharge[1]	N/A	N/A	N/A	N/A	N/A
Saline water intrusion barrier	N/A	N/A	N/A	N/A	N/A
Agricultural irrigation	435	412	390	387	385
Sales/transfers/exhchanges[2]	N/A	N/A	N/A	N/A	N/A
Losses	1,220	1,260	1,300	1,345	1,355
Other potable	437	445	446	446	457
Other	52	52	52	52	52
Total	18,559	19,617	20,362	21,153	21,728

NOTES:

1 The District does not currently replenish groundwater supplies or inject water into freshwater aquifers to prevent intrusion of saltwater.

2 The District does not wholesale water to other agencies. All exchanges of potable water with other agencies are tracked by the District's wholesale agency, the Water Authority, and demands are allocated to each agency accordingly.

Source: Vista Irrigation District, UWMP

8.2 Wastewater Collection and Treatment

This section describes the wastewater collection including the demand and available capacity in the City of Vista.

8.2.1 Findings

- The City of Vista operates and maintains both its own sanitary collection system and the Buena Sanitation District's (BSD's) sanitary collection system. Each system is a distinct legal entity, and both convey their sewage for treatment at the Encina Water Pollution Control Facility (EWPCF) which is operated by the Encina Wastewater Authority (EWA). Both are primarily gravity systems, although there are four sewer lift stations.
- The City of Vista/BSD have entered into Service Agreements with the City of San Marcos, County of San Diego, City of Carlsbad, City of Oceanside, Vallecitos Water District (VWD), and Encina Wastewater Authority (EWA) to serve small pockets of adjacent communities.
- As of 2009, expansion to the EWPCF was completed allowing for approximately 43.3 million gallons per day (MGD). This was done to accommodate anticipated wastewater flows through 2025.
- In 2016, wastewater flows to EWPCF totaled approximately 20.76 MGD; Approximately 26 percent of flows originated from the City and approximately 7 percent originated from BSD.
- The City of Vista and BSD are required by the SWRCB Order No. 2006-003 to manage, operate, and maintain the sanitary sewer system in a manner that prevents a sanitary sewer overflow which can endanger public health and safety. Major components of the Order require the City and BSD to have a Sewer System Management Plan (SSMP), Rehabilitation and Replacement (R&R), and Capacity Assurance Plans.
- In 2017, the City and BSD prepared a Sewer Master Plan Update (Master Plan). The Master Plan provides a comprehensive review of the City's existing sewer system and identifies capital improvements necessary to accommodate future sewer flow projections based on the adopted land uses identified in the City of Vista's current General Plan 2030.
- A Sewer Master Plan Update will need to be prepared to identify future capital improvements necessary to accommodate future sewer flow projections based on the in progress 2050 General Plan Update.

8.2.2 Regulatory Setting

Federal

Clean Water Act

The Clean Water Act requires that states adopt water quality standards to protect public health, enhance the quality of water resources, and ensure implementation of Act.

Section 401 of the Clean Water Act requires an applicant for a federal permit, such as the construction or operation of a facility that may result in the discharge of a pollutant, to obtain certification of those activities from the state in which the discharge originates. This process is known as the Water Quality Certification for the project. The San Diego Regional Water Quality Control Board (SDRWQCB) issues Section 401 permits for projects located within the County of San Diego.

Section 402 of the Clean Water Act established the National Pollution Discharge Elimination System (NPDES) to control water pollution by regulating point sources that discharge pollutants into waters of the United States. In the State of California, the Environmental Protection Agency (EPA) authorized the State Water Resource Control Board (SWRCB) permitting authority to implement the NPDES program.

Section 404 of the Clean Water Act established a permitting program to regulate the discharge of dredged or filled material into waters of the United States. This permitting program is administered by the Army Corps of Engineers (ACOE) and is enforced by the Environmental Protection Agency (EPA).

Section 303(d) of the Clean Water Act requires the SWRCB to develop a list of water quality limited segments for jurisdictional waters of the United States. The Regional Water Quality Control Board (RWQCB) is responsible for establishing priority rankings and developing action plans, referred to as total maximum daily loads (TMDLs), to improve water quality of waterbodies included in the 303(d) list.

State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Act, Division 7 of the California Water Code is the basic water quality control law for California. Its goal was to create a regulatory program to protect water quality and beneficial uses of the state's waters. Because of this, the state and regional boards were established to implement and enforce the Clean Water Act and state-adopted water quality control plans. Each RWQCB is responsible for water quality control planning within its region. San Diego County falls within the jurisdiction of the SDRWQCB (Region 9).

Water Quality Control Plan for the San Diego Basin (Region 9)

The federal Clean Water Act, NPDES program, California Water Code, and Porter-Cologne Water Quality Control Act, require that the SDRWQCB adopt a water quality control plan to guide and coordinate the management of water quality in the region.

Adopted in 1994, the San Diego Basin Plan outlines water quality planning guidelines for the San Diego region watersheds.

8.2.3 Existing Conditions

The City of Vista

The City of Vista operates and maintains both the City of Vista Sanitation District, which serves approximately 16,000 parcels within the City, and the Buena Sanitation District, a former County sanitation district that serves over 5,300 parcels within the City and portions of the unincorporated county to the southeast. **See Figure 8.2.** Although each sewer collection district is its own entity, all sewage goes to the Encina Wastewater Authority (EWA), a public agency that provides wastewater treatment service to residents in northwestern San Diego County.

Vista Sanitary District was originally formed in 1928 serving a small area of downtown Vista. The San Diego County Board of Supervisors was the governing body of the sanitation district until the incorporation of the City of Vista in 1963. The Vista Sanitation District entered into a Joint Power Agreement with the City of Carlsbad and subsequently connected to the Encina Water Pollution Control Facility in 1965. In 1983, the Vista Sanitation District was dissolved, and all rights and obligations of the Vista Sanitation District was assumed by the City of Vista. All sanitation functions are now provided by City staff.

The City of Vista owns and operates over 215 miles of sewer collection pipeline serving approximately 16,000 parcels and conveying approximately 5.3 MGD.

The City of Vista also owns one pump station, the Raceway Pump Station, and shares ownership and operation of two large capacity pump stations (Agua Hedionda and Buena Vista Pump Stations) and associated pipelines with the City of Carlsbad. In August 2017, the Sewer Master Plan was updated by the City of Vista and provides an updated inventory, a condition and capacity deficiency report, and recommended improvements.

Buena Sanitation District

BSD was organized in 1960 with the San Diego County Board of Supervisors acting as its governing Body. It connected to the Encina Water Pollution Control Facility in 1965. In 1998, because of population changes within the district, the San Diego County Board of Supervisors adopted Resolution No. 98-289 which designated the City of Vista as the Board of Directors of Buena Sanitation District.

The BSD which is an entity of the City, owns and operates approximately 101 miles of sewer collection pipelines serving approximately 5,300 parcels and conveying approximately 1.6 million gallons per day (MGD). BSD owns one pump station, the Buena Creek Pump Station. Both collection systems convey sewage to the Encina Water Pollution Control Facility (EWPCF) in the city of Carlsbad for treatment.

The City of Vista and BSD are required by the SWRCB Order No. 2006-003 to manage, operate, and maintain the sanitary sewer system in a manner that prevents a sanitary sewer overflow which can endanger public health and safety. Major components of the Order require the City and BSD to have a Sewer System Management Plan (SSMP), Rehabilitation and Replacement (R&R), and Capacity Assurance Plans.

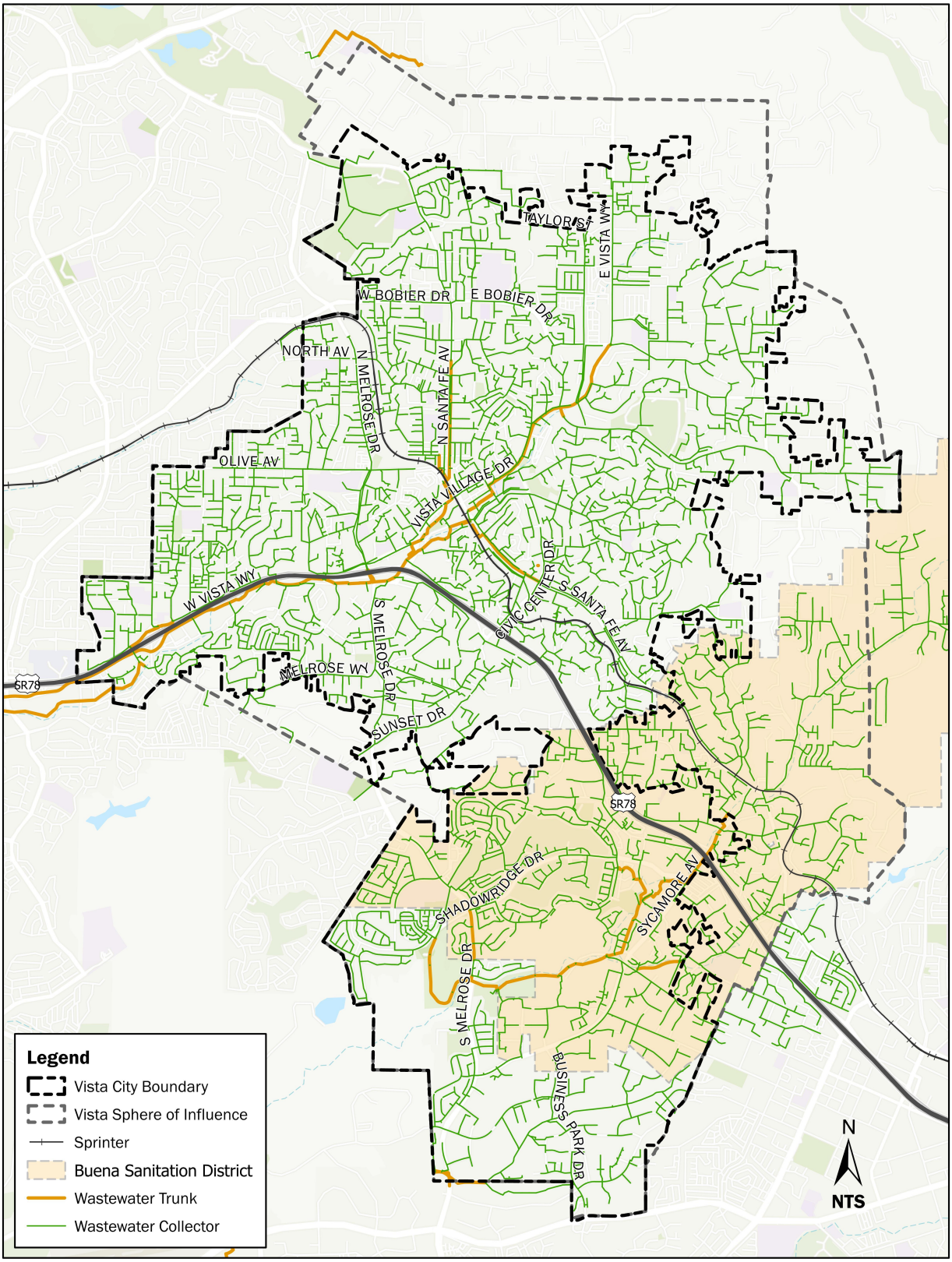
8.2.4 System Capacity

The existing sewer collection system consists of over 300 miles of gravity pipelines, four pump stations, and a series of force mains and interceptors/outfalls that deliver sewage from the City and District to the EWPCF. **See Figure 8.2.**

As part of the 2017 Sewer Master Plan Update, the City evaluated the existing sewer system during peak hours of wet weather conditions to determine if/where there were deficiencies in the system. As part of this analysis, it was determined that 10,073 feet of pipe would need to be upgraded in order to convey the peak wet weather flows. It is not clear to what extent these upgrades have occurred.

The 2017 Sewer Master Plan Update evaluated capacity of the sewer system based on buildout of the current Vista General Plan 2030. In addition to the 10,073 feet of pipe upgrades currently needed, it was determined that an additional 6,451 feet of pipe would need to be upgraded before buildout of the General Plan.

Figure 8.2: Wastewater System and Districts



8.2.5 Projected Demand Through 2030 Buildout

The buildout sewer service area was assumed to include all current service areas and areas within Vista's Sphere of Influence, as well as properties within these boundaries currently on septic. The projected sewer flows were calculated at buildout and at maximum density, and are summarized in **Table 8.3** below:

Table 8.3: Projected Sewer Flows

Basin	2017 Flow (MGD)	Projected Sewer Flows (Based on 205 gpd/EDU)		
		2017 + Septic (MGD)	2030 Buildout (MGD)	Max Density (MGD)
Vista Basin	4.94	5.18	8.56	11.60
Buena Basin	2.03	2.04	4.22	5.89
Raceway Basin	0.34	0.35	0.87	1.32
All Basins	**7.30**	**7.57**	**13.65**	**18.81**

Source: 2017 Sewer Master Plan – City of Vista

These future sewer flows were estimated based on land use information from the current Vista General Plan 2030, San Diego County SANGIS land use information, and additional interagency agreements. Based on 2015 flow meter data, system flows have been evaluated to be approximately 204 gpd per equivalent dwelling unit (EDU). Future flows were evaluated assuming 205 gpd/EDU.

8.2.6 System Maintenance

The City of Vista and the Buena Sanitation District's sewage collection systems are managed, operated, and maintained by the City of Vista. A Sewer System Management Plan (SSMP) has been prepared and establishes the minimum requirements under which the sewage collection systems must be operated and maintained. The SSMP functions as a living document subject to constant review and revision as conditions change.

The City has undertaken several major projects to ensure the reliability of the sewer systems which are identified below:

- Completion of a comprehensive CCTV inspection in which the data collected was used to enhance the City's GIS, and provided accurate condition assessments for the City's CIP Program.
- Completion of the Sewer System Management Plan (SSMP) in 2017, which included flow studies for capacity and condition assessments.
- Development of a sewer system specifications manual to ensure proper installation, rehabilitation, repair, and inspection for future projects.

- The City Wastewater Division has a maintenance program that prioritizes operational and maintenance needs based on the structural condition of the existing pipelines.
- City crews clean the entire combined sewer system every 18 months using combination jetting/vacuum trucks.

All pump stations are operated and maintained by EWA.

8.2.7 Capital Improvement Program (CIP)

Both the City and BSD have prepared estimates of the capital improvements costs associated with the refurbishment and replacement needs through FY 2025. The proposed CIP will be funded entirely through rate revenues and reserves.

8.3 Stormwater Drainage

This Section describes stormwater drainage facilities in the City of Vista and provides broad context to the regulatory setting. Chapter 5 of this report provides more comprehensive discussion of existing water quality conditions and the regulatory environment for stormwater pollution prevention.

8.3.1 Findings

- Stormwater drainage conveyance within the City of Vista occurs in a variety of storm drain pipes, culverts, and channels that together comprise the Municipal Separate Storm Sewer System (MS4). The MS4 is distinct from the sanitary sewer system. No stormwater runoff (drainage water) within the City of Vista is directed to the sanitary sewer system. Much of the stormwater runoff that enters the City of Vista's MS4 flows to local creeks and other water bodies without first being directed to a traditional treatment plant. Requirements for new development and redevelopment to include structural features to treat pollutants in storm water runoff have been in place since 2001. However, much of the City of Vista's infrastructure was constructed prior to 2001 and does not include features to treat pollutants in storm water runoff.
- The City of Vista maintains an inventory of its stormwater system conveyance structures and performs routine maintenance of City-owned portions of the stormwater system, including over 1,250 MS4 inlets.
- The City of Vista provides on-going repair or replacement of storm drain conduits throughout the City that have reached the end of their useful life, have failed as identified by the storm drain inventory, or where needed prior to overlay or slurry seal pavement rehabilitation work being performed. There is an on-going need to replace existing metal storm drain pipes.
- The City of Vista's stormwater system is subject to a wide range of flow control and pollution prevention requirements under a National Pollutant Discharge Elimination System (NPDES) Permit issued by the California

Regional Water Quality Control Board San Diego Region. See Section 5.2, Water Resources and Quality, in Chapter 5, Natural Resources, of this document for further information regarding water quality requirements for the City of Vista's stormwater system. These requirements influence design of new stormwater conveyance systems and direct multiple City activities related to operation and maintenance of the MS4 system.

- Buena Vista Creek and Agua Hedionda Creek traverse the City of Vista. Flooding from these creeks represents a high-priority safety issue for the City. These two creeks and portions of some of their tributaries have Special Flood Hazard Areas (SFHAs) mapped by the Federal Emergency Management Agency (FEMA). Development within SFHAs is subject to National Flood Insurance Program (NFIP) regulations.

8.3.2 Regulatory Setting

Federal

National Flood Insurance Program

The National Flood Insurance Program (NFIP) is a Federal program enabling property owners in participating communities to purchase insurance protection against losses from flooding. In support of the NFIP, the Federal Emergency Management Agency (FEMA) identifies flood hazard areas throughout the United States and its territories by producing Flood Hazard Boundary Maps (FHBMs), Flood Insurance Rate Maps (FIRMs), and Flood Boundary and Floodway Maps (FBFMs). Several areas of flood hazards are commonly identified on these maps. One of these areas is the Special Flood Hazard Area (SFHA) or high-risk area defined as any land that would be inundated by the 100-year flood – the flood having a 1 percent chance of occurring in any given year (also referred to as the base flood). Development may take place within the SFHA, provided that development complies with local floodplain management ordinances, which must meet the minimum Federal requirements.

Clean Water Act

Pursuant to Section 402 of the Clean Water Act, the EPA has established regulations under NPDES program to control and prevent pollution in storm water discharges. In California, the SWRCB administers are responsible for developing waste discharge requirements (WDRs). The SDRWQCB is also responsible for developing WDRs specific to its jurisdiction, including those presented in the Municipal Storm Water Permit. WDRs for stormwater drainage systems influence the design, operation, and maintenance requirements for the City's stormwater system

Local

Municipal Storm Water Permit

Municipalities in San Diego County, including the City of Vista, collect and discharge storm water runoff containing pollutants through their storm water conveyance systems. The SDRWQCB's municipal permit requires each member in the region to develop a Jurisdictional Urban Runoff Management Program (JURMP).

City of Vista General Plan 2030

The Resource Conservation and Sustainability Element and the Public Safety, Facilities, and Services Element of the Vista General Plan 2030 contains goals and policies applicable to stormwater drainage within the City of Vista. Overall, the goals and policies aim to create an effective stormwater system to benefit the City. The goals related to stormwater drainage systems include:

- RCS Goal 4: Preserve, protect, and enhance water quality in watersheds to which the City contributes stormwater and urban runoff;
- PSFS Goal 10: Continue to provide drainage facilities to adequately collect surface runoff to mitigate flooding and improve water quality; and
- PSFS Goal 16: Provide and maintain public infrastructure and utilities that support existing and planned land uses and development in a cost-effective and responsible manner.

Hazard Mitigation Plan (HMP)

As part of the County of San Diego's Multi-jurisdictional Hazard Mitigation Plan, the City of Vista reviewed a set of jurisdictional-level hazard maps including detailed critical facility information and localized potential hazard exposure/loss estimates to help identify the top hazards threatening their jurisdiction. Based on this review, the City of Vista established goals for their Hazard Mitigation Plan. The following goal in the Hazard Mitigation Plan relates to drainage:

- HMP Goal 5: Reduce the possibility of damage and losses to existing assets, particularly people, critical facilities/infrastructure, and City-owned facilities, due to floods and other forms of severe weather.

Vista Municipal and Development Code

Chapter 13.18 of the Vista Municipal Code, Stormwater Management and Discharge Control Ordinance, and Chapter 16.48 of the Vista Development Code, Flood Area Construction Regulations set forth the requirements for managing stormwater in the City of Vista.

Stormwater Management and Discharge Control Ordinance

The purposes of the Stormwater Management and Discharge Control Ordinance are as follows:

- To establish requirements for discharges into the Municipal Separate Storm Sewer System (MS4), receiving waters, and the environment;
- To protect, to the maximum extent practicable (MEP), life, property, receiving waters, aquatic life, and the environment from loss, injury, degradation, or damage by discharges from within the City' s jurisdiction;
- To protect the MS4 from damage; and
- To meet the requirements of state and federal law and the City of Vista' s MS4 Permit.

Flood Area Construction Regulations

The purposes of the Flood Area Construction Regulations are to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas by legally enforceable regulations applied uniformly throughout the community to all publicly and privately owned land within flood prone, mudslide, or flood related erosion areas. These regulations are designed to:

- Protect human life and health;
- Minimize expenditure of public money for costly flood control projects;
- Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
- Minimize prolonged business interruptions;
- Minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets, and bridges located in areas of special flood hazard;
- Help maintain a stable tax base by providing for the sound use and development of areas of special flood hazard so as to minimize future flood blight areas;
- Ensure that potential buyers are notified that property is in an area of special flood hazard; and
- Ensure that those who occupy the areas of special flood hazard assume responsibility for their actions.

8.3.3 Existing Conditions

Stormwater drainage conveyance within the City of Vista occurs in a variety of storm drain pipes, culverts, and channels that together comprise the MS4. The City's MS4, also known as a "storm drain system" or the "stormwater system" is distinct from the sanitary sewer system. In contrast to wastewater in sanitary sewer systems, water that enters storm drain systems (rain, irrigation runoff, natural groundwater seepage, and other sources of water) flows to local creeks and other water bodies

without first being directed to a traditional treatment plant. Requirements for new development and redevelopment to include structural features to treat pollutants in storm water runoff have been in place since 2001. However, much of the City of Vista's infrastructure was constructed prior to 2001 and does not include features to treat pollutants in storm water runoff.

The City of Vista maintains an inventory of its stormwater system conveyance structures in Geographic Information System (GIS) format. **See Figure 8.3** for the City's storm drain system. This detailed inventory as depicted on the GIS "Storm Atlas" maps includes storm drain structures such as; inlets; outlets; cleanouts; open channels (e.g., ditches, creeks); and closed channels (e.g., pipes, box culverts, or other closed channels); and structural best management practices (BMPs), which are features designed to remove pollutants from storm water runoff and/or provide control of runoff flow rates.

The City of Vista's Public Works department maintains City-owned portions of the stormwater system. Typical operation and maintenance activities include inspection and cleaning of catch basins (storm drain inlets) and large, improved drainage structures; and mowing of drainage swales and ponds. Based on the City of Vista's Operating Budget for Fiscal Years 2021/22 and 2022/23, this includes inspection and cleaning of over 1,250 storm drain inlets.

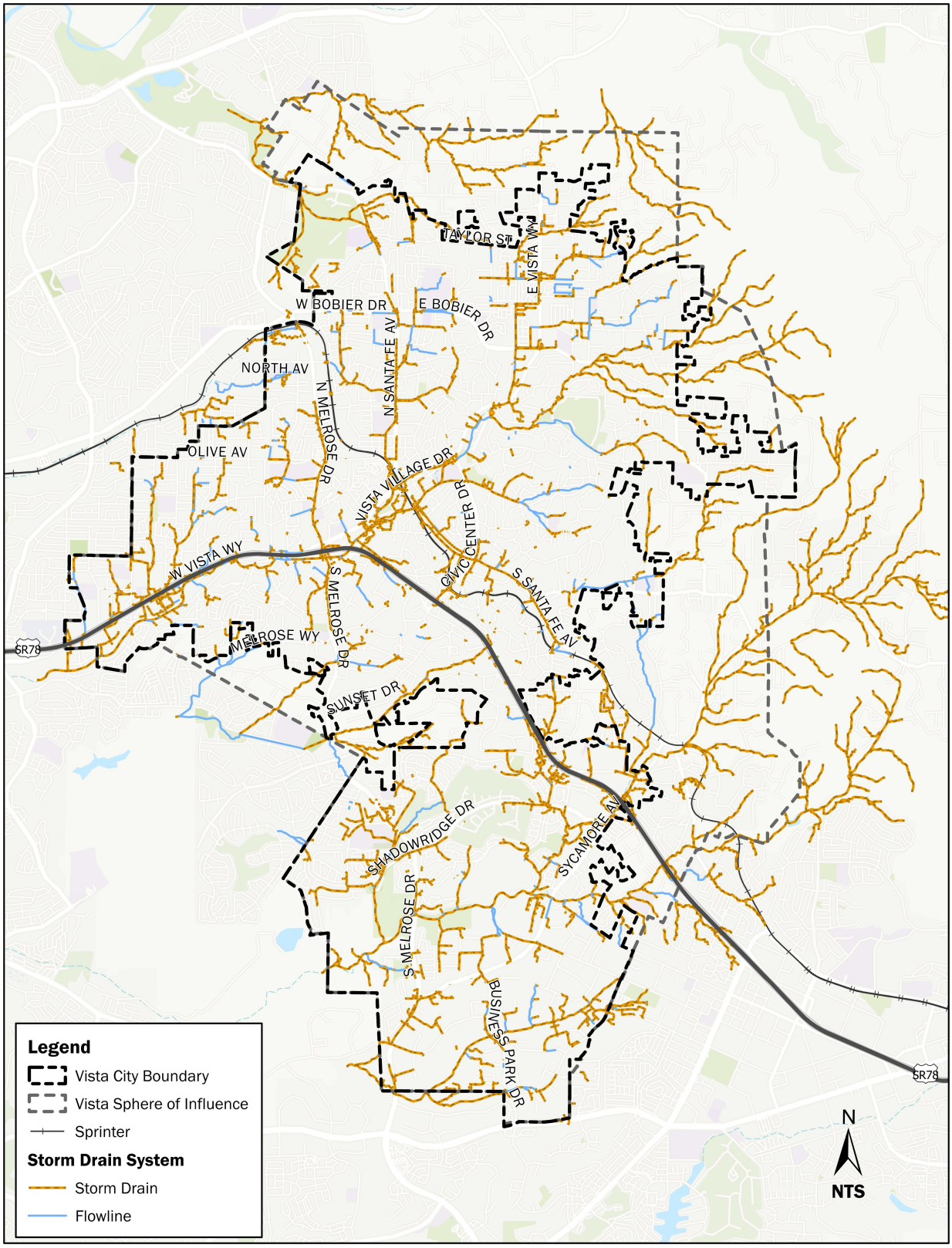
The City of Vista's "Six-Year Capital Improvement Program and FYs 2020/21 and 2021/22 Capital Project Budget" includes four projects. Notably, two of the projects are citywide projects requiring multi-year capital investment. "Citywide Storm drain Relining/ Replacement" consists of on-going repair or replacement of storm drain conduits throughout the City that have reached the end of their useful life, have failed as identified by the storm drain inventory, or where needed prior to overlay or slurry seal pavement rehabilitation work being performed. Within this project is an on-going need to replace existing metal storm drain pipes. Initial rehabilitation projects have been identified based on urgent needs, and future projects will be identified for rehabilitation. "California Mandated Trash Cleanup (CMTC) Device Installations" will install trash capture devices throughout the city-owned storm drain system. The devices will remove solid waste larger than 5 millimeters, preventing discharge of materials to local waterways. Device installations are required by SWRCB Resolution No. 2015-0019 and SDRWQCB Order No. R9-2017-0077 (Trash Order).

The City of Vista is traversed by Buena Vista Creek in the northerly portion of the City and Agua Hedionda Creek in the southerly portion of the City. Flooding from these creeks represents a high-priority safety issue for the City. These two creeks and portions of some of their tributaries are mapped by FEMA and are subject to NFIP regulations.

Dam failure represents another potential risk for flooding in the City of Vista. Based on dam inundation maps, the City of Vista could be subject to inundation of

property and the need for evacuation from failure of Pechstein Reservoir located on Bluebird Canyon Road in the County of San Diego, east of the City of Vista. Pechstein Reservoir is a storage tank constructed in the mid-1970s and holds a maximum of 20 million gallons of water.

Figure 8.3: Storm Drain System



8.4 Solid Waste, Recycling, and Composting

This section describes existing solid waste, recycling, and composting services in the City of Vista.

8.4.1 Findings

Trends associated with solid waste, recycling, and composting are the continued efforts by state and local governments to divert residential and commercial waste from solid waste landfills by increasing recycling, organic waste recycling, and waste reduction to meet California's statewide goal of 75 percent solid waste diversion.

8.4.2 Regulatory Setting

Federal

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) (Code of Federal Regulations [CFR] Title 40, Part 258) establishes regulations for municipal solid waste landfills to ensure the protection of the people and the environment. Part 258 of the CFR provides location, operation, design, and closure criteria. The federal regulations require states to implement their own municipal solid waste landfill permitting programs.

State

Assembly Bill 1327, Chapter 18, California Solid Waste Reuse and Recycling Access Act

The California Solid Waste Reuse and Recycling Access Act of 1991 required each jurisdiction to adopt an ordinance by September 1, 1994, requiring any development project for which an application for a building permit is submitted to provide an adequate storage area for collection and removal of recyclable materials. AB 1327 regulations govern the transfer, receipt, storage, and loading of recyclable materials.

Assembly Bill 939, California Integrated Waste Management Act

The State of California requires that all jurisdictions achieve compliance with AB 939, a state mandate that required jurisdictions to achieve 50 percent diversion of solid waste from landfills by 2000. AB 939 further required each city to conduct a Solid Waste Generation Study and to prepare an annual Source Reduction and Recycling Element to describe how it will reach its goals. AB 939 was designed to focus on source reduction, recycling and composting, and environmentally safe landfilling and transformation activities. Senate Bill 1383, described below, has eclipsed the requirements of AB 939 as of January 1, 2022.

Assembly Bill 1826 – California's New Commercial and Multi-Family Organics (Green Waste) Recycling Mandate

AB 1826 required all businesses to recycle their organic waste beginning April 1, 2016. Businesses that generate organic waste (food or green waste) are required to arrange for organic waste recycling services. Multi-family properties of five units or more are required to arrange for organic waste recycling services.

Assembly Bill 341 – Mandatory Recycling

AB 341 requires all businesses that generate 4 cubic yards or more of solid waste per week and multi-family dwellings of 5 or more units to recycle. This bill established the statewide goal of not less than 75 percent of solid waste generated be source reduced, recycled, or composted by the year 2020.

Assembly Bill 827 – California's Commercial Recycling and Organics (Green Waste) Container Mandate

Effective July 1, 2020, AB 827 builds on AB 341 and requires businesses that generate four cubic yards or more of commercial solid waste or eight cubic yards or more of organic waste per week to provide recycling and organic waste containers for customers to collect waste generated from products purchased and consumed on the premises. The bill exempts full-service restaurants, and outlines requirements for placement and signage of waste collection containers.

Senate Bill 1383 – Organic Waste Reduction

SB 1383 required California Department of Resources Recycling & Recovery (CalRecycle) to adopt regulations and requirements to achieve a 50 percent reduction in organic waste disposal by 2020 and requires a 75 percent reduction by 2025. Reduction methods could include organic waste collection and recycling services, implementing a food recovery program, and conducting education and outreach on organics recycling. SB 1383 requires cities to adopt an enforceable mechanism, such as an ordinance, to implement SB 1383 regulations.

Regional

San Diego County Integrated Waste Management Plan

The San Diego County Integrated Waste Management Plan was adopted in January 2005 to meet the requirements of the California Integrated Waste Management Act. The Plan includes goals and policies as well as a summary of integrated waste management issues in San Diego County. It summarizes waste management programs that local jurisdictions are using to meet the 50 percent waste reduction mandate. It also suggests steps needed to cooperatively implement and administer specific programs regionally or countywide. The plan consists of a Countywide Siting Element, a Countywide Summary Plan, and three elements from each jurisdiction:

- Source Reduction and Recycling Element, which analyzes the local waste stream, and presents diversion programs and funding.

- Household Hazardous Waste Element, which includes programs to encourage safe management of household toxic waste and provide framework for recycling, treatment, and proper disposal.
- Non-Disposal Facility Element, which lists existing and planned facilities.

Local

Vista Municipal Code 13.15: Mandatory Organic Waste Disposal Reduction

Vista Municipal Code 13.15: Mandatory Organic Waste Disposal Reduction implements SB 1383 for the City of Vista. Under this ordinance, single-family residential dwelling occupants and commercial businesses, except those that meet the self-hauler requirements, must subscribe to the City's three-container collection service (green container for organic waste, blue container for recyclable materials, and a gray container for waste). Self-hauler is defined as a person who hauls solid waste, organic waste, or recyclable materials as described in 14 CCR Section 18982(a)(66). The ordinance also sets out requirements for Edible Food Generators, Food Recovery Services, Facility Operators, and Community Composting operations. Compliance with this ordinance is required as of January 1, 2022.

Vista Municipal Code 13.17: Construction and Demolition Debris Recycling Ordinance

All construction, renovation, and remodel projects within the City, including City sponsored projects, with a total project value greater or equal to $75,000, as calculated for purposes of receiving a Vista building permit, and all demolition projects, are subject to this ordinance. This ordinance requires the diversion of at least 50 percent of total construction and demolition debris to a use other than disposal in a landfill, such as, reuse or recycling.

8.4.3 Existing Conditions

EDCO currently provides the City's residential and commercial solid waste and recycling services. EDCO provides curbside trash and recycling services for single-family and multi-family homes, temporary dumpsters, and construction and demolition debris collection for residential units. Commercial services include recycling, organic waste recycling, and solid waste dumpster disposal services.

Solid Waste

Solid waste generated in the City is transported to the Sycamore Landfill, located at 8514 Mast Boulevard in the City of Santee, approximately 40 miles south of Vista, which is owned by Allied/Republic. The Sycamore Landfill is permitted for a daily throughput of 5,000 tons per day, has a maximum permitted capacity of 147,908,000 cubic yards, and has a remaining capacity of 113,972,637 cubic tons (CalRecycle 2022). The Sycamore Landfill is anticipated to cease operation in 2042.

As shown in **Table 8.4**, City of Vista Waste Stream 2021, the City of Vista generated approximately 115,394 total tons of solid waste (including recycling and greenwaste) in 2021. Taking into account waste diversion from greenwaste and recycling efforts, the City of Vista generated 88,140 tons of total refuse for landfill disposal. As shown in **Table 8.5,** City of Vista Waste Diversion 2021, the City of Vista diverted approximately 23.6 percent of the total generated waste stream in 2021.

Table 8.4: City of Vista Waste Stream 2021

Source	Greenwaste Tons/%	Recycling Tons/%	Refuse Tons/%	Total Tons	% of Waste Stream *
Residential	14,450.08/ 84.72	5,781.90/ 50.82	34,068.55/ 38.65	53,300.53	46
Commercial	426.15/ 2.68	3,303.54/ 29.04	33,753.57/ 38.30	37,483.26	32
Roll Off	2,000.32/ 12.60	2,291.76/ 20.14	20,317.90/ 23.05	24,609.98	21
Total	15,876.55/ 13.76	11,377.20/ 9.86	88, 140.02/ 76.38	115,393.77	100

** Percentages are rounded to the nearest decimal place.*

Source: Pers. Comm Joshua Sino Cruz, City of Vista DPW, 2022

Table 8.5: City of Vista Waste Diversion 2021

Source	Tons	% of Waste Stream
Residential	19, 231.98	36.08% of residential waste stream
Commercial	3,729.69	9.95% of commercial waste stream
Roll Off	4,292.08	17.44% of roll off waste stream
Total	27,253.75	23.62% of total waste stream

Source: Pers. Comm Joshua Sino Cruz, City of Vista DPW, 2022

Household hazardous waste disposal for residents occurs at 1145 East Taylor Street, adjacent to City Public Works yard. This facility accepts household products such as cleaners and paint, automotive products such as used oils and fuels, used batteries, electronics, pesticides, and other household hazardous waste. There are additional public disposal sites and recycling centers within the North County that are accessible to city residents (EDCO 2010b). The following is a list of public disposals; recycling centers; and construction, demolition, and inert recycling centers within the surrounding vicinity and their distance from the City.

- Escondido: Public Disposal and Recycling Center; 1044 West Washington Avenue, Escondido, CA 92025 (approximately 12.7 miles)
- Fallbrook: Public Disposal and Recycling Center; 550 West Aviation Road, Fallbrook, CA 92028 (approximately 13.6 miles)

- San Marcos: Construction, Demolition, and Inert Recycling and Recycling Center; 224 South Las Posas Road, San Marcos, CA 92078 (approximately 6 miles)

Recycling

EDCO provides curbside and commercial recycling services for the City of Vista. EDCO operates three material recovery facilities for its service area, the closest of which is the EDCO Recovery and Transfer site located in the City of Lemon Grove. Recyclable materials, including carton containers, mixed paper, Styrofoam, aluminum, glass containers, shredded paper, paperboard, cans, cardboard, and #1 through #7 plastics can be commingled in the EDCO "blue cart".

As shown in **Table 8.4**, City of Vista Waste Stream 2021, the City of Vista generated 11,377 tons of recycling waste in 2021. Residential uses generated the highest percentage of recycling compared to the total waste stream; approximately 50 percent of residential waste was diverted to recycling. Commercial uses diverted approximately 29 percent of waste to recycling, and roll-off uses (onsite dumpsters and other refuse collection) diverted approximately 20 percent of total waste to recycling. As such, the City of Vista diverted a total of approximately 10 percent of the total waste stream to recycling waste collection.

Organics

In 2021, EDCO completed construction of an anaerobic digestion (AD) facility to process organic waste with the capability of producing renewable natural gas and fertilizer. The operation of the AD facility supports goals to divert waste from landfills by allowing residents and businesses to recycle their food waste and green waste together. In early 2021, EDCO began residential organic recycling curbside services for the City of Vista and followed shortly thereafter with providing commercial organic recycling (EDCO 2022). Food scraps and yard waste can be mixed in the "green cart," the organic recycling-designated container (Vista 2022). The organic waste collected is disposed of and processed at the AD facility, and the natural gas produced is used to fuel EDCO trash and recycling trucks (Pers. Comm. Sino Cruz 2022). As shown in **Tables 8.4 and 8.5,** the City of Vista generated 15,877 tons of green waste in 2021, which contributed to the City's diversion of 23.6 percent of the total waste stream from landfill disposal.

8.5 Dry Utilities and Telecommunications – Electricity, Natural Gas, Telecommunications

This section describes existing electricity, natural gas, and telecommunications services in the City of Vista.

8.5.1 Findings

The trends related to electricity and natural gas services include encouraging energy efficient building and energy efficient building retrofitting in order to meet state and local GHG reduction goals of net-zero carbon emissions by 2045.

Three telecommunication companies compete to provide residents cellular, telephone, and internet services. Continued growth associated with telecommunication services is focused on expanding coverage of 5G and fiber optic services to ensure complete coverage across the city.

8.5.2 Regulatory Setting

Federal

Federal Energy Regulatory Commission

The Federal Energy Regulatory Commission (FERC) was created in 1977 by the Department of Energy Organization Act. It is the federal agency that regulates the interstate transmission of natural gas, electricity, and oil. FERC also regulates hydropower and natural gas development projects, and monitors energy markets.

Federal Communications Commission

The Federal Communications Commission (FCC) was founded by the Communications Act of 1934 and regulates interstate and international communications by radio, television, wire, satellite, and cable in the United States and U.S. territories. The agency has primary authority over communications law, regulation, and technology innovation.

State

California Public Utilities Commission

The California Public Utilities Commission (CPUC) is the state agency, originally created in 1911 by Constitutional Amendment as the Railroad Commission, that regulates privately owned electric, natural gas, telecommunications, water, railroad, rail transit, and passenger transportation companies. The commission's responsibilities were expanded, and in 1946, the commission was renamed the California Public Utilities Commission. The CPUC contains a Communications Division, which implements policies related to telecommunications markets, and the Energy Division, which addresses activities related to the electricity, natural gas, steam, and petroleum pipeline industries. There is also a Safety and Enforcement Division and Water Division, among others.

California Energy Commission

The California Energy Commission (CEC) is California's energy policy and planning agency, established in 1974 by the Warren-Alquist Act. The CEC is made up of the following divisions: Efficiency, Energy Assessments, Energy Research and Development, Fuels and Transportation, Renewable Energy, Siting, Transmission,

and Environmental Protection. The CEC is responsible for advancing energy policy and coordinating with other state and federal agencies to develop and implement energy policy. The CEC also oversees permitting and operation of energy infrastructure and preparing for energy emergencies.

Senate Bill 100 – The 100 Percent Clean Energy Act of 2018

SB 100 (2018) increased the standards set forth in SB 350, establishing that 44 percent of the total electricity sold to retail customers in California per year by December 31, 2024, 52 percent by December 31, 2027, and 60 percent by December 31, 2030, be secured from qualifying renewable energy sources. SB 100 states that it is the policy of the state that eligible renewable energy resources and zero-carbon resources supply 100 percent of the retail sales of electricity to California. This bill requires that the achievement of 100 percent zero-carbon electricity resources do not increase the carbon emissions elsewhere in the western grid and that the achievement not be achieved through resource shuffling.

Senate Bill 1078 - California Renewables Portfolio Standard

SB 1078 (2002) (California Public Utilities Code Section 399.11 et seq.) established the Renewables Portfolio Standard (RPS) program, which required an annual increase in renewable generation by the utilities equivalent to at least one percent of sales, with an aggregate goal of 20 percent by 2017. This goal was subsequently accelerated, requiring utilities to obtain 20 percent of their power from renewable sources by 2010 (see SB 107, EO S-14-08, and EO S-21-09).

California Code of Regulations, Title 24

The California Building Standards Code was established in 1978 and serves to enhance and regulate California's building standards. Part 6 of Title 24 specifically established Building Energy Efficiency Standards that are designed to ensure that new and existing buildings in California achieve energy efficiency and preserve outdoor and indoor environmental quality. The current Title 24 standards are the 2019 Title 24 building energy efficiency standards, which became effective January 1, 2020. The CEC updates the Title 24 Energy Code every 3 years. The 2022 standards will improve upon the 2019 standards for new construction of, and additions and alterations to, residential and nonresidential buildings. The CEC adopted the 2022 Title 24 Energy Code in August 2021 and the California Building Standards Commission approved incorporating the updated Code into the California Building Standards Code (CALGreen) in December 2021. The 2022 Energy Code will go into effect on January 1, 2023. When compared to the 2019 Title 24 Standards, the 2022 amendments include measures that will further reduce energy use in single family, multifamily, and nonresidential buildings.

Part 11 of Title 24 are the California Green Building Standards Code, the nation's first green building standards. Commonly referred to as California's Green Building Standards (CalGreen), Part 11 establishes minimum mandatory standards and

voluntary standards pertaining to the planning and design of sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and interior air quality. The 2019 CALGreen standards are the current applicable standards.

Local

City of Vista Climate Action Plan

The City adopted its first Climate Action Plan (CAP) in 2012, followed by an update in October 2021. The CAP outlines the City's plan to reduce GHG emissions and address the challenges of climate change. The CAP includes a 2012 baseline inventory, and a 2030 reduction target to align with the state's goals of reducing emissions for 40 percent below 1990 levels. To meet the City's current 2030 target, the CAP identifies strategies and measures to reduce GHG emissions citywide from a variety of emissions sectors. The seven strategies are listed below (City of Vista 2021):

- Strategy 1: Increase the Use of Zero-Emission/Alternative Fuel Vehicles
- Strategy 2: Reduce Vehicle Miles Traveled
- Strategy 3: Reduce Fossil Fuel Use
- Strategy 4: Increase Building Energy Efficiency
- Strategy 5: Increase Renewable and Zero-Carbon Energy
- Strategy 6: Reduce and Recycle Solid Waste
- Strategy 7: Carbon Sequestration

8.5.3 Existing Conditions

San Diego Gas & Electric (SDG&E)

Electricity and natural gas are provided to the City by SDG&E, which is a regulated subsidiary of Sempra Energy Utility. SDG&E distributes energy service to 3.7 million consumers in San Diego and southern Orange counties. SDG&E supplies customers with electricity generated both locally and outside of the utility's service territory. To maintain consistency with State laws and regulations, SDG&E is growing its Smart Grid, which connects different sources of renewable energy and engages new technologies to enable customers to shift energy as pricing changes. SB 1078 requires 60 percent of electric sales to be a renewable energy mix by 2030. **Table 8.6**, SDG&E 2020 Power Mix, lists SDG&E's energy sources and the most recent available data of the power mix of those energy sources. Note that the renewable percentage shown in **Table 8.6** does not reflect Renewables Portfolio Standard compliance, which is determined using a different methodology.

Table 8.6: SDG&E Power Mix 2020

Energy Resources	2020 SDG&E Power Mix (%)
Eligible Renewable[1]	31.0
Biomass & Biowaste	2.1
Geothermal	0.0
Eligible Hydroelectric	0.0
Solar	17.9
Wind	11.0
Coal	0.0
Large Hydroelectric	1.7
Natural Gas	26.2
Nuclear	0.2
Other	0.0
Unspecified Power[2]	40.9
Total	100

[1]The eligible renewable percentage above does not reflect RPS compliance, which is determined using a different methodology
[2]Unspecified power is electricity that has been purchased through open market transaction and is not traceable to a specific generation source.
Source : SDG&E 2021.

SDG&E has extensive underground and overhead electric facilities located within and adjacent to the City. Natural gas is distributed throughout the City by underground lines, typically located within public rights-of-way (ROWs), functioning as a backbone system to service individual parcels. Electric usage is measured quarterly by zip code and made available publicly by SDG&E. **Table 8.7 and 8.8** below display the electricity and natural gas usage of the City of Vista in the first quarter of 2022.

Table 8.7: Electric Usage City of Vista 2022 Quarter 1 in Kilowatt-hours

Zip Code	Residential	Commercial	Agriculture	Industrial	
92081	4,334,059	13,376,361	0	0	
92083	4,697,958	4,148,863	0	0	
92084	7,401,471	3,905,709	0	0	
92085	0	0	0	0	**Grand Total**
Total	16,433,488	21,430,933	0	0	37,864,421

Quarter 1 2022 refers to January 2022 through April 2022
Source: SDG&E 2022

Table 8.8: Gas Usage City of Vista 2022 Quarter 1 in Therms

Zip Code	Residential	Commercial	
92081	277,343	391,491	
92083	0	327,907	
92084	0	438,954	
92085	0	0	**Grand Total**
Total	277,343	1,158,352	1,435,695

**Quarter 1 2022 refers to January 2022 through April 2022*
***One therm is equal to 100 cubic feet of natural gas (CCF)*
****Residential and Commercial refer to categories assigned by SDG&E, not land use designations or zoning.*
Source: SDG&E 2022

SDG&E is in the process of developing a large transmission line project adjacent to the City of Vista, along the transmission line known as Tie Line 6975, which involves a new power line between the San Marcos and Escondido substations. SDG&E also conducts pole and wire replacement work as part of the Fire Risk Mitigation initiative and replaces or strength-tests natural gas pipelines under the Pipeline Safety Enhancement Plan.

Telecommunications

Phone, cable, and internet services are provided by private entities AT&T, Cox, and Spectrum (formerly Time Warner).

AT&T provides 4G and 5G cellular wireless coverage, cable television, traditional telephone service, and broadband and fiber optic internet technology to the City. The City is almost entirely covered by 5G cellular service, with a few small pockets throughout the City with 4G coverage. Fiber optic internet is provided by the AT&T Fiber Program, providing high-speed, wireless internet to individuals and businesses (AT&T 2022). Cox offers high-speed internet, cable television, and traditional telephone service, to residents of the City. Spectrum offers cellular phone plans, television services, business phone service, and high-speed internet to the City.

8.6 Fire Protection

This section describes existing fire protection and emergency services provided in the City of Vista.

8.6.1 Findings

The Vista Fire Department (Vista Fire) services the City and the Vista Fire Protection District (VFPD), which is an additional 17.5 square miles within unincorporated County of San Diego. There are currently six fire stations and 93 firefighting personnel and support staff that serve approximately 120,533 individuals with the Vista Fire service area. Approximately 57 percent of calls are medical aid, whereas approximately 10 percent of calls are fire related.

8.6.2 Regulatory Setting

The following section describes the federal, state, regional, and local regulations that are relevant to fire protection services within the City of Vista and the VFPD.

Federal

National Fire Protection Association Codes, Standards, Practices, and Guides

National Fire Protection Association codes, standards, recommended practices, and guides are developed through a consensus standards development process approved by the American National Standards Institute. This process brings together professionals representing varied viewpoints and interests to achieve consensus on fire and other safety issues. National Fire Protection Association standards are recommended guidelines and nationally accepted good practices in fire protection but are not laws or codes unless adopted as such or referenced as such by the California Fire Code (CFC) or the local fire agency.

Federal Wildland Fire Management Policy

The Federal Wildland Fire Management Policy was developed in 1995, updated in 2001, and again in 2009 by the National Wildfire Coordinating Group, a federal multi-agency group that establishes consistent and coordinated fire management policy across multiple federal jurisdictions. An important component of the Federal Wildland Fire Management Policy is the acknowledgment of the essential role of fire in maintaining natural ecosystems. The Federal Wildland Fire Management Policy is based on the following guiding principles, found in the Guidance for Implementation of Federal Wildland Fire Management Policy (National Wildfire Coordinating Group 2009):

- Firefighter and public safety are the first priority in every fire management activity.
- The role of wildland fire as an essential ecological process and natural change agent will be incorporated into the planning process.

- Fire management plans, programs, and activities support land and resource management plans and their implementation.
- Sound risk management is a foundation for all fire management activities.
- Fire management programs and activities are economically viable, based upon values to be protected, costs, and land and resource management objectives.
- Fire management plans and activities are based upon the best available science.
- Fire management plans and activities incorporate public health and environmental quality considerations.
- Federal, state, tribal, local, interagency, and international coordination and cooperation are essential.
- Standardization of policies and procedures among federal agencies is an ongoing objective.

National Fire Plan

The National Fire Plan, officially titled Managing the Impacts of Wildfire on Communities and the Environment: A Report to the President in Response to the Wildfires of 2000, was a presidential directive in 2000 as a response to severe wildland fires that had burned throughout the United States. The National Fire Plan focuses on reducing fire impacts on rural communities and providing assurance for sufficient firefighting capacity in the future. The plan addresses five key points: firefighting, rehabilitation, hazardous fuels reduction, community assistance, and accountability. The plan provides technical, financial, and resource guidance and support for wildland fire management across the United States. U.S. Forest Service and the Department of the Interior are working to successfully implement the key points outlined in the plan (DOI/USDA 2000).

International Fire Code

Created by the International Code Council, the International Fire Code addresses a wide array of conditions hazardous to life and property, including fire, explosions, and hazardous materials handling or usage. The International Fire Code places an emphasis on prescriptive and performance-based approaches to fire prevention and fire protection systems. Updated every 3 years, the International Fire Code uses a hazards classification system to determine the appropriate measures to be incorporated to protect life and property (often these measures include construction standards and specialized equipment). The International Fire Code uses a permit system (based on hazard classification) to ensure that required measures are instituted (ICC 2021).

State

California Government Code

California Government Code, Sections 51175 through 51189 provide guidance for classifying lands in California as fire hazard areas and requirements for management of property within those lands. CAL FIRE is responsible for classifying fire hazard severity zones (FHSZs) based on statewide criteria and makes the information available for public review. Further, local agencies must designate, by ordinance, Very High FHSZs within their jurisdiction based on the recommendations of CAL FIRE.

Section 51182 sets forth requirements for maintaining property within fire hazard areas, such as defensible space, vegetative fuels management, and building materials and standards. Defensible space around structures in fire hazard areas must consist of 100 feet of fuel modification on each side of a structure, but not beyond the property line unless findings conclude that the clearing is necessary to significantly reduce the risk of structure ignition in the event of a wildfire. Clearance on adjacent property shall only be conducted following written consent by the adjacent owner. Further, trees must be trimmed from within 10 feet of the outlet of a chimney or stovepipe, vegetation near buildings must be maintained, and roofs of structures must be cleared of vegetative materials. Exemptions may apply for buildings with an exterior constructed entirely of nonflammable materials.

California Code of Regulations

Title 14 Natural Resources

Title 14, Division 1.5, Chapter 7, Subchapter 3, Fire Hazard, also sets forth requirements for defensible space if the distances specified above cannot be met. For example, options that have similar practical effects include noncombustible block walls or fences, five feet of noncombustible material horizontally around the structure, installing hardscape, landscaping, or reducing exposed windows on the side of the structure with a less-than-30-foot setback, or additional structure hardening such as those required in the California Building Code—California Code of Regulations Title 24, Part 2, Chapter 7A.

Title 24 California Building Code

California Building Code

Part 2 of Title 24 contains the California Building Code. Chapter 7A of the California Building Code regulates building materials, systems, and/or assemblies used in the exterior design and construction of new buildings located within a fire hazard area. Fire hazard areas as defined by the California Building Code include areas identified as a FHSZ within a State Responsibility Area or a wildland–urban interface fire area. The purpose of Chapter 7A is to establish minimum standards for the protection of life and property by increasing the ability of structures located in a fire hazard area

to resist the intrusion of flames or burning embers projected by a wildfire, and to contribute to a systematic reduction in structural losses from a wildfire. New buildings located in such areas must comply with the ignition-resistant construction standards outlined in Chapter 7A.

California Fire Code

Part 9 of Title 24 contains the CFC, which incorporates by adoption the International Fire Code with necessary California amendments. The purpose of the CFC is to establish the minimum requirements to safeguard the public health, safety, and general welfare from the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures, and premises, and to provide safety and assistance to firefighters and emergency responders during emergency operations. Chapter 49 of the CFC contains minimum standards for development in the wildland–urban interface and fire hazard areas.

The CFC and Office of the State Fire Marshal provide regulations and guidance for local agencies in the development and enforcement of fire safety standards. The CFC is updated and published every 3 years by the California Building Standards Commission. The 2019 CFC took effect on January 1, 2020.

Fire Hazard Severity Zones

CAL FIRE maps FHSZs based on fuel loading, slope, fire history, weather, and other relevant factors as directed by California Public Resources Code, Sections 4201–4204, and California Government Code, Sections 51175–51189. FHSZs are ranked from Moderate to Very High and are categorized for fire protection within a Federal Responsibility Area, State Responsibility Area, or Local Responsibility Area under the jurisdiction of a federal agency, CAL FIRE, or local agency, respectively.

California Strategic Fire Plan

The 2018 Strategic Fire Plan for California reflects CAL FIRE's focus on fire prevention and suppression activities to protect lives, property, and ecosystem services, and natural resource management to maintain the state's forests as a resilient carbon sink to meet California's climate change goals and to serve as important habitat for adaptation and mitigation. The Strategic Fire Plan for California provides a vision for a natural environment that is more fire resilient, buildings and infrastructure that are more fire resistant, and a society that is more aware of and responsive to the benefits and threats of wildland fire, all achieved through local, state, federal, tribal, and private partnerships (CAL FIRE 2018). Plan goals include the following:

- Identify and evaluate wildland fire hazards and recognize life, property, and natural resource assets at risk, including watershed, habitat, social and other values of functioning ecosystems. Facilitate the collaborative development and sharing of all analyses and data collection across all ownerships for consistency in type and kind.

- Promote and support local land use planning processes as they relate to: (a) protection of life, property, and natural resources from risks associated with wildland fire; and (b) individual landowner objectives and responsibilities.
- Support and participate in the collaborative development and implementation of local, county, and regional plans that address fire protection and landowner objectives.
- Increase fire prevention awareness, knowledge and actions implemented by individuals and communities to reduce human loss, property damage, and impacts to natural resources from wildland fires.
- Integrate fire and fuels management practices with landowner/land manager priorities across jurisdictions.
- Determine the level of resources necessary to effectively identify, plan, and implement fire prevention using adaptive management strategies.
- Determine the level of fire suppression resources necessary to protect the values and assets at risk identified during planning processes.
- Implement post-fire assessments and programs for the protection of life, property, and natural resource recovery.

California Mutual Aid Agreements

The California Disaster and Civil Defense Master Mutual Aid Agreement, as provided by the California Emergency Services Act, provides statewide mutual aid between and among local jurisdictions and the state. The statewide mutual aid system exists to ensure that adequate resources, facilities, and other supports are provided to jurisdictions whenever resources prove to be inadequate for a given situation. Each jurisdiction controls its own personnel and facilities but can give and receive help whenever needed.

Additionally, Emergency Management Mutual Aid (EMMA) provides emergency management personnel and technical specialists to support the disaster operations of affected jurisdictions during an emergency. In accordance with the California Master Mutual Aid Agreement, local and state emergency managers have responded in support of each other under a variety of plans and procedures. Immediately following the 1994 Northridge Earthquake, city and county emergency managers along with the Coastal, Inland, and Southern Regions of the California Governor's Office of Emergency Services, developed EMMA to provide a valuable service during the emergency response and recovery efforts at the Southern Region Emergency Operations Center, local emergency operations centers, the Disaster Recovery Center, local assistance centers, and in the field. Since that time, EMMA has often been used to deploy emergency managers and other technical specialists not covered by law enforcement or fire mutual aid plans in support of emergency operations and response throughout California.

California Natural Disaster Assistance Act

The California Natural Disaster Assistance Act provides financial aid to local agencies to assist in the permanent restoration of public real property, other than facilities used solely for recreational purposes, when such real property has been damaged or destroyed by a natural disaster. The California Natural Disaster Assistance Act is activated after a local declaration of emergency, after the California Emergency Management Agency gives concurrence with the local declaration, or after the governor issues a proclamation of a state emergency. Once the California Natural Disaster Assistance Act is activated, local government is eligible for certain types of assistance, depending on the specific declaration or proclamation issued.

State Fire Regulations

State fire regulations are set forth in Sections 13000 et seq. of the California Health and Safety Code and include regulations concerning building standards (as also set forth in the CBC), fire protection and notification systems, fire protection devices such as extinguishers and smoke alarms, high-rise building and childcare facility standards, and fire suppression training. The state fire marshal enforces these regulations and building standards in all state-owned buildings, state-occupied buildings, and state institutions throughout California.

Regional

Unified San Diego County Emergency Services Organization

The Unified San Diego County Emergency Services Organization has primary responsibility for preparedness and response activities in the County of San Diego (County). The County Office of Emergency Services serves as staff to the Unified Disaster Council, the governing body of the Unified San Diego County Emergency Services Organization. Emergency response and preparedness plans include the Operational Area Emergency Operation Plan and the County Multi-Jurisdictional Hazard Mitigation Plan.

San Diego County Emergency Operations Plan

As described above, the County of San Diego Office of Emergency Services has prepared the San Diego Emergency Operations Plan (EOP) which outlines the roles and responsibilities of participating departments and jurisdictions during major emergencies and disasters. The City of Vista is a participating jurisdiction within the operational area. The EOP includes an overview of hazards including earthquakes; flooding; drought; dam failure; nuclear-related incidents; water, gas or energy shortages; terrorism; tsunami; wildland fire; urban fire; transportation accidents; hazardous materials incidents; and landslides.

The EOP identifies five objectives for the operational area:

1. To provide a system for the effective management of emergency situations.

2. To identify lines of authority and relationships.
3. To assign tasks and responsibilities.
4. To ensure adequate maintenance of facilities, services and resources.
5. To provide a framework for adequate resources for recovery operations.

San Diego County Multi-Jurisdictional Hazard Mitigation Plan

The City of Vista is a participating jurisdiction in the Multi-Jurisdictional Hazard Mitigation Plan, a Countywide plan that identifies risks, minimizes damage from natural and human-made disasters, and is generally intended to provide compliance with regulatory requirements associated with emergency response efforts. The Multi-Jurisdictional Hazard Mitigation Plan includes an overview of the risk assessment process, vulnerability assessments, and identifies hazards present in each jurisdiction of the County. Hazards profiled in the plan include wildfire, structure fire, flood, coastal storms, erosion, tsunami, earthquakes, liquefaction, rain-induced landslide, dam failure, hazardous materials incidents, nuclear materials release, and terrorism. The plan sets forth a variety of objectives and actions based on a set of broad goals including the following: (1) promoting disaster-resistant future development; (2) increased public understanding and support for effective hazard mitigation; (3) building support of local capacity and commitment to become less vulnerable to hazards; (4) enhancement of hazard mitigation; coordination and communication with federal, state, local and tribal governments; and (5) reducing the possibility of damage and losses to existing assets, particularly people, critical facilities or infrastructure, and County-owned facilities, due to dam failure, earthquake, coastal storm, erosion, tsunami, landslides, floods, structural fire/wildfire, and human-made hazards.

Local

City of Vista Development Code

In 2016, the City of Vista updated their Fire Code in accordance with the 2016 California Fire Code and the 2015 International Fire Code. The City's Fire Code is adopted for the protection of the public health and safety. It includes definitions, provisions for the safeguarding of life and property from fire and explosion hazards arising from the storage, handling and use of hazardous substances, materials and devices, and for conditions hazardous to life or property in the occupancy of buildings, requirements for permits and inspection for installing or altering systems, regulations for the erection, construction, enlargement, alteration, repair, moving, removal, conversion, demolition, equipment use and maintenance of buildings and structures, including the installation, alteration or repair of new and existing fire protection systems and their inspection and provides penalties for violation of this code. This updated Fire code increases standards for structures, permitting, and related activities to keep the public safe (City of Vista 2016).

Vista Fire Department Strategic Plan

Vista Fire serves a population of 120,533 across both the City of Vista and the Vista Fire Protection District. In 2020, Vista Fire prepared the Strategic Plan 2020- 2025 that guides the fire department to better serve the City of Vista. The Strategic Plan specifically addresses community and agency stakeholder input, critical issues and service gaps, and goals and objectives for the fire department. The Strategic Plan aids in relevant stakeholders including agencies and the community to be clear about the roles, current performance, and future expectations and capabilities for the fire department (City of Vista 2020).

Vista Fire Protection District - Community Wildfire Protection Plan

In 2005, the VFPD prepared a Community Wildfire Protection Plan (CWPP) to help address and mitigate the risk of wildland fire within the City of Vista. The 2005 CWPP specifically addresses, ingress and egress during a wildfire, public awareness of wildfire threat and mitigating for threat, reduction of structural ignitability, and adoption of coordinated construction and maintenance codes that support prudent wildland urban interface living.

In 2022, another CWPP was drafted to provide more specific analysis for portions that are characterized by WUI and WI. The 2022 CWPP identified 13 communities that range in moderate to extreme hazard ratings and includes recommended measures to help mitigate the risk of wildfire in these areas.

City of Vista General Plan 2030 – Public Safety Element

In 2012, the City of Vista adopted the Vista General Plan 2030. The General Plan guides the development within the City to help achieve the vision for 2030 for a safe, clean, attractive City with a strong sense of community. The Public Safety, Facilities & Services Element addresses the protection of citizens, structures, infrastructure, and facilities from natural and human- made hazards. There are a number of goals addressing wildfire hazards including: preparing for and providing adequate and effective emergency response services to respond to natural and human -made emergencies and disasters; acts of terrorism, protecting life, property, and the environment from structural, wildland- urban, and wildland fire damage; and continuing to provide fire protection and related emergency services to protect persons and property from fire and other community hazards.

8.6.3 Existing Conditions

Vista Fire provides fire protection services to the City of Vista and the VFPD, which includes 17.5 miles of unincorporated San Diego County primarily to the north and east of the City, refer to **Figure 8.4.** The total service area for Vista Fire is 36.5 square miles and the total population served is approximately 120,533 residents (City of Vista, 2021a).

The Fire Department is a full-service department, providing services ranging from fire prevention and suppression to emergency medical services, technical rescue, and hazardous materials mitigation. Operating from six strategically located fire stations, Vista Fire provides service to both residents and businesses.

Vista Fire Department

The entire Vista Fire staff includes 85 fire suppression personnel, three prevention personnel, one Emergency Services Officer, one Disaster Preparedness Chief, and three support staff. Each of Vista Fire's six fire stations maintains three to five firefighting personnel 24/7, refer to **Table 8.9 and Figure 8.4** (VFD 2021, City of Vista 2021b).

Table 8.9: Vista Fire Stations

Station	Address	Staff	Apparatus
1	175 N Melrose Drive	1 Battalion Chief 1 Captain 1 Engineer 3 Firefighter Paramedics	1 Engine 1 Ambulance
2	1050 Valley Drive	1 Captain 1 Engineer 1 Firefighter Paramedic	1 Engine
3	1070 Old Taylor Street	1 Captain 1 Engineer 3 Firefighter Paramedics	1 Engine 1 Ambulance
4	2121 Thibodo Road	1 Captain 1 Engineer 3 Firefighter Paramedics	1 Engine 1 Ambulance
5	2009 S. Melrose Drive	1 Captain 1 Engineer 1 Firefighter Paramedic	1 Engine
6	651 E. Vista Way	1 Captain 1 Engineer 3 Firefighter Paramedics	1 Ladder Truck 1 Ambulance

Services provided by the Vista Fire include fire prevention, fire suppression, emergency medical services, technical rescues, hazardous materials mitigation, fire investigation, weed abatement, inspections, and public education. Most calls received by the Vista Fire are medical in nature. In 2021, Vista Fire had 15,870 calls, 56.7 percent of calls were medical aid and 10.2 percent were fire responses. Each station includes at least one firefighter paramedic (VFD, 2021b).

Vista Fire created the Vista Fire Department 2020-2025 Strategic Plan, which used stakeholder input to create goals and objectives for the Department. The Strategic Plan identifies the following as community priorities: quick response times, effective intervention, and customer service. Additionally, stakeholders identified several

areas of improvement, which include staff retention, staff training, equipment supply, and funding. Based on this information, the Strategic Plan puts forward the following six goals for Vista Fire (VFD, 2019):

- Develop a comprehensive fire prevention bureau that encompasses fire investigation, safety inspections, and public education to ensure customer safety.
- Ensure the department has appropriate facilities, apparatus, and equipment to meet the evolving needs of our community presently and in the future.
- Prioritize and enhance the wellness culture to improve the mental and physical performance of the individual and the organization.
- Enhance the department's training program that supports all employees in their professional development.
- Develop an ongoing process of anticipating the needs of the department as it pertains to personnel development and growth to ensure continuity of operations at all levels.
- Provide timely and efficient services to a growing and dynamic population to ensure the safety of our community.

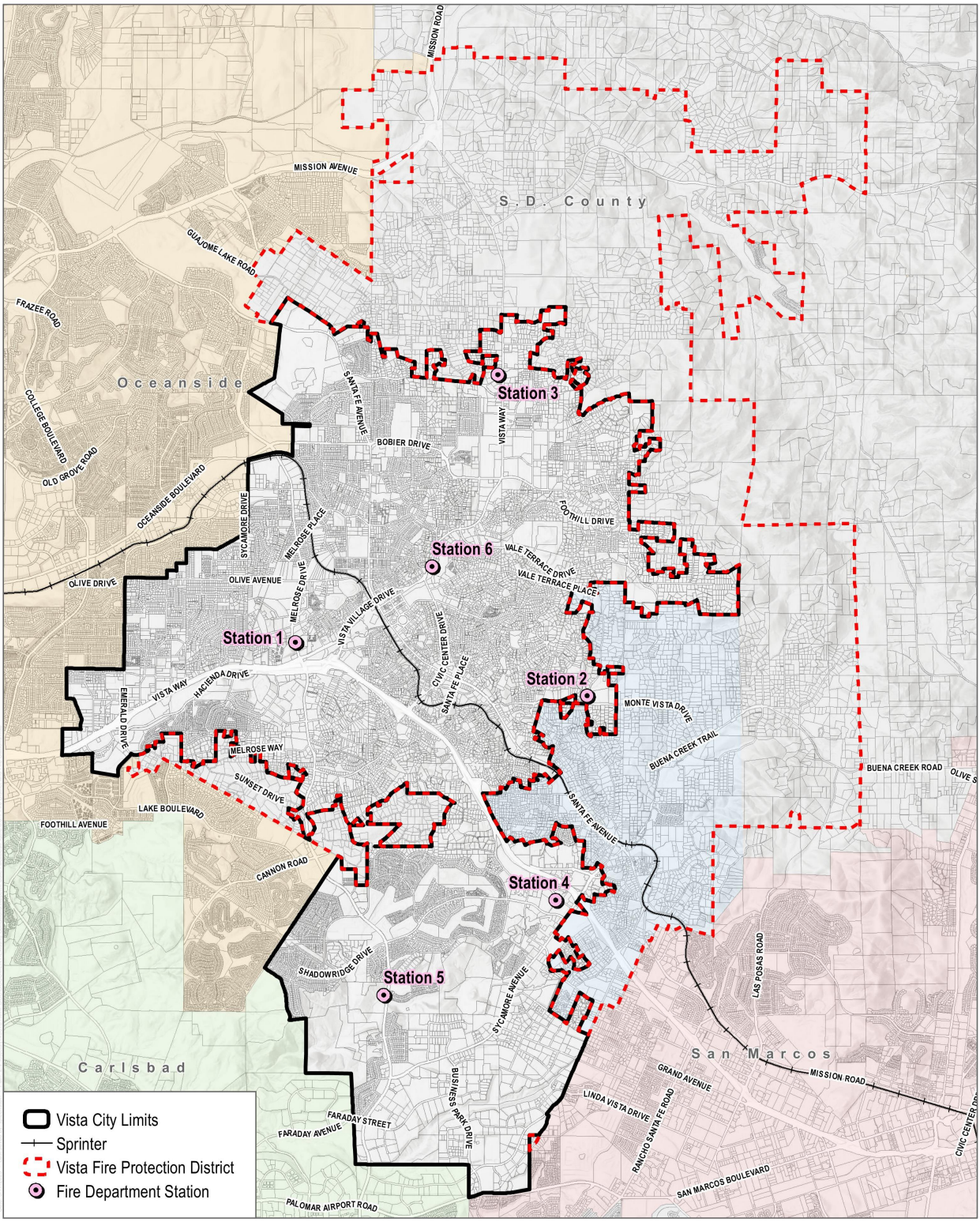
Vista Fire Protection District

The Vista Fire Protection District (VFPD) consists of 17.5 miles outside of the City of Vista. The majority of the VFPD is along the eastern edge of the City, with a small area on to the west of the center of the center of the City. Vista Fire provides fire protection services to this area. Most of the areas that are considered fire hazards are within the VFPD.

CAL FIRE

CAL FIRE's Fire and Resource Assessment Program (FRAP) has mapped FHSZs across the State, which are identified as Moderate to Very High and are categorized for fire protection within a Federal Responsibility Area (FRA), State Responsibility Area (SRA), or Local Responsibility Area (LRA) under the jurisdiction of a federal agency, CAL FIRE, or local agency, respectively. Within the City, all areas are categorized as LRA; however, areas within VFPD are categorized as SRA because it is not within a local municipality. The State of California is responsible for wildfire prevention and suppression within SRAs. An SRA Fire Prevention Benefit Fee is paid for each habitable structure within the SRA to help fund the prevention activities provided by CAL FIRE. These fees do not go to Vista Fire to service this area (City of Vista, 2021c).

Figure 8.4: Fire Department Stations And Fire District



8.7 Law Enforcement

This section describes existing law enforcement facilities and services provided by the City of Vista.

8.7.1 Findings

- The current level of law enforcement service in Vista is 0.8 police officers per 1,000 residents. As discussed in Chapter 2 above, it is anticipated that the city will experience a 5.7 percent increase in population between 2020 and 2050, resulting in potentially 5,862 new residents. Therefore, the city would need to be prepared to hire new officers.
- Associated with the anticipated population increase, in addition to the officers, the City would need to provide new equipment and facilities in order to meet the demand and maintain service levels.
- Vista has identified through their 2022-2024 goals that the current standard may need to be revised and a new goal for the number of officers per 1,000 residents could be needed based on anticipated population growth. This is an opportunity area for the General Plan 2050 Update to address.

8.7.2 Regulatory Setting

Local

City of Vista General Plan 2030

Per the current Vista General Plan 2030, the present staffing level of police protection provided by the San Diego County Sheriff's Department (SDCSD) in Vista is approximately 0.8 officers per 1, 000 residents. The General Plan recognizes that an increase in population is expected to result in an increased demand for police protection resources, including personnel, equipment, and facilities, in order for SDCSD to meet the new demand and maintain service levels.

City of Vista, City Council 2022-2024 Goals

Every other year, the Vista City Council conducts goal setting workshops to identify and determine the City's priorities for the next two years. Earlier this year, the City Council conducted their latest workshop and identified their goals for 2022-2024. The 2022-2024 goals identified a need for enhanced public safety. The Council identified the following opportunity areas:

- Engage in more comprehensive crime reduction strategies— that have measurable outcomes; public safety effort to reduce domestic violence.
- Establish a goal for the number of deputies and fire fighters per 1,000 residents; we grow about 1,000 residents a year.

- Address Public Safety facilities: Community Center and Sheriff's station Luz Duran.

Based on the opportunity areas, the Council outlined the following strategic goals related to public safety:

- Continue to reduce crime rates.
- Establish appropriate criteria to determine the appropriate number of public safety positions needed.
- Pursue grant funding to build a Community Center at Luz Duran Park and move the Sheriff's Substation to the City owned property at 986 Vista Village Drive.
- Increase awareness of Domestic Violence and Family Crisis issues.

8.7.3 Existing Conditions

Police protection for Vista and the Sphere of Influence (SOI) is provided by the San Diego County Sheriff's Department (SDCSD), which maintains a main station (325 South Melrose Dr, Suite 210) and three substations (two are open to the public) within the city. **See Figure 8.5.** The Sheriff's Station in Vista has provided law enforcement services to the City and SOI for more than 50 years. There are more than 150 sworn, professional, and volunteer staff members that ensure the safety and security of those living, working, and visiting Vista. Services provided in Vista include general patrol, investigations, narcotics and gang investigations, crime prevention, juvenile intervention, community policing, and administrative services. Vista has access to a range of groups to police and serve the community, some of which are listed below:

Patrol Deputies

Patrol Deputies respond to calls for service 24 hours a day. The Patrol Division is responsible for all general law enforcement calls for service within the City of Vista and the surrounding unincorporated area. Each patrol deputy is assigned to a geographical "beat" area.

Detectives

Similarly, to Patrol Deputies, Detectives are also assigned geographic "beats" areas. Detectives investigate cases involving theft, physical assaults (excluding homicides), sexual assaults, vandalism, burglaries, annoying phone calls, and other crimes. Specialized investigative units such as homicide, bomb/arson, financial crimes, domestic violence, child abuse, and narcotics handle those specific crimes for the entire Sheriff's jurisdiction, including the Vista command.

School Resource Officers

School Resource Officers are assigned to high schools within the City of Vista. They handle all crimes relating to school students. These crimes include truancy, tobacco, drug and alcohol related offenses, as well as crimes that occur on school grounds.

Community Oriented Policing and Problem Solving (COPPS)

The COPPS unit identifies and resolves problems, both criminal and non-criminal in nature. COPPS deputies perform investigative services, provide patrol support, coordinate municipal and departmental resources to improve public safety and address "quality of life" issues in the City of Vista.

Crime Prevention

The Vista Station includes Crime Prevention Specialists that provide services to residents, businesses, schools, senior groups, churches, youth organizations, and civic groups such as neighborhood watch, bike safety, theft/robbery prevention, and many other services.

Senior Volunteers

The San Diego County Sheriff's Senior Volunteer Patrol program is designed to draw upon the experience of senior citizens from the community. Participants provide valuable assistance to existing staff as it strives to increase the quality of life in the community.

8.7.4 Crime Statistics

The City of Vista crime statistics have remained relatively constant over the past four years. Violent crime per year has remained much the same since 2019 and there has been slight declines in property related crime since 2019.

Table 8.10: City of Vista Crime Statistics

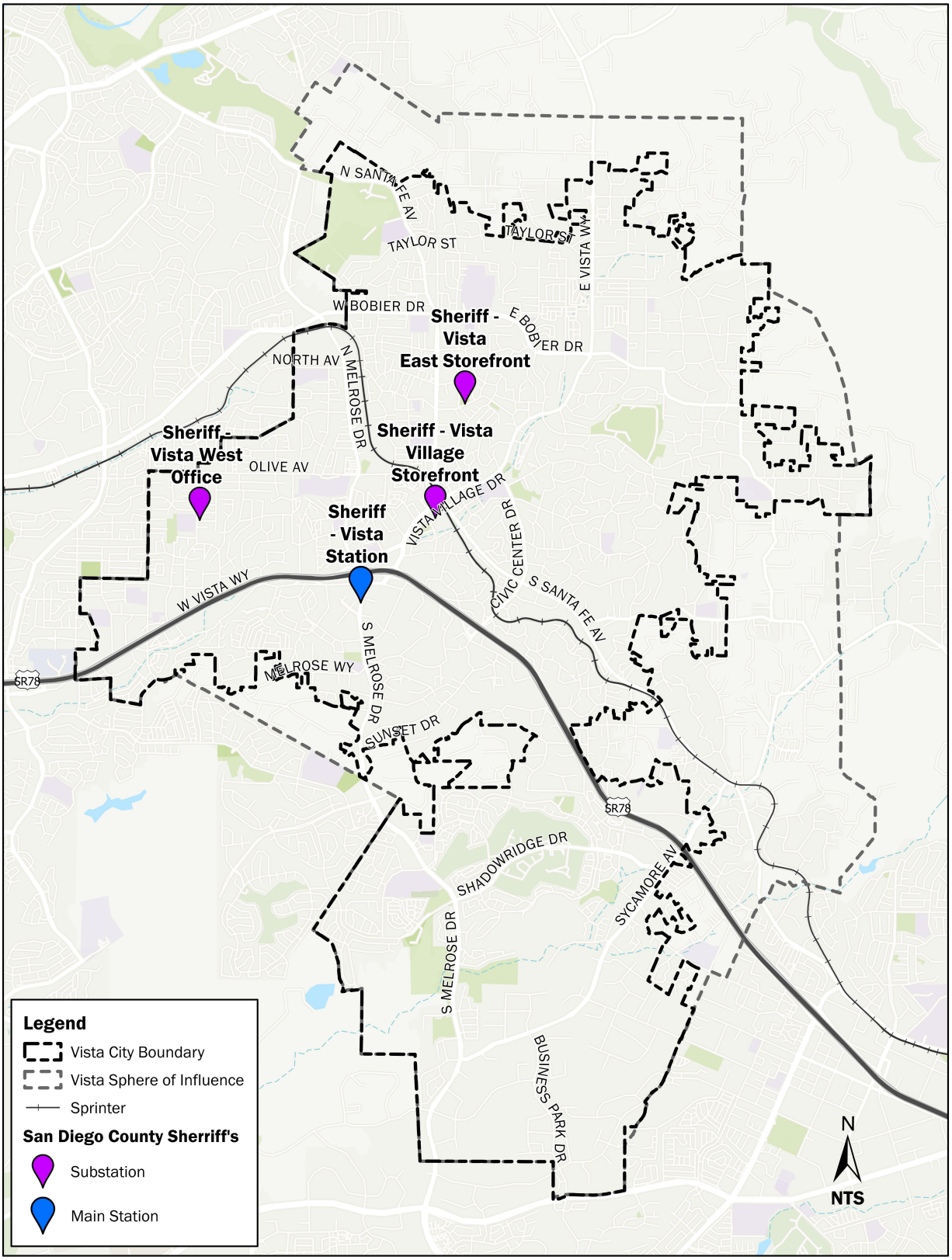
Crime	2019	2020	2021	2022*
Murder	2	2	2	1
Rape	38	29	22	14
Armed Robbery	36	34	37	24
Strong Arm Robbery	57	42	50	32
Aggravated Assault	221	238	246	168
Total Violent Crime	354	345	357	239
Residential Burglary	82	67	78	52
Non-Residential Burglary	169	126	132	135

Theft >= $400	329	289	372	327
Theft < $400	616	451	386	304
Motor Vehicle Theft	242	276	262	218
Total Property Crime	1438	1209	1230	1036
Crime Index	**1792**	**1554**	**1587**	**1275**

Source: ARJIS: https://crimestats.arjis.org/default.aspx

**2022 statistics are as of August 2022.*

Figure 8.5: Law Enforcement



8.8 Schools and Libraries

This section describes the existing school and library facilities in the City of Vista.

8.8.1 Findings

- Based on the District's Seven Year Student Population Projection, the overall student populations for Vista Unified School District (VUSD) are expected to continue to decrease annually between 2020-2026. The projected decline was estimated to be partly due to smaller incoming kindergarten sizes.
- Based on the VUSD capacity data, the District can accommodate 27,905 students. Based on Table 8.10 below, there were approximately 20,194 students enrolled in the VUSD during the 2020/21 school year and 19,941 during the 2021/22 school year, suggesting that there is adequate capacity to accommodate an additional 7,000+ students. These numbers should be confirmed with VUSD during the General Plan Update process.

8.8.2 Regulatory Setting

State

California Government Code, Section 65995(b), and Education Code Section 17620

Senate Bill 50 (SB 50) amended Government Code Section 65995, which contains limitations on Education Code Section 17620, the statute that authorizes school districts to assess development fees within school district boundaries. SB 50 permits school districts to levy fees, based on justification studies, for the purposes of funding construction of school facilities, subject to established limits.

According to California Government Code Section 65995(3)(h), the payment of statutory fees is "deemed to be full and complete mitigation of the impacts of any legislative or adjudicative act, or both, involving, but not limited to, the planning, use, or development of real property, or any change in governmental organization or reorganization on the provision of adequate school facilities." The school district is responsible for implementing the specific methods for mitigating school impacts under the Government Code.

Mitigation Fee Act (California Government Code 66000-66008)

Assembly Bill (AB) 1600, known as the Mitigation Fee Act, requires a local agency establishing, increasing, or imposing an impact fee as a condition of development to identify the purpose and use of the fee. The agency must also demonstrate a reasonable relationship between the fee and the purpose for which it is charged, and between the fee and the type of development project on which it is to be levied.

Local

Developer Fees

VUSD levies developer fees for new construction and additions of residential and commercial development. The current residential fee rate is $4.08 per square foot.

The residential fee is only assessed when the living area is over 500 square feet. Commercial development rates are $0.66 per square foot.

8.8.3 Existing Conditions

Vista Unified School District (VUSD) covers approximately 38 square miles and has 29 schools serving nearly 19,000 students: 15 elementary schools, five middle schools, three comprehensive high schools, two alternative high schools, one early childhood special education center, one blended learning/independent study middle/high school, one adult education school, and one adult transition center. **See Figure 8.6.**

There are five additional charter schools that are authorized by VUSD that serve approximately 3,000 children. VUSD also includes one of the county's largest adult education programs with approximately 25,000 students enrolled each year.

A portion of the San Marcos Unified School District (SMUSD) covers approximately three-square miles of the southeastern corner of Vista and Vista's SOI. SMUSD has 19 schools serving approximately 19,700 students: 10 elementary schools, three middle schools, two K-8 schools, three high schools, and one independent study school. None of these schools are within Vista's City limits, and only one school is within Vista's SOI.

Table 8.11 below shows the current enrollment numbers and capacity for all schools within the VUSD.

Table 8.11: City of Vista School Enrollment (2020-2022)

School	Capacity (Feb 2023)	2020-2021 Enrollment	2021-2022 Enrollment
Alamosa Park Elementary School	738	472	477
Alta Vista High School	872	86	122
Beaumont Elementary	872	514	504
Bella Mente Montessori Academy		465	424
Bobier Elementary School	848	570	537
Breeze Hill Elementary	774	786	779
California Avenue Elementary	832	17	13
Casita Center for Science/Math/Technology	774	626	653
Empresa Elementary	882	728	692
Foothill Oak Elementary School	724	534	476
Grapevine Elementary	952	776	752
Hannalei Elementary	720	515	490
Lake Elementary	808	693	698

Madison Middle	1,227	1,044	975
Major General Raymond Murray High (MGM)	280	196	190
Maryland Elementary	736	589	526
Mission Meadows Elementary	700	511	477
Mission Vista High	1,952	1,660	1,658
Monte Vista Elementary	738	473	465
New Haven School	-	26	18
Rancho Buena Vista High*	3,143	1,987	2,027
Rancho Minerva Middle	1,169	630	599
Roosevelt Middle	1,395	903	785
T.H.E Leadership Academy	790	615	593
Vista Academy of Visual and Performing Arts (VAPA)	1,138	626	642
Vista Adult Transition Center (VATC)	144	114	115
Vista High School*	3,170	2,315	2,231
Vista Innovation and Design Academy (VIDA)	1,527	808	794
Vista Magnet Middle School of Technology, Science, and Math		844	822
Vista Visions Academy		71	407
Total	27,905	20,194	19,941

Source: Vista Unified School District and California Department of Education (http://www.sarconline.org/)

** Vista High School and Rancho Buena Vista High Schools are currently undergoing Measure LL Construction Projects that will result in lower capacity due to removal of certain portable classroom buildings and replaced with fewer permanent classroom buildings*

Seven Year Student Population Projections

A Seven Year Student Population Projection study was done by Davis Demographics for Vista Unified School District to plan for future student population changes. The study factored in current and historical student data with the latest demographic data and planned residential development. These projections are based on the residence of the students and are used to let the District anticipate where student population shifts will occur. The analysis concluded that overall student populations for Vista Unified School District are expected to continue to decrease annually between 2020-2026. The projected decline was estimated to be partly due to smaller incoming kindergarten sizes.

Long Range Facilities Master Plan

The LRFMP was prepared in 2016 and reviews the VUSD facilities, recommends improvements, and explores potential resources. The LRFMP identifies facility needs relating to educational programs, projected student enrollment, calculates classroom capacity, assesses facility conditions, and identifies funding opportunities.

Classroom Capacity

Using "loading standards" as identified in the LRFMP, the District can accommodate 33,388 students using the District's Program Standards. **Table 8.12** identifies the loading size of classrooms by program as of the completion of the LRFMP (2016).

Table 8.12: Average Classroom size per Program, LRFMP 2016

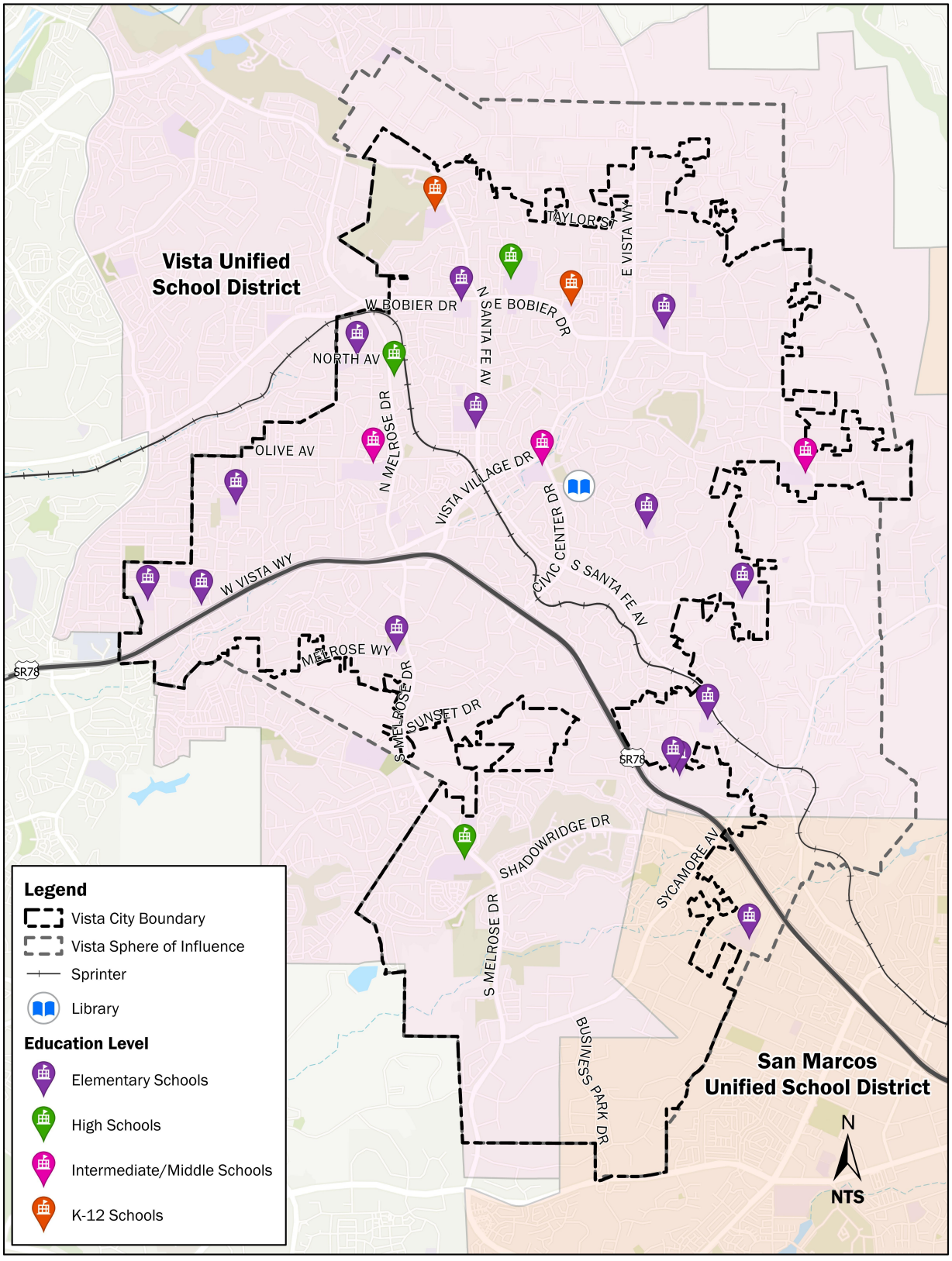
Program	Loading
Kindergarten	24 students per classroom
Grade levels 1-3	24 students per classroom
Grades levels 4-5	34 students per classroom
Grades levels 6-8	32 students per classroom
Grades levels 9-22	35 students per classroom
Other/institutional	27 students per classroom
Non-severe special education programs	16 students per classroom
Severe special education programs	9 students per classroom

The LRFMP identified a number of improvements needed to various schools throughout the District. Many of these deficiencies and improvements to facilities were mainly due to their age. It is unknown to what extent these improvements have been made.

Libraries

The Vista Library is operated by the County of San Diego. It is located at 700 Eucalyptus Avenue, on the campus with the Vista Civic Center and the Morris B. Vance Community Center.

Figure 8.6: Schools and Libraries



8.9 Parks and Recreation

Vista's parks and recreational assets are highly valued by its residents as important contributors to the community's quality of life. These assets promote physical and emotional health, individual character development, social relationships, economic value, skills and widening interests, community connections and stability, and community character. This section provides an overview of Vista's existing parkland and recreational facilities, discusses existing and future needs, and highlights key goals and policies to achieve the community's vision regarding these significant resources.

8.9.1 Findings

- Vista has a wide variety of parks and recreational spaces throughout the city, totally approximately 340 acres of publicly maintained areas.
- Most of the City's parks and recreation areas are clustered in the center of Vista, all within a one-mile radius from each other. However, the larger parks (Guajome Adobe Park and Buena Vista Park) are generally located in the northwest and southwest portions of the City.
- The City of Vista has several parks and recreation areas that have been recently renovated or about to be developed with money granted from the California Department of Parks and Recreation.
- Based on current population, Vista would have to provide approximately 464-acres of publicly owned parkland to meet the current General Plan parkland goal. The General Plan Update should look at the feasibility of providing additional City owned and maintained parkland to achieve this goal.

8.9.2 Regulatory Setting

State

The Quimby Act

The Quimby Act authorizes municipalities to pass ordinances requiring developers to set aside land, donate conservation easements, or pay fees for park improvements. The Quimby Act sets a standard park space to population ratio of up to 3 acres of park space per 1,000 persons. Cities with a ratio higher than three acres per 1,000 can set a standard of up to 5 acres per 1,000 persons for new development. The calculation of the municipality's park space to population ratio is based on a comparison of the population count of the last federal census to the amount of city- or town-owned parkland.

Local

City of Vista General Plan

Per the Resource Conservation and Sustainability Element of the General Plan, the City is committed to providing and overall average of 4.49 acres of publicly owned parkland for every 1,000 residents, including the goal to provide three acres of community parks per 1,000 residents and two acres of neighborhood parks per 1,000 residents.

8.9.3 Existing Conditions

Vista's parks are organized by type: regional, community, neighborhood, and special recreational/resource area. The classification system and standards for each type of park are described in below. The City's Recreation and Community Services Department offers diverse recreational programs at each City-owned park depending upon the size of the park and the type of facilities. The City's Parks and Recreation Commission (Commission) advises the City Council and the Director of Parks and Community Services on decisions pertaining to parks, recreation, and open space issues. The Commission also aids in the coordination of public agencies and civic organizations as it relates to parks and recreation planning and programming.

Parks

There are 340 acres of City and County owned parks within Vista. **See Figure 8.7** for locations. The Recreation and Community Services Department provides a range of recreational programs and facilities at each City-owned park.

A discussed above, per the Resource Conservation and Sustainability Element of the General Plan, the City is committed to providing and overall average of 4.49 acres of publicly owned parkland for every 1,000 residents, including the goal to provide three acres of community parks per 1,000 residents and two acres of neighborhood parks per 1,000 residents. Per SANDAG population projections, Vista had an estimated population of 103,411 people in 2020. Based on that population, Vista would have to provide approximately 464-acres of publicly owned parkland to meet the parkland goal. Currently, Vista only has 340-acres of publicly owned parkland and therefore falls short of this target. However, if parkland not owned by Vista but serving Vista residents is included, then the total parkland is 497-acres and Vista is achieving the overall goal.

Park facilities within the City fall into one of the following categories and is used as guidance for developments:

Neighborhood Park

A Neighborhood Park serves mainly the children and families of a specific neighborhood.

Community Park

A Community Park supplements the Neighborhood Park by providing a wider range of recreational facilities, accommodating larger groups of people, and serving a wider range of interests.

Regional Park

A Regional Park provides, on a large scale, areas for active and passive recreation, picnic facilities, water features for boating and fishing, trails, and natural areas.

Special Recreational/Resource Area

A Special Recreational/Resource Area is an area that has potential regional significance, usually indicated by the uniqueness of the site and/or the type of facility or amenity provided. While Special Recreational/Resource Areas contribute to the City's overall parkland acreage, they do not have specific service areas or standards.

Facilities/Activities

Cultural and performing arts benefit and enrich the community by providing educational and cultural opportunities and increased awareness and appreciation of theater and music. The City's Recreation and Community Services Department operates a rich and robust cultural arts program, Moonlight Stage Productions. It is an award-winning regional theater company that offers a diverse, professional line-up of dramas, musicals, and comedies in two City-owned venues:

Moonlight Amphitheater

Moonlight Amphitheater is located in Brengle Terrance Park and is an open-air venue with a state-of- the-art stage house. It seats 899 and accommodates an additional 1,200 in lawn seating.

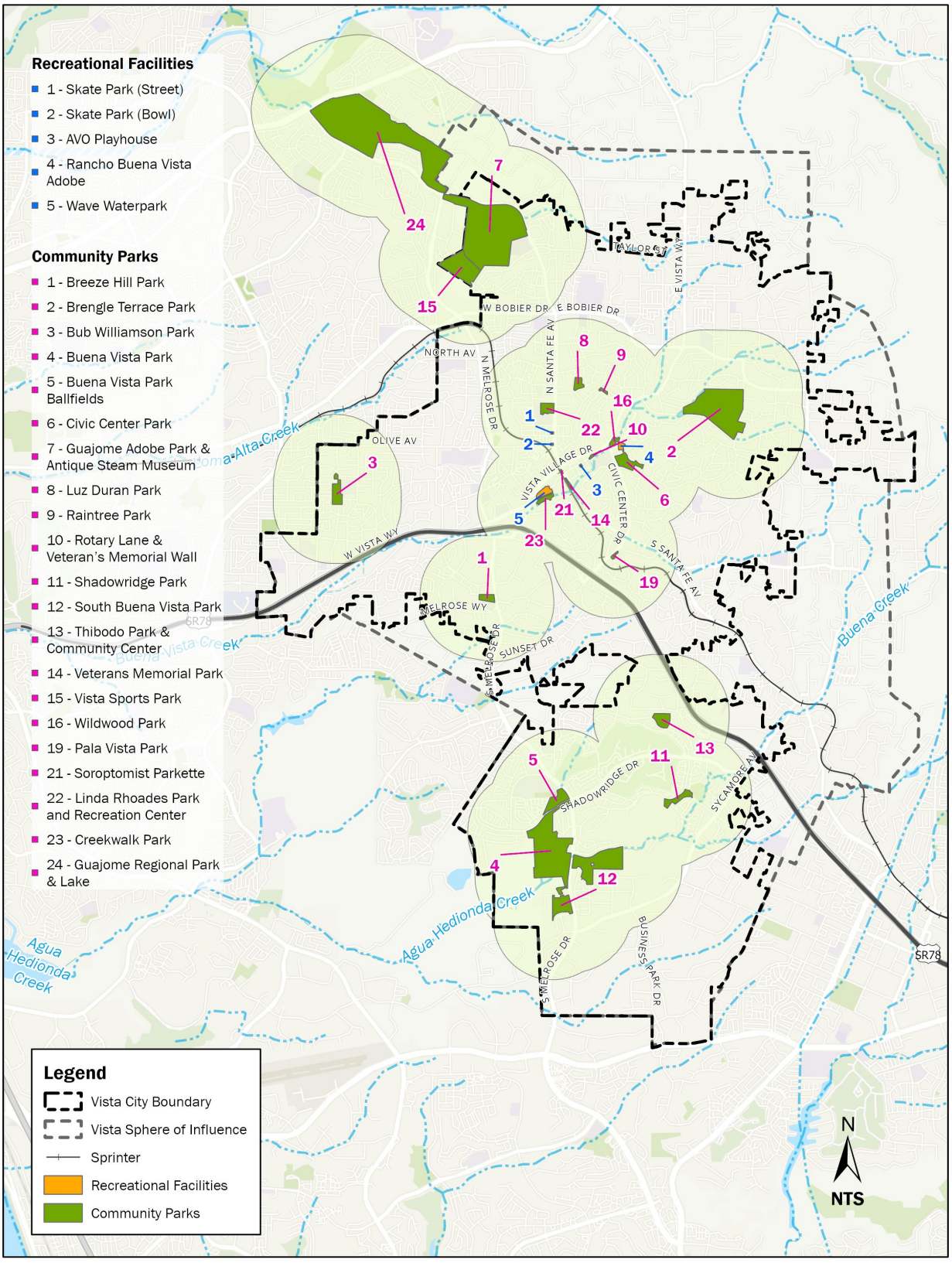
AVO Playhouse

AVO Playhouse is located in a renovated 1948 neighborhood movie house in downtown Vista and is a fully equipped performance venue that seats 328.

Trails and Bikeways

Vista has five hiking trails to explore the natural environment. The San Diego region’s mild climate allows hikers to enjoy the trails all year-long. The five trails are Buena Vista Park Trail, Buena Vista Creek Trail, Vista Conservancy Nature Trail, La Mirada Canyon Trail, and SANDAG Inland Rail Trail. Three of the five are owned and maintained by the City of Vista, while the Vista Conservancy Nature Trail and the SANDAG Inland Rail Trail are owned and maintained by others.

Figure 8.7: Parks and Recreation Facilities



8.10 Key Terms

CAL FIRE: California Department of Forestry and Fire Protection

CBC: California Building Code

CFC: California Fire Code

City: City of Vista

County: County of San Diego

EMMA: Emergency Management Mutual Aid

FHSZ: Fire Hazard Severity Zone

FRA: Federal Responsibility Area

FRAP: Fire and Resource Assessment Program

LRA: Local Responsibility Area

SRA: State Responsibility Area

VFPD: Vista Fire Protection District

8.11 References

CalRecycle. 2022. Solid Waste Information System Facility/Site Actvity Details; Sycamore Landfill (37-AA-0023). Accessed: September 19, 2022. Available: https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/1798?siteID=2871

City of Vista. 2022. Organic Waste Reduction SB 1383. Accessed: September 15, 2022. Available: https://www.cityofvista.com/city-services/utilities/organic-waste-reduction.

2021. Draft Housing Element 2021-2029. Accessed: September 21, 2022. Available: https://energydata.sdge.com/

Pers. Comm. Joshua Sino Cruz. 2022. City of Vista, Department of Public Works. Email dated October 24, 2022.

Escondido Disposal Corporation (EDCO). 2022. Commercial Services; Organic Recycling. Accessed: September 21, 2022. Available: https://san-diego.edcodisposal.com/commercial-waste-services/commercial-services/organic-recycling/.

San Diego Gas & Electric (SDG&E). 2021. 2020 Power Content Label. September 2021. Accessed: September 21, 2022. Available: https://www.sdge.com/sites/default/files/documents/15781%20SDGE_Power_Content_Label_2020.pdf

2022. Energy Data Request Program. Accessed: September 21, 2022. Available: https://energydata.sdge.com/.

City of Vista. 2021a. Fire Department. 2021. Accessed September 22, 2022. https://www.cityofvista.com/departments/fire-department.

City of Vista. 2021b. Fire Department. Vista Fire Stations. 2021. Accessed September 22, 2022. https://www.cityofvista.com/departments/fire-department/fire-stations.

City of Vista. 2021c. Fire Department. Vista Fire Stations- State Fire Prevention Fee. 2021. Accessed September 22, 2022. https://www.cityofvista.com/departments/fire-department/fire-stations/sra.

Vista Fire Department (VFD). 2019. Vista Fire Department 2020-2025 Strategic Plan. December 2019. Accessed September 22, 2022. https://www.cityofvista.com/home/showpublisheddocument/21336/637184691498130000.

VFD. 2021. 2021 Annual Report. 2021. Accessed September 22, 2022. https://www.cityofvista.com/home/showpublisheddocument/25232/637818906052300000

Drainage

City of Vista. City of Vista Operating Budget Fiscal Years 2021/22 and 2022/23. June 8, 2021.

City of Vista. City of Vista Six-Year Capital Improvement Program and FYs 2020/21 and 2021/22 Capital Project Budget. June 23, 2020.

City of Vista. GIS: Storm Atlas. February 21, 2019.

City of Vista. Vista Municipal Code Chapter 16.48 Flood Area Construction Regulations. April 11, 2011.

County of San Diego Office of Emergency Services. Multi-jurisdictional Hazard Mitigation Plan. 2018.

9.0 Cultural Resources

The Cultural Resources chapter reviews the existing cultural resources and areas with potential resources in the City of Vista. This chapter will inform the development of the General Plan in terms of land use decisions including placement of uses and can influence the preservation of historic and cultural resources and placemaking of the City of Vista.

9.1 Introduction

This chapter describes the natural and cultural setting of the City of Vista's (City) General Plan Update (GPU), identifies the applicable regulatory framework and known archaeological resources within the GPU area of potential effect (APE) and reviews archaeological sensitivity throughout the GPU APE. The APE includes all lands under the City's jurisdiction that will be governed in accordance with the GPU.

9.1.1 Findings

- Much of the GPU APE has undergone extensive earth-moving and consists of largely artificial fill or engineered earth. Many future developments under the GPU will have a low potential to impact archaeological resources.
- Outside of urban areas, large tracts of land and open space allotments have not changed since prehistory. These undeveloped areas have an increased potential of containing archaeological deposits. Future development of these previously undisturbed areas has moderate potential to impact archaeological resources.
- An examination of existing maps, records, and reports housed at the South Coastal Information Center (SCIC) at San Diego State University was conducted in 2022 to identify previously recorded cultural resources within the GPU APE. The 2022 records search shows that archaeological sites were recorded throughout the City prior to extensive development and that archaeological deposits were identified during subsequent ground disturbance. Though these areas have been disturbed since the recordation of these sites, it is possible that development did not completely remove the archaeological deposits. Previous developments such as parking lots, roadways without extensive subterranean utilities, or public landscaping may not have required extensive earthmoving and may have only disturbed the immediate ground surface. Future development within or adjacent to previously identified archaeological resources has a heightened potential of impacting cultural resources.

9.1.2 Regulatory Setting

Federal

Secretary of Interior Standards

The Secretary of Interior Standards are guidelines for the treatment of historic structures and while compliance is not mandatory, they are intended to promote responsible preservation practices intended to protect cultural resources. There are four treatment approaches, which include Preservation, Rehabilitation, Restoration, and Reconstruction.

National Register of Historic Places

National Register of Historic Places (NRHP) is the nation's master inventory of known historic resources and includes listings of buildings, structures, sites, objects, and districts that possess historic, architectural, engineering, archaeological, or cultural significance at the national, state, or local level. A property must have both historical significance and integrity to be eligible for listing in the NRHP.

Properties are nominated to the NRHP by the State Historic Preservation Officer of the state in which the property is located, by the Federal Historic Preservation Officer for properties under federal ownership or control, or by the Tribal Historic Preservation Officer if on tribal lands. Listing in the NRHP provides formal recognition of a property's historic, architectural, or archaeological significance based on national standards used by every state. Once a property is listed in the NRHP, it becomes searchable in the NRHP database. Documentation of a property's historic significance helps encourage preservation of the resource.

National Historic Preservation Act (NHPA)

The National Historic Preservation Act (NHPA) established the National Register of Historic Places (NRHP) and the President's Advisory Council on Historic Preservation, and provided that states may establish State Historic Preservation Officers (SHPOs) to carry out some of the functions of the NHPA.

The President's Advisory Council on Historic Preservation provides methodological and conceptual guidance for identifying historic properties.

State

California Environmental Quality Act

As described further below, the following CEQA statutes and CEQA Guidelines are relevant to the analysis of archaeological and historic resources:

- California Public Resources Code (PRC) Section 21083.2(g): Defines "unique archaeological resource."
- California Public Resources Code, Section 21084.1, and CEQA Guidelines, Section 15064.5(a): Defines cultural resources. In addition, CEQA Guidelines, Section 15064.5(b), defines the phrase "substantial adverse change" in the

significance of a cultural resource. It also defines the circumstances when a project would materially impair the significance of a cultural resource.

- California Public Resources Code, Section 21074(a): defines "Tribal cultural resources" and Section 21074(b): defines a "cultural landscape."
- California Public Resources Code, Section 5097.98, and CEQA Guidelines, Section 15064.5(e): These statutes set forth standards and steps to be employed following the accidental discovery of human remains in any location other than a dedicated ceremony.
- California Public Resources Code, Sections 21083.2(b)–21083.2(c), and CEQA Guidelines, Section 15126.4: These statutes and regulations provide information regarding the mitigation framework for archaeological and historic resources, including options of preservation-in-place mitigation measures; identifies preservation-in-place as the preferred manner of mitigating impacts to significant archaeological sites.

Native American Historic Cultural Sites (California Public Resources Code Section 5097 et seq)

The Native American Historic Resources Protection Act addresses: the disposition of Native American burials in archaeological sites and protects such remains from disturbance, vandalism, or inadvertent destruction; establishes procedures to be implemented if Native American skeletal remains are discovered during construction of a project; and establishes the Native American Heritage Commission (NAHC) to resolve disputes regarding the disposition of such remains.

California Native American Graves Protection and Repatriation Act

Enacted in 2001, the California Native American Graves Protection and Repatriation Act requires all state agencies and museums that receive state funding and that have possession or control over collections of human remains or cultural items, as defined, to complete an inventory and summary of these remains and items on or before January 1, 2003, with certain exceptions. The act also provides a process for the identification and repatriation of these items to the appropriate tribes.

Assembly Bill 52

AB 52 requires that the lead agency begin consultation with a California native tribe that is traditionally and culturally affiliated with the geographic area of a proposed project within 14 days of determining that an application for the project is complete if the project may have a substantial adverse change in the significance of a Tribal Cultural Resource (TCR). The lead agency is only required to notify tribes per AB 52 if the tribe has previously requested that the lead agency send it AB 52 notifications for CEQA projects. AB 52 applies to Notices of Preparation filed on or after July 1, 2015. It is the practice of the City to conduct all tribal consultations consistent with the government-to-government consultation specified in AB 52.

Senate Bill 18

SB 18 requires that during the preparation or amendment of the general plan, the planning agency shall provide opportunities for the involvement of California Native American Indian tribes, public agencies, public utility companies, and civic, education, and other community groups, through public hearings and any other means the city or county deems appropriate.

California Health and Safety Code Section 7050.5

California law protects Native American burials, skeletal remains, and associated grave goods, regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. California Health and Safety Code Section 7050.5 requires that if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains shall occur until the County coroner has examined the remains. If the coroner determines or has reason to believe the remains are those of a Native American, the coroner must contact the NAHC within 24 hours. The NAHC will notify the Most Likely Descendant (MLD). With the permission of the landowner, the MLD may inspect the site of discovery. The inspection must be completed within 24 hours of notification of the MLD by the NAHC. The MLD may recommend means of treating or disposing of, with appropriate dignity, the human remains and items associated with Native Americans.

California Register of Historical Resources

In California, the term "historical resource" includes, but is not limited to, "any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California" (California Public Resources Code Section 5020.1(j)). In 1992, the California legislature established the California Register of Historical Resources (CRHR) "to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change"

Local

City of Vista Municipal Code: Chapter 15.12 Historic Preservation

The Historic Preservation Code within the City of Vista's Municipal Code acknowledges the continued human settlement and activity in what now constitutes the City of Vista, from the first prehistoric Native American inhabitance to the Spanish colonist, Mexican citizens, and the historic United States citizens. Recognizing the importance of historic preservation in promoting the harmonious, orderly, and efficient development of the City, the Historic Preservation Code

establishes a process to identify, protect, enhance, and encourage the viable use of cultural resources that embody the historic, archaeological, cultural, architectural, and aesthetic heritage of the City. The Historic Preservation Code establishes procedures and standards intended to:

- Carry out the goals and policies of the General Plan.
- Safeguard the City's historic heritage as embodied and reflected in its historic resources and historic areas.
- Stabilize and improve property values.
- Preserve the City's unique visual character.
- Foster awareness of significant figures, events, and accomplishments in the City's history.
- Strengthen the local economy by promoting tourism and providing an attractive environment for business and industry.
- Protect and enhance both public and private amenities for residents, visitors, and the workforce.
- Encourage adaptive reuse and other sustainable development practices.

The Historic Preservation Code defines key historic resource terms, establishes the Historic Preservation Commission, and outlines procedures for both registering a Designated Historic Resource or altering a Designated Historic resource. The Historic Preservation Code also mandates compliance with the environmental review process under CEQA, whereby the historical significance of any feature of the built environment older than 45 years must be evaluated prior to its alteration or removal.

9.1.3 Existing Conditions

Cultural Setting

This section outlines the cultural history of northern San Diego County and the area in and around the City of Vista (Hale and Comeau 2018).

Evidence for continuous human occupation in the San Diego County region spans the last 12,000 years. Various attempts to parse out variability in archaeological assemblages over this broad time frame have led to the development of several cultural chronologies. Some of these are based on geologic time, most are based on temporal trends in archaeological assemblages, and others are interpretive reconstructions. Each of these reconstructions describes essentially similar trends in assemblage composition in more or less detail. This research employs a common set of generalized terms used to describe chronological trends in assemblage composition from an archaeological perspective: Paleoindian (pre-5500 BC), Archaic (8000 BC.–AD 500), Late Prehistoric (AD 500–1750), and Ethnohistoric (post-AD 1750). Native American aboriginal lifeways did not cease at European contact.

"Protohistoric" refers to the chronological trend of continued Native American aboriginal lifeways at the cusp of the recorded historic period in the Americas. The tribal cultural context spans all of the archaeologically based chronologies further in **Appendix I.**

Known Archaeological Resources

Archaeological resources include prehistoric and historic locations or sites where human actions have resulted in detectable changes to the area. This can include changes in the soil and the presence of physical cultural remains. Archaeological resources can have a surface component, a subsurface component, or both. Prehistoric archaeological resources are those of Native American origins. These consist of artifact scatters and deposits, hearth features, bedrock milling stations, shell middens, pictographs, petroglyphs, tool stone quarries, temporary camps, and village sites. Tribal cultural resources (TCR), similarly are resources of Native American origins and are defined as sites, features, places, cultural landscapes, sacred places, or objects that are of cultural value to a Native American tribe and are either on or eligible for listing on the national, State, or a local historic register, or which the lead agency, at its discretion, chooses to identify as TCRs. TCRs are often prehistoric archaeological resources, but not always. Agency consultation with Native American representatives is required to identify TCRs. Historic archaeological resources are those originating after European contact. These resources may include subsurface features such as wells, cisterns, or privies. Other historic archaeological remains include artifact concentrations, building foundations, or remnants of structures.

Previously Recorded Archaeological Resources

An examination of existing maps, records, and reports housed at the South Coastal Information Center at San Diego State University was conducted in 2022 to identify previously recorded cultural resources within the GPU APE. In addition to a review of previously prepared site records, the records search also reviewed previously conducted cultural inventories, historical maps of the City, ethnographies, NRHP, CRHR, California Historic Property Data File, and the lists of California State Historical Landmarks, California Points of Historical Interest, and Archaeological Determinations of Eligibility.

The 2022 search of the South Coastal Information Center (SCIC) records identified 133 archaeological resources within the GPU APE **(See Appendix I).** The prehistoric sites within the GPU APE include habitation sites, artifact scatters, shell scatters, bedrock milling stations, rock art, a trail, and isolates. The historic-period sites include foundations, homesteads, refuse scatters, railroad features, a trail, and isolates. Seven of the resources within the GPU APE have previously been evaluated and recommended eligible for listing on the CRHR, NRHP, or local listing or significant under CEQA and 22 have been recommended not eligible. The remaining resources within the GPU APE have not been evaluated. The records search also

identified 285 previous archaeological studies that have been conducted within the GPU APE.

Archaeological Resource Sensitivity

The potential of future development under the GPU to impact archaeological resources depends on archaeological sensitivity. Archaeological sensitivity varies throughout the GPU APE based on previous development, known archaeological resource locations, and topography.

Previously developed portions of the City that have undergone development or undergone other significant ground disturbances in the past preclude the existence of intact archaeological deposits. Previous significant disturbances include the development of business parks, commercial development, residential tracts, and roadways with subterranean utilities. This is particularly true where natural terrain has been greatly modified. Rolling hills within the GPU APE have been terraced or levelled to accommodate commercial centers, housing tracts, and public parks resulting in the displacement of any archaeological resources and native soils that may have been present. If future development under the GPU involves ground-disturbance within artificial fill or engineered matrix, then these developments would have a low potential to impact archaeological resources. In summary, since much of the GPU APE has undergone extensive earth-moving and consists of largely artificial fill or engineered earth, many future developments under the GPU will have a low potential to impact archaeological resources.

Outside of urban areas, large tracts of land consist of few homes and large undeveloped yards. Open space allotments are scattered throughout the City and their terrain has not changed since prehistory. These undeveloped areas have an increased potential of containing surface or subsurface archaeological deposits. Future development of these previously undisturbed areas has moderate potential to impact archaeological resources.

Some developed areas still maintain a high level of archaeological sensitivity. The 2022 records search shows that archaeological sites were recorded throughout the City prior to extensive development and that archaeological deposits were identified during subsequent ground disturbance. Though these areas have been disturbed since the recordation of these sites, it is possible that development did not completely remove the archaeological deposits. Previous developments such as parking lots, roadways without extensive subterranean utilities, or public landscaping may not have required extensive earthmoving and may have only disturbed the immediate ground surface. Future development within or adjacent to previously identified archaeological resources has a heightened potential of impacting cultural resources. Some areas of the GPU APE do not have defined archaeological resource boundaries but are known to have a heightened cultural sensitivity. Creeks and other water sources have always been epicenters of human

activity. Future development under the GPU adjacent to waterways also have an increased potential of impacting archaeological resources.

9.2 Historic Resources

The following section describes the historic setting of the City, identifies the applicable regulatory framework, and identifies the known historic built environment resources within the GPU area.

9.2.1 Findings

- There are 19 extant listed or potentially eligible historical resources in the City. One of which is technically located outside the City of Vista's jurisdictional limits but is identified in the City's 1987 Historic Resource Survey and is recognized by the City as a historic resource.
- In addition to the known historical resources, there are an additional 44 properties that were previously documented, are over the age of 50, but whose historical significance and eligibility status is not currently known. For these properties as well as properties that are not currently identified that contain buildings or structures 45 years of age or older, it is recommended that if they are located within a plan area or project area in the future they should be recorded and evaluated under all applicable historic significance criteria by an architectural historian who meets the Secretary of Interior's Standards (SOIS) professional qualifications under history or architectural history.

9.2.2 Regulatory Setting

Federal

See regulatory section under 9.1 Cultural Resources for a description of the Secretary of Interior Standards, National Register of Historic Places (NRHP), and the National Historic Preservation Act (NHPA).

State

California Register of Historical Resources (CRHR)

See regulatory section under 9.1 Cultural Resources, for information regarding the CRHR.

California Environmental Quality Act (CEQA)

See regulatory section under 9.1 Cultural Resources for information on the applicability of CEQA.

Local

The Historic Preservation Code defines key historic resource terms, establishes the Historic Preservation Commission, and outlines procedures for both registering a Designated Historic Resource or altering a Designated Historic resource.

The Historic Preservation Code also mandates compliance with the environmental review process under CEQA, whereby the historical significance of any feature of the built environment older than 45 years must be evaluated prior to its alteration or removal.

City of Vista Municipal Code: Chapter 15.12 Historic Preservation

See regulatory section under 9.1 Cultural Resources, for information on Chapter 15.12 Historic Preservation.

9.2.3 Historic Context: City of Vista (1798 – Present)

Francisco Ulloa, exploring the Pacific coast under orders from Hernán Cortes, is reported to have stopped at the San Luis Rey River in 1540 and marking the first contact between Europeans and the Luiseño Indians, although the accuracy of his exploration is disputed (Garrahy and Weber 1971). Juan Rodriguez Cabrillo, who is widely considered the first European to explore Alta California, sailed the coast through Luiseño territory in 1542, but is not reported to have landed. Father Junípero Serra initiated Spanish colonial settlement in 1769 with the founding of the first mission in San Diego. Father Juan Mariner and Father-Presidente Fermín Lasuén explored what would become northern San Diego County and western Riverside County in 1795 and 1797, respectively, in search of a location for another mission (Brigandi 1998). In 1798, Lasuén founded Mission San Luis Rey de Francia in the San Luis Rey Valley, which was once land inhabited by the Luiseño Indians. Mission San Luis Rey would become one of the largest and most prosperous missions in California (Brigandi 1998).

Under Spanish control, the missions set out to convert local populations to Christianity and to expand the influence of the Spanish empire. To support the growing mission, numerous asistencias, or sub-missions, and ranchos were established throughout the territory at or adjacent to Luiseño villages. Following Mexican independence from Spain in 1821, secularization of the missions began in 1833 in order to turn over the large land holding to private citizens, including local Indians. Mission San Luis Rey was divided into six ranchos in 1835: Santa Margarita, Las Flores, Guajome, Agua Hedionda, Buena Vista, and Monserrate. Rancho Guajome and Buena Vista became the base of what makes up today's modern Vista (Bibb 1991; Van Horn 1974).

In 1851, a group of Cahuilla and Cupeño Indians attacked American settlers in Warner's Hot Spring, hoping to unite Indian tribes and drive out the Americans (Bibb 1991). Led by Pablo Apis, the Luiseño of Temecula went to Mission San Louis Rey

and remained out of the conflict (Bibb 1991). In 1852, the Treaty of Temecula (Treaty of Peace and Friendship) was signed, providing certain lands, horses, cattle, and other supplies to the Luiseño, Cahuilla, and Serrano in exchange for government control of the rest of their lands. The U.S. Senate rejected this treaty, and 17 others in California, later that year (Bibb 1991; Van Horn 1974).

After the secularization of the California missions, Mexican governor Pío Pico awarded 2,219 acres to the Luiseño brothers Andrés and José Manuel. This land grant was known as Rancho Guajome, named after the Luiseño village wakhavumi, meaning "place of the frogs." The brothers sold their land to a wealthy Los Angeles merchant, Abel Stearns. Stearns presented the land to his sister-in-law, Ysidora Bandini as a wedding present to Cave Johnson Couts in 1851. Couts, an American army officer was appointed as sub-agent for the San Luis Rey Indians, which secured him cheap labor to develop the property into a successful cattle ranch. Rather quickly, Couts' businesses became successful and he became one of the wealthiest men in Southern California (Christenson and Sweet 2008; Smyth 1907; Cavalier 2008).

The Rancho Buena Vista land grant originally consisted of 1,184 acres issued by Governor Pío Pico to Pelipe Subria, a Luiseño Indian. Mexican law recognized Christianized Native Californians as citizens and therefore able to receive land grants. The property changed hands multiple times before being purchased by Cave Johnson Couts in 1866 along with the San Marcos and La Jolla ranchos, and government land amounting to 20,000 acres. Couts continued to develop his land by planting orchards and vineyards. The combined ranchos of Guajome and Buena Vista were celebrated for their hospitality, being the center of social activities for the surrounding ranchers and continued well past Couts death in 1874 (Christenson and Sweet 2008; Smyth 1907; Cavalier 2008).

The last rancho comprised a portion of modern-day Vista, the majority being located in the nearby city of Carlsbad, was Rancho Agua Hedionda. Agua Hedionda was comprised of 13,311 acres and was granted to Juan María Romualdo Marrón in 1842 by Mexican governor Juan Bautista Alvarado. Marrón was granted the land due to his political connections. In 1852, he applied to the Board of Land Commissioners for a clear land title, although he died only a year later. His widow, Felipa Osuna and their four children continued the legal battle, and eventually was issued a patent to ranch on the land in 1872. Although by this time, the Californio cattle-based economy fell on hard times based on a series of circumstances including drought and a changing market. The passing of the "No-Fence" law of was also a victory for farmers over the cattleman and represented a shift in the California economic structure to be based on the cultivation of the soil rather than cattle (Christenson and Sweet 2008; Ludeke 1980; Cavalier 2008).

There are still several extant ranchos from this period in Vista. These include Rancho Buena Vista Adobe, built in 1845 in what is now the center of Vista and run by the

City. Rancho Buena Vista is now operated as a public park. Another example is Rancho Guajome Adobe, also constructed in 1845 and located north of town on North Santa Fe Avenue. Rancho Guajome Adobe was acquired by the County of San Diego in 1973 and is also operated as a public park (Vista Historical Society and Museum ND).

As the large ranchos began to fade, a growing number of settlers began moving to the area to set up small-scale agricultural holdings. The annexation of California as a state also encouraged a change in the economy. John Frazier, one of these new settlers, opened the Vista Post Office in 1882, giving the area its name. Frazier originally wanted to name the Frazier's Passing, after himself, but there was already a community in California with that name (Vista Historical Society and Museum ND).

Another pair of influential settlers was Bernard Delpy and his nephew Jules Jacques Delpy, who came to Vista in 1873 from France. The pair built the first successful winery in northern San Diego County 1884, which remained open until the prohibition era. In 1887, the Santa Fe Rail Line opened between Oceanside and Escondido, spurring an economic boom in the area. Railroad service brought prospective investors to the area and boosted land sales. In 1894, the Delpy School, the area's first school, opened with seven students. (Vista Historical Society and Museum ND; ICF 2011).

While Vista grew in this period, its growth remained relatively slow until the Vista Land Company, a quarter-million-dollar corporation organized by Hartley-Martin Real Estate Company of Redlands, purchased a major portion of Rancho Buena Vista in 1912. The company then laid out several streets and constructed the 26-room Vista Inn (1913) at the corner of what is today Santa Fe Avenue and Main Street, which became the center of social and business life in northern San Diego County. Water to the hotel was provided by a local spring. (Cavalier 2008; City of Vista 2019; Vista Historical Society and Museum ND; ICF 2011).

Also in 1913, a train depot opened across from the Vista Inn that replaced the former freight platform. These developments marked the founding of Vista's downtown, prompting increased development in the area. Despite the growing number of economic opportunities in the area and this increased construction, Vista remained small and had a primarily rural and agricultural character through the early 1910s with the population at less than 1,000 people (Cavalier 2008; City of Vista 2019; Vista Historical Society and Museum ND; ICF 2011).

In 1917, the Vista Union School District combined existing elementary districts (the Vista, Buena, and Delpy Districts) into a single unified school district. The Jefferson School, an elementary school located on present-day Vista Village Drive, was the first to open under the new unified school district (Vista Historical Society and Museum ND).

Despite increased development, population, and economic activity, Vista remained a small community primarily due to a lack of readily available water. The crops that could be cultivated in Vista, such as oats and hay, were dry farmed. Developers still saw the potential in the area with its gently rolling hills, fertile soil, and moderate climate despite the water access issues facing the community. The Vista Water Company, which was founded in 1911, provided the majority of the water from several wells near the Buena Creek. The Vista Irrigation District was formed in 1923 to bring water to the area. By 1926, water was being routed by the Vista Irrigation District to the Vista and San Marcos area through Lake Henshaw and Lake Wolford (Cavalier 2008; City of Vista 2019; ET 1930; Vista Historical Society and Museum ND; ICF 2011).

The completion of the water supply project led to increased land values that prompted Vista's downtown to grow exponentially. By the 1930s, the Vista had a population of 10,000. Also in this period, Lincoln Elementary School, now the site of City Hall, opened in 1930 and the first class graduated from Vista High, located across Escondido Avenue from City Hall, in 1938. Additional notable buildings constructed in this period included the First National Bank Building, Avo Theater, the Hanes Building, and the American Legion Building (Cavalier 2008; City of Vista 2019; ET 1930; Vista Historical Society and Museum ND).

In the 1920s, the area was described as being within the "perfect climate belt," with 3,000 acres planted for avocados, oranges, lemons, and other fruit trees and an additional 1,500 acres devoted to off-season vegetables, bulbs, and flowers. The largest export was tomatoes, with the total amount of train cars used for produce and flower shipments increasing from 18 in 1926, to more than 300 in 1929. The area eventually was nicknamed the "avocado capital of the world" in 1948 once the orchards planted in the 1930s fully matured (Cavalier 2008; City of Vista 2019; ET 1930; ICF 2011).

Through World War II, Vista remained agriculturally based, advertising in newspapers under the name "The Sub-tropic Empire." Despite the area's prime conditions for farming, agriculture began to decline, as increased suburbanization led to residential subdivision of former agricultural land. In the 1950s, the population in Vista boomed. By 1955, the population had risen to 16,742, which was partially facilitated by the construction of the present-day State Route-78 from Vista to Oceanside. To combat possible problems due to this growth, the county Planning Commission put into action Vista's first master plan. Part of this master plan was the implementation of a new sewer system that would cost taxpayers $175,000. The Vista Irrigation District, the sole water supplier for 11,000 acres in the Vista area also made plans in 1956 to increase water pressure and build a reservoir (Cavalier 2008; The Vista Press 1963; SDU 1980; ICF 2011).

Residential and commercial development continued to increase in the 1960s. Vista was incorporated as a city on January 23, 1963, at which time it operated as a

general law city in which the mayor was appointed by an elected city council and not directly voted in by the citizenry. Upon incorporation, the city continued to experience development that increasingly diminished the formerly agricultural character of the area. The city's popularity and population only continued to increase from the 1970s into the early 2000s, with a population of 33,340 in 1980. This population increase was part of a general pattern of suburbanization in Southern California in the decades succeeding World War II. In 1984, voters passed a law to elect future mayors. Numerous apartment complexes were built to replace farmland and accommodate transplants as well as the development of some light manufacturing businesses into the Business Park area on the south side of Vista. In 2007, Vista became a charter city (Cavalier 2008; The Vista Press 1963; SDU 1980; City of Vista NDa).

Today, the city has over 93,000 residents and has a variety of commercial, recreational, and cultural spaces including arts venue such as the Moonlight Amphitheater (located in Brengle Terrace Park) and the Broadway Theater; museums such as the Antique Gas & Steam Engine Museum; parks and gardens including the Alta Vista Gardens as well as approximately 20 city-run parks; and the Paseo Santa Fe Corridor, a reconstructed mile pedestrian-friendly thoroughfare through Vista's downtown core completed in 2020. (City of Vista NDa; City of Vista NDc).

9.2.4 Existing Conditions

Historical resources are physical features, both natural and constructed, that reflect past human existence and are of historical, archaeological, scientific, educational, cultural, architectural, aesthetic, or traditional significance. These resources may include buildings, groups of buildings, structures, districts, street furniture, signs, cultural properties, and landscapes. For the purposes of this Existing Conditions Report assessment, built-environment properties that have been documented prior to this study and found to be eligible or listed in the National Register of Historic Places (NRHP), the California Register of Historic Places (CRHR), and/or locally designated or identified in a historic resources survey and therefore considered known historical resources are identified. Built environment historical resources most commonly consist of individual buildings or districts (residential, agricultural, industrial, and commercial), but can also include resources such as water management structures (levees, canals, dams, and ditches) or other linear resources (railroad alignments, roads, and bridges).

Known Historical Resources

The following repositories and documents were consulted to identify previously recorded historical resources, as described in this section.

- City of Vista's 1987 Historic Resource Survey / the City of Vista's Historic Resources Survey List
- South Coastal Information Center (SCIC)
- City of Vista General Plan Update 2030 PEIR (2011)
- Built Environment Resource Directory (BERD)
- The National Register of Historic Places
- The California Historic Landmark Registry and California Points of Historical Interest
- The Inventory of Historic Structures and Historical Landmarks for San Diego County

Previously recorded historical resources are listed in **Table 9.1 and Table 9.2.** These tables list all known previously recorded historical resources that have been recommended or determined eligible or are listed on the NRHP, CRHR, or the local register. Some of the identified properties were identified in multiple sources.

City of Vista's 1987 Historic Resource Survey

The City of Vista's 1987 Historic Resource Survey conducted by Marben-Laird Associates identified 22 potentially NRHP-eligible properties. Of the 22 identified properties, 18 are still extant and included in **Table 9.1**. The following resources appear to have been demolished and are not included in **Table 9.1**:

- Red Barn / Bittners Restaurant Equipment (1913), formerly located at 137 North Santa Fe
- Delpy House (1927), formerly located at 1155 Foothill Drive
- American Legion Post #365 (1948), formerly located at 321 S. Santa Fe Avenue (P-37-028773)
    - Based on historical aerial photographs, this building appears to have been demolished circa 2014 for the construction of a new multi-family residential complex.
    - The American Legion now occupies a building at 1234 S. Santa Fe Avenue. This building appears different than the building included in the photograph from the 1987 Department of Parks and Recreation 523 form prepared as part of the survey.
- City of Vista Recreation Center (1941) formerly located at 160 Recreation Way
    - Research did not locate a building at this address in Vista. It appears the building has been demolished, but it is possible it is still extant and the street on which it sits has been re-named. It is not included in **Table 9.1** for the purposes of this study.

The City of Vista's Community Development Guidebook form 2009 (updated in 2014) states that the City has a list of "22 buildings that are on the Historic Resources Survey List" (City of Vista Community Development Department 2009: 18). These resources are referring to the 22 identified properties from the 1987 Historic Resource Survey.

South Coastal Information Center (SCIC)

The SCIC is housed at San Diego State University and provides records results from the California Historical Resource Information System (CHRIS) for San Diego County. The results provided by the SCIC typically include their digitized collections of mapped prehistoric and historic archaeological resources and historic built-environment resources; Department of Parks and Recreation site records; technical reports; archival resources; and ethnographic references.

The SCIC search resulted in the identification of 44 previously recorded built environment properties. Twelve of these properties were recommended eligible or were designated historical resources. All of these properties were also identified in the BERD, the 2011 PEIR, and/or the City' s 1987 survey and are recorded in **Table 9. 1** below. Two of the identified properties had been demolished and are not included in the tables (the Red Barn and the Delpy House). Six properties had an unclear eligibility status and are recorded in **Table 9.2** below. The remaining 24 identified properties were recorded as being ineligible as historical resources and are not included in the tables below.

City of Vista General Plan Update 2030 PEIR (2011)

In 2011, a Programmatic Environmental Impact Report was prepared by ICF International for the City of Vista's General Plan 2030 Update. The General Plan 2030 PEIR included a table with 85 previously recorded properties, not all of which are eligible or potentially eligible historical resources. These 85 previously recorded properties were identified through the California Historical Resources Inventory (CHRIS); from the City of Vista's 1987 Historic Resource Survey; and the SCIC (ICF 2011: 4.5-10). The 2011 PEIR table includes properties that have been demolished as well as properties recommended or determined ineligible. This table does not include California Historical Resource status codes for identified properties, so it is unclear based on the 2011 table alone which properties are eligible and which are ineligible.

To complete **Table 9.1 and Table 9.2,** all 85 resources from this previous study were cross-checked with the BERD (which houses CHRIS data), the 1987 City of Vista Historic Resource Survey, and SCIC data to identify their status and determine if they are still extant. This cross-check resulted in the elimination of ineligible properties and the elimination of eligible or listed resources that have been demolished.

This resulted in the identification of 19 extant eligible resources. One of these resources was evaluated as eligible in the General Plan 2030 Update and was not identified in any other repositories. The other 18 identified eligible resources were also part of the City's 1987 Historic Resources Survey. This cross-check also resulted in the identification of 36 additional properties that were not listed in the BERD or other repository and whose historical status is unclear.

Eligible resources from this study are included in **Table 9.1** and properties with an unclear status (as in, they were not identified in the BERD, SCIC, or 1982 survey and their eligibility and status code is unknown) are recorded in **Table 9.2.**

Built Environment Resource Directory (BERD)

The BERD files provide information, organized by county, regarding non-archaeological resources in the Office of Historic Preservation's (OHP) inventory. The OHP inventory contains information only for built environment resources that have been processed through the office. This includes resources reviewed for eligibility for the NRHP and the California Historical Landmarks programs through federal and state environmental compliance laws, and resources nominated under federal and state registration programs. The BERD replaces the former Historic Properties Directory (HPD) that previously provided evaluation status information for those resources processed through the OHP.

Properties that had California Historical Resource Status Codes indicating ineligibility were not included. Properties from the BERD with a status code of 7K, meaning they have been submitted to the Office of Historic Preservation (OHP) for action but not reevaluated, are included in **Table 9.2**, as their status is unclear. This resulted in the identification of four properties with the status code of 7K.

All resources with California Historical Resources Status codes indicating eligibility in the BERD were included in **Table 9.1**. This resulted in the identification of four previously recorded historical resources, all of which were included on the 1987 Historic Resource Survey. One of these resources has been demolished (the Red Barn) and is not included in **Table 9.1.**

Other Repositories

In addition to the above resources, the following databases were reviewed for previously recorded historical resources in Vista:

- The National Register of Historic Places
- The California Historic Landmark Registry and California Points of Historical Interest
- The Inventory of Historic Structures and Historical Landmarks for San Diego County

These repositories did not include any historical resources that were not previously identified through the repositories described above. The source(s) for all identified resources is included in the "Source" column of **Table 9.1.**

The records search resulted in the identification of 19 extant previously recorded historical resources in the City. As mentioned, previously recorded properties that were recommended or determined ineligible, and previously recorded historical resources that were found eligible but have since been demolished, are not included in **Table 9.1.**

Figure 9.1 shows the location of all 19 extant listed or potentially eligible historical resources in the City. One of these resources, Mary Helen Ranch at 2440 East Vista Way, is technically located outside the City of Vista's jurisdictional limits. It is included in this study because it was previously identified in the City's 1987 Historic Resource Survey and is recognized by the City as a historic resource.

Table 9.1: Previously Identified Built Environment Historical Resources

Primary No.	Build Date	Name / Address	Description	Status Code	Source
None listed	None listed	2376 Alta Vista Drive	Spanish Colonial Revival residence	3S	Marben-Laird Associates 1987: 9 ICF 2011: 4.5-10
P-37-027667	c. 1845	Rancho Buena Vista Adobe 640 Alta Vista Drive	Adobe house and event venue run by the City of Vista	3S	Marben-Laird Associates 1987: 9 ICF 2011: 4.5-10: SCIC
P-37-028771	1928	McCurdy/Morton House 1260 Alta Vista Drive	Spanish Colonial Revival residence	3S	Marben-Laird Associates 1987: 9 ICF 2011: 4.5-10 SCIC
P-37-028780	1936	James Armstrong House 1540 Alta Vita Drive	Spanish Colonial Revival residence	3S	Marben-Laird Associates 1987: 9 ICF 2011: 4.5-10 SCIC
P-37-028781	1932	Neva Clement House 128 S. Beaumont Lane	Spanish Colonial Revival residence	3S	Marben-Laird Associates 1987: 9 ICF 2011: 4.5-10 SCIC
P-37-028767 (House)	c. 1884 (house); c. 1905 (barn)	English Gentry House and Barn 2261 Edgehill	Vernacular house with Queen Anne detailing and shingle style barn	3S	Marben-Laird Associates 1987: 9 ICF 2011: 4.5-10

Primary No.	Build Date	Name / Address	Description	Status Code	Source
P-37-028768 (Barn)					SCIC
P-37-028765	1933	Rancho Minerva 2317 Foothill Drive	Ranch style property; now houses the Vista Historical Society	1CS	BERD Marben-Laird Associates 1987: 9 ICF 2011: 4.5-10
P-37-028769	C. 1928	Smith/SOS House 1030 Heather Drive	California ranch style residence Unclear if extant based on Google Maps imagery	3S	Marben-Laird Associates 1987: 9 ICF 2011: 4.5-10 SCIC
P-37-028764	1928	First National Bank of Vista 211 Main Street	Renaissance Revival commercial bank building.	3S	North County Daily Star 2019 Marben-Laird Associates 1987: 9 ICF 2011: 4.5-10 SCIC
P-37-028775	1940	Dutch Bakery 226 Main Street current); 226 E. Vista Way (former)	Vernacular commercial with Art Deco detailing	3S	Marben-Laird Associates 1987: 9 ICF 2011: 4.5-10 SCIC
P-37-028772	1948	Avo Theater 303 Main Street (current); 303 E. Vista Way (former)	Art Deco commercial theater	3S	Marben-Laird Associates 1987: 9 ICF 2011: 4.5-10
None listed	1900	1624 San Luis Rey Avenue	Adobe residence	3S	Marben-Laird Associates 1987: 9 ICF 2011: 4.5-10
None listed	None listed	614 S. Santa Fe Avenue	Recommended eligible as a result of an evaluation completed as part of the 2011 Vista General Plan 2030 Update PEIR	3CS	ICF 2011: 4.5-10
P-37-005992	1852-1853	Guajome Ranch House 2210 N. Santa Fe Avenue	1850s adobe hacienda. Served as the headquarters of	1CL (1981);1S (1970); California Point of Historical	BERD California Points of Historical Interest

Primary No.	Build Date	Name / Address	Description	Status Code	Source
			Rancho Guajome, a Mexican land grant.	Interest; California Historic Landmark	California Historical Landmarks Marben-Laird Associates 1987: 9 ICF 2011: 4.5-10 SCIC
P-37-028770	1929	Charles A. Braun House 790 Vale View Drive	Mission Revival / Moorish style residence designed by Edgar Vaughn Ullrich; listed on NRHP	1S	BERD Marben-Laird Associates 1987: 9 ICF 2011: 4.5-10 SCIC
P-37-028778	c. 1948	Sheffield's Department Store 224 Main Street (current); 224 E. Vista Way (former)	Commercial building	3S	Marben-Laird Associates 1987: 9 ICF 2011: 4.5-10 SCIC
P-37-028777	Est. 1925	Wildwood Park 651 E. Vista Way	Park	3S	Marben-Laird Associates 1987: 9 ICF 2011: 4.5-10 SCIC
None listed	1937	Mary Helen Ranch 2440 E. Vista Way	Spanish Colonial Revival residence	3S	Marben-Laird Associates 1987: 9 ICF 2011: 4.5-10
P-37-028776	1913	Santa Fe Railroad Depot 207 Washington Street	Former railroad depot; moved to present location in 1983.	3S	Marben-Laird Associates 1987: 9 ICF 2011: 4.5-10 SCIC

Source: California Historical Resource Status Codes

1CL = California State Historical Landmark (CHL) numbered 770 and above, or an earlier CHL reheard by the State Historical Resources Commission (SHRC) and determined that it also meets California Register criteria. Listed in the California Register.

1S = Individually listed in the National Register by the Keeper. Listed in the California Register.

1CS = Individually listed in the California Register by the SHRC.

2S = Individually determined eligible for the National Register by the Keeper. Listed in the California Register.

2S2 = Individually determined eligible for the National Register by consensus through Section 106 process. Listed in the California Register.

3CS = Appears eligible for CR individually through survey evaluation.

3S = Appears eligible for the National Register individually through survey evaluation.

7K = Submitted to the Office of Historic Preservation (OHP) for action but not reevaluated.

Historic Era Properties – Significance Unknown

In addition to the known historical resources in **Table 9.1** (above), the records search resulted in identifying an additional 44 properties that were previously documented, are over the age of 50, but whose historical significance and eligibility status is not currently known. These properties are listed in **Table 9.2.**

Table 9.2 consists of four properties located in the plan area identified with a California Historical Resource status code of 7K in the BERD, meaning documentation was submitted to the Office of Historic Preservation (OHP) for action but not evaluated and their historical status is unclear. The remaining 41 properties were included in the 2011 PEIR or the SCIC with no information on their historic significance and their eligibility status code was not listed. See the "Methodology" section for additional information on how these properties were identified. These properties are not included in **Figure 9.1**.

For these properties listed below, as well as properties that are not currently identified that contain buildings or structures 45 years of age or older, it is recommended that if they are located within a plan area or project area in the future they should be recorded and evaluated under all applicable historic significance criteria by an architectural historian who meets the Secretary of Interior's Standards (SOIS) professional qualifications under history or architectural history.

Table 9.2: Historic Era Properties – Significance Unknown

Primary No.	Build Date	Name / Address	Description	Status Code	Source
P-37-028783	c. 1920s	2376 Alta Vista Drive	Mission Revival Residence	None listed	SCIC
P-37-018218	1940s	1812-30 Anna Lane	Church of Christ complex consisting of three former single-family residences built in the 1940s	None listed	ICF 2011: 4.5-10
P-37-018219	1946	1823 Anna Lane	Residence	None listed	ICF 2011: 4.5-10
P-37-027643	1947	1365 Clarence Drive	Residence	None listed	ICF 2011: 4.5-10
P-37-027644	1933	1367 Clarence Drive	Residence	None listed	ICF 2011: 4.5-10
None listed	None listed	Hane's Building 200 East Broadway	Commercial building	7K	BERD ICF 2011: 4.5-10
None listed	None listed	Connie's Hairport 217 East Broadway	Commercial building	7K	BERD ICF 2011: 4.5-10
P-37-033593	c. 1928	Delpy Reservoir Southeast corner of Foothill Drive and East Vista Way	Inactive reservoir. associated with the now-demolished Delpy House and Farm. Only remaining feature of the original farm.	None listed	SCIC
P-37-018205	1935	110 El Valle Opulento	Residence	None listed	ICF 2011: 4.5-10
P-37-018206	1945	111 El Valle Opulento	Residence	None listed	ICF 2011: 4.5-10
P-37-018186	1940	124 Estrelita Drive	Residence	None listed	ICF 2011: 4.5-10
P-37-035911	c. 1935 (likely earlier)	Green Oak Ranch Located at the end of Green Oak Road	Host camp. The CCC used the camp from 1935 to 1941. Camp Vista (battalion base camp) operated form 1942-1944. Extant structures include Green Oak Prayer Chapel, Craft House, and wall	None listed	SCIC
P-37-018223	1952	116 Hannalei Drive	Residence	None listed	ICF 2011: 4.5-10
P-37-018216	c. 1955	138 Hesmay Drive	Multi-family residence	None listed	ICF 2011: 4.5-10

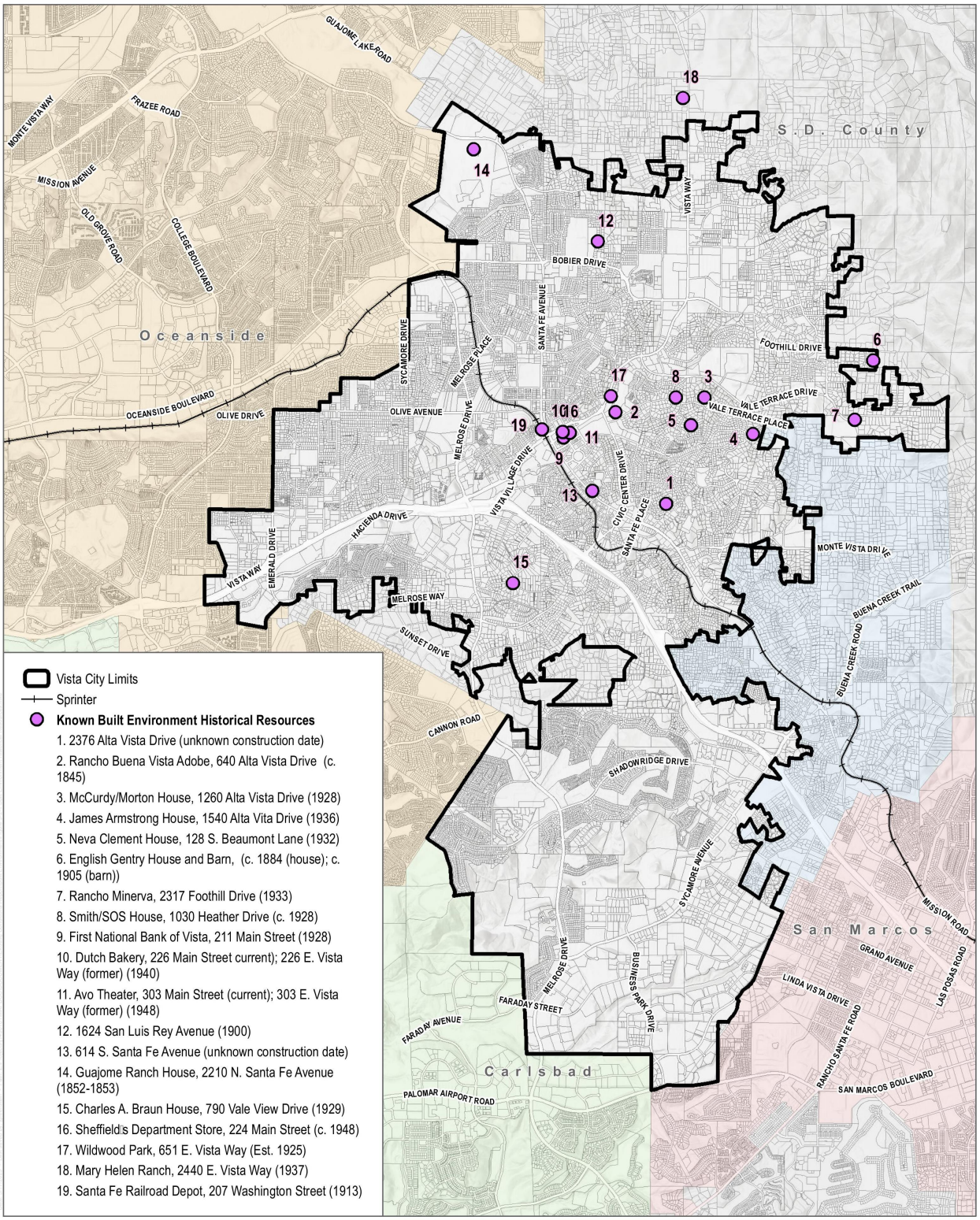
Primary No.	Build Date	Name / Address	Description	Status Code	Source
P-37-018200	1932	231 Poinsettia Avenue	Residence	None listed	ICF 2011: 4.5-10
P-37-018203	1955	2140 Primrose Avenue	Residence	None listed	ICF 2011: 4.5-10
P-37-018202	1940	2184 Primrose Avenue	Residence	None listed	ICF 2011: 4.5-10
P-37-018204	1930	206 Robelini Avenue	Residence	None listed	ICF 2011: 4.5-10
P-37-018185	1939	1750 South Santa Fe Avenue	Residence	None listed	ICF 2011: 4.5-10
P-37-018215	1940	1904 South Santa Fe Avenue	Residence	None listed	ICF 2011: 4.5-10
P-37-018214	c. 1950	1922 South Santa Fe Avenue	Commercial building	None listed	ICF 2011: 4.5-10
P-37-018213	c. 1946	1964 South Santa Fe Avenue	Residence turned commercial building	None listed	ICF 2011: 4.5-10
P-37-018212	1943	1968 South Santa Fe Avenue	Commercial building	None listed	ICF 2011: 4.5-10
P-37-018211	1945	1972 South Santa Fe Avenue	Residence turned commercial building	None listed	ICF 2011: 4.5-10
P-37-018210)	c. 1946	1974 South Santa Fe Avenue	Residence turned commercial building	None listed	ICF 2011: 4.5-10
P-37-018209	c. 1950	1984 South Santa Fe Avenue	Residence turned commercial building	None listed	ICF 2011: 4.5-10
P-37-018208	c. 1950	1988 South Santa Fe Avenue	Residence turned commercial building	None listed	ICF 2011: 4.5-10
P-37-018207	c. 1950-1955	1990 South Santa Fe Avenue	Commercial building	None listed	ICF 2011: 4.5-10
P-37-018201	1927	2357 South Santa Fe Avenue	Residence	None listed	ICF 2011: 4.5-10
P-37-018187	c. 1950	2550 South Santa Fe Avenue	Industrial building	None listed	ICF 2011: 4.5-10
P-37-018199	c. 1950-1955	2553 South Santa Fe Avenue	Industrial building	None listed	ICF 2011: 4.5-10
(P-37-018188	c. 1940	2570 South Santa Fe Avenue	Industrial building	None listed	ICF 2011: 4.5-10
P-37-018198	c. 1950-1955	2577 South Santa Fe Avenue	Commercial building	None listed	ICF 2011: 4.5-10

Primary No.	Build Date	Name / Address	Description	Status Code	Source
P-37-018189	c. 1950	2600 South Santa Fe Avenue	Industrial building	None listed	ICF 2011: 4.5-10
(P-37-018192	1948	2625 South Santa Fe Avenue	Commercial building	None listed	ICF 2011: 4.5-10
P-37-018184	1935	1547 Sunbury Court	Residence	None listed	ICF 2011: 4.5-10
P-37-036623	c. 1938-1946	160 Valencia Drive	Single family residence	None listed	SCIC
P-37-036622	Early to mid-1900s	166 Valencia Drive	Altered single-family minimal traditional residence	None listed	SCIC
None listed	None listed	Club Vista 328 East Vista Way	Commercial building	7K	BERD
P-37-028779	1937	2440 East Vista Way	Residence	None listed	ICF 2011: 4.5-10
P-37-018222	c. 1950	101 Woodland Drive	Commercial building	None listed	ICF 2011: 4.5-10
P-37-018220	1946	109 Woodland Drive	Residence	None listed	ICF 2011: 4.5-10
P-37-018221	c. 1950	111 Woodland Drive	Residence; possibly moved	None listed	ICF 2011: 4.5-10
P-37-018217	c. 1950	114 Woodland Drive	Residence	None listed	ICF 2011: 4.5-10
P-37-039448	c. 1940s	Historic-period concrete culvert pipe Located underneath a segment of Beverly Drive, with the western end of the culvert pipe visible on the property at 942 Beverly Drive.	Historic-period concrete culvert pipe used to transport water from the eastern side of Beverly Drive to the western side of Beverly Drive	None listed	SCIC

California Historical Resource Status Codes

7K = Submitted to the Office of Historic Preservation (OHP) for action but not reevaluated.

Figure 9.1: Previously Identified Historic Built Environment Properties



9.3 Paleontological Resources

Paleontological resources, or fossils, are the remains of once living plants and/or animals and their traces (e.g., burrows and tracks) preserved in earth's crust, and are generally considered to be greater than 5,000 years old or prior to recorded human history per the Society of Vertebrate Paleontology (SVP 2010) guidelines. With the exception of fossils found in low-grade metasedimentary rocks, significant paleontological resources are found in sedimentary rock units that are old enough to preserve the remains or traces of plants and animals.

9.3.1 Findings

According to the paleontological sensitivity map **(Figure 9.2)** for the area within the City of Vista boundaries, approximately 30 percent of the area has a rating of high sensitivity (shown in red on **Figure 9.2**), located mainly along the western boundary, northwest side and the southeast side, in the Eocene Santiago Formation (Kennedy et al. 2007). Approximately 10 percent to 15 percent of the area has a low to high sensitivity rating (shown in orange) in alluvial flood plain deposits **(Figure 9.2)** (Kennedy et al. 2007). In these deposits, the sensitivity becomes greater at depth and are generally located in valleys and drainages across the area within the City of Vista boundaries. All other areas within the boundaries that have no color attributed to them have zero or no potential for fossils and are composed of sediments of volcanic origin. The geologic units found within the City of Vista boundaries and their corresponding sensitivities are listed in **Table 9.3.**

The City of Vista has adopted and implemented policies and practices in compliance with Federal, State, and Local laws and ordinances to address the adverse impacts of construction activities, both direct and cumulative, for areas of high-density land uses that have a moderate to high paleontological sensitivity that minimizes the impacts to those fossil resources to a less than significant level.

9.3.2 Regulatory Setting

Paleontological resources are protected on state lands under the California Environmental Quality Act (CEQA) and on county and city lands according to general plan policies (City of Vista 2011; County of San Diego 2009; Deméré and Walsh 1993; Murphey et al. 2019). While the City is the lead agency and authorized to implement/responsible for CEQA guidelines at the local level, federal regulations are also provided here for reference should they be relevant in the future.

Federal

Paleontological Resources Protection Act of 2009

The Paleontological Resources Protection Act (PRPA) of 2009 directs the Secretaries of the Interior and Agriculture to manage and protect paleontological resources on federal land using "scientific principles and expertise." The PRPA incorporates most of the recommendations of the Secretary of the Interior's report titled Assessment

of Fossil Management on Federal and Indian Lands (DOI 2000) in order to formulate a consistent paleontological resources management framework. In passing the PRPA, 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 PRPA codifies existing policies of the U.S. Bureau of Land Management, National Park Service, U.S. Forest Service, Bureau of Reclamation, and the U.S. Fish and Wildlife Service, and provides the following:

1. Criminal and civil penalties for illegal sale and transport and theft and vandalism of fossils from federal lands
2. Minimum requirements for paleontological resource-use permit issuance (terms, conditions, and qualifications of applicants)
3. Definitions for "paleontological resources" and "casual collecting"
4. Requirements for curation of federal fossils in approved repositories

The PRPA requires the Secretaries of the Interior and Agriculture to manage and protect paleontological resources on federal land. The PRPA furthers the protection of fossils on federal lands by criminalizing the unauthorized removal of fossils.

The Federal Land Policy Management Act of 1976 (P.L. 94-579; 90 Statute 2743, USC 1701–1782)

The Federal Land Policy Management Act requires that public lands be managed such that the quality of their scientific values is protected. The act recognizes significant paleontological resources as scientific resources and requires federal agencies to manage public lands in a manner that protects scientific resource quality.

The National Environmental Policy Act of 1969 (P.L. 91-190; 31 Statute 852, 42 USC 4321–4327)

The National Environmental Policy Act requires that important natural aspects of our national heritage be considered in determining the environmental consequences of any proposed project.

State

California Environmental Quality Act of 1970

Paleontological resources are afforded consideration under CEQA. Appendix G of the State of California CEQA Guidelines (14 CCR 15000 et seq.) includes the following as one of the questions to be answered in the Environmental Checklist (Appendix G, Section VII, Part f): "Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?" California Public Resources Code, Section 5097.5, specifies that any unauthorized removal of paleontological remains is a misdemeanor. Further, California Penal Code Section

622.5 sets the penalties for damage to or removal of paleontological resources. California state laws and regulations under California Public Resources Code, Section 5097.5, apply to paleontological resources and projects that have the potential to impact those resources.

PRC 5097-5097.6 – Archaeological, Paleontological and Historical Sites

PRC Section 5097-5097.6 outlines the requirements for cultural resource analysis prior to the commencement of any construction project on State lands. This section identifies that the unauthorized disturbance or removal of archaeological, historical, or paleontological resources located on public lands is a misdemeanor. It prohibits the knowing destruction of objects of antiquity without a permit (expressed permission) on public lands and provides for criminal sanctions. This section was amended in 1987 to require consultation with the California Native American Heritage Commission (NAHC) whenever Native American graves are found. Violations for the taking or possessing remains or artifacts are felonies.

Regional

The San Diego County General Plan 2011 (County of San Diego, 2009)

County of San Diego Code of Regulatory Ordinances Sections 87.101 -87.804, Grading, Clearing, and Watercourses Ordinance Section 87.430 of the County's Grading and Clearing Ordinance provides for the requirement of a paleontological monitor at the discretion of the County. In addition, the suspension of grading operation is required upon the discovery of fossils greater than twelve inches in any dimension. The ordinance also requires notification of the County Official (e.g., Permit Compliance Coordinator). The ordinance gives the County Official the authority to determine the appropriate resource recovery operations, which shall be carried out prior to the County Official's authorization to resume normal grading operations.

General Plan Update Policies Policy COS-9.1: Preservation. Require the salvage and preservation of unique paleontological resources when exposed to the elements during excavation or grading activities or other development processes. Mitigation Measures Cul-3.1 Implement the Grading Ordinance and CEQA to avoid or minimize impacts to paleontological resources, require a paleontological resources monitor during grading when appropriate, and apply appropriate mitigation when impacts are significant. Cul-3.2 Implement, and update as necessary, the County's Guidelines for Determining Significance for Paleontological Resources to identify and minimize adverse impacts to paleontological resources.

Local

The City of Vista 2030 General Plan

M-CR-2: Paleontological Monitoring. Monitoring during construction grading or trenching shall be required for projects that would excavate to a depth of ten feet or more, or that propose a total cut amount of 1,000 cubic yards or more. Prior to the

issuance of any grading and/or excavation permit, the project applicant must provide written proof to the City Planner that a Professional Paleontologist has been retained to observe all earth-disturbing activities. All fossil materials recovered during mitigation monitoring shall be cleaned, identified, catalogued, and analyzed in accordance with standard professional practices. The results of the field work and laboratory analysis shall be submitted in a technical report and the entire collection transferred to an approved facility (City of Vista 2011).

9.3.3 Existing Conditions

The Draft Program Environmental Impact Report prepared for the Vista General Plan 2030 Update (ICF International 2011a) and paleontological resources assessment prepared by the San Diego Natural History Museum (Deméré 2007) divide the City into two regions: the Inland Mesa and Canyon Region and the Peninsular Ranges Foothill Region. The Inland Mesa and Canyon Region is characterized by Eocene and Pleistocene marine and non-marine sedimentary deposits (Deméré 2007). The Peninsular Ranges Foothill Region is predominantly Mesozoic plutonic igneous bedrock, with lesser amounts of metavolcanic and metasedimentary rocks (Deméré 2007).

Figure 9.3 has been reproduced here from Deméré (2007), as it provides stratigraphic context for the geological units that occur within the City of Vista and its Sphere of Influence.

The Inland Mesa and Canyon Region and Peninsular Ranges Foothill Region may be further subdivided into the following eight (8) subregions, or Planning Areas (PAs):

- PA 1 West Vista
- PA 2 Southwest Vista
- PA 3 Shadowridge
- PA 4 Vista Business Park
- PA 5 East Vista
- PA 6 North Vista
- PA 7 Vista Village
- PA 8 Mar Vista/Sunset/Carriage Hill

The Inland Mesa and Canyon Region includes PAs 1, 2, 3, 4, and 6. The Peninsular Ranges Foothill Region includes PAs 3, 5, 6, 7, and 8.

Existing paleontological resources occur within the General Plan area, either within the City of Vista boundary area or the City of Vista Sphere of Influence boundary area. The description is based on literature review and the results of the San Diego Natural History Museum Records Search.

Known Paleontological Resources

Since the 2007 paleontological resources report, 26 new localities have been found within the General Plan area boundaries. In total, the San Diego Natural History Museum (SDNHM) has record of 38 total localities within the General Plan area boundaries. These localities occur mainly with the Eocene aged Santiago Formation, with locality concentrations occurring mainly at the southeastern end of the boundary area and along the northwestern side of the boundary area. There are some localities reported from the deeper alluvial flood plain deposits that are of Pleistocene age, also occurring along the northwestern side of the boundary area (SDNHM 2022).

The alluvial flood plain deposits occur mainly within low lying areas, drainages, and valley fills throughout the City limits. The surficial gravels are aged Holocene and have low potential for fossils but as one goes deeper the bedded gravels have yielded Pleistocene aged fossils of mammoth. Fossil discoveries to the north, and outside of the City's sphere of influence include a mammoth tusk discovered along the SR 76 (EB) near Melrose Drive, during trenching for irrigation by Caltrans District 11. In similar deposits near the I-15 and SR-76 interchange within the San Luis Rey River Valley, also during construction by Caltrans District 11, a prehistoric long-horned bison skull (*Bison latifrons*) and associated postcranial remains were discovered (Deméré et al., 2013). These Pleistocene aged portions of the unit therefore have a high paleontological sensitivity (Demere' 2007, SDNHM 2022).

The Eocene aged Santiago Formation has produced localities from fluvial, estuarine, lagoonal, and marine deposits. A large portion of these localities have been found during paleontological monitoring efforts during construction. These efforts and within this formation have produced trace fossils such as sponge borings, burrows and coprolites; fossilized remains and impressions of plants like tropical almond, willow, mangrove, and other vascular plants; marine invertebrates including sponges, snails, oysters, clams, mussels, foraminifera, and decopods; and marine vertebrates such as rays and sharks. Since the fossil collecting localities noted in the Deméré (2007) report, fossilized plant impressions or remains have been recorded in the City of Vista (see Confidential Records Search Results). The Santiago Formation has a paleontological sensitivity of high (Deméré and Walsh 1993, SDNHM 2022).

Table 9.3: Paleo Sensitivity of Formations within the City of Vista

Geological Unit Symbol	Geological Unit Name	Age	Paleo Sensitivity
Qa	Quaternary younger and older alluvial flood plain deposits, undifferentiated	Holocene	Low
		Pleistocene	High
Tsa	Santiago Formation	Eocene	High
PRB* *Includes: Kgb & Kt	Peninsular Ranges Batholith	Cretaceous	Zero/No Potential
KJsp	Santiago Peaks Volcanics	Jurassic	Zero/No Potential

Figure 9.2: Paleontological Resources Sensitivity Map

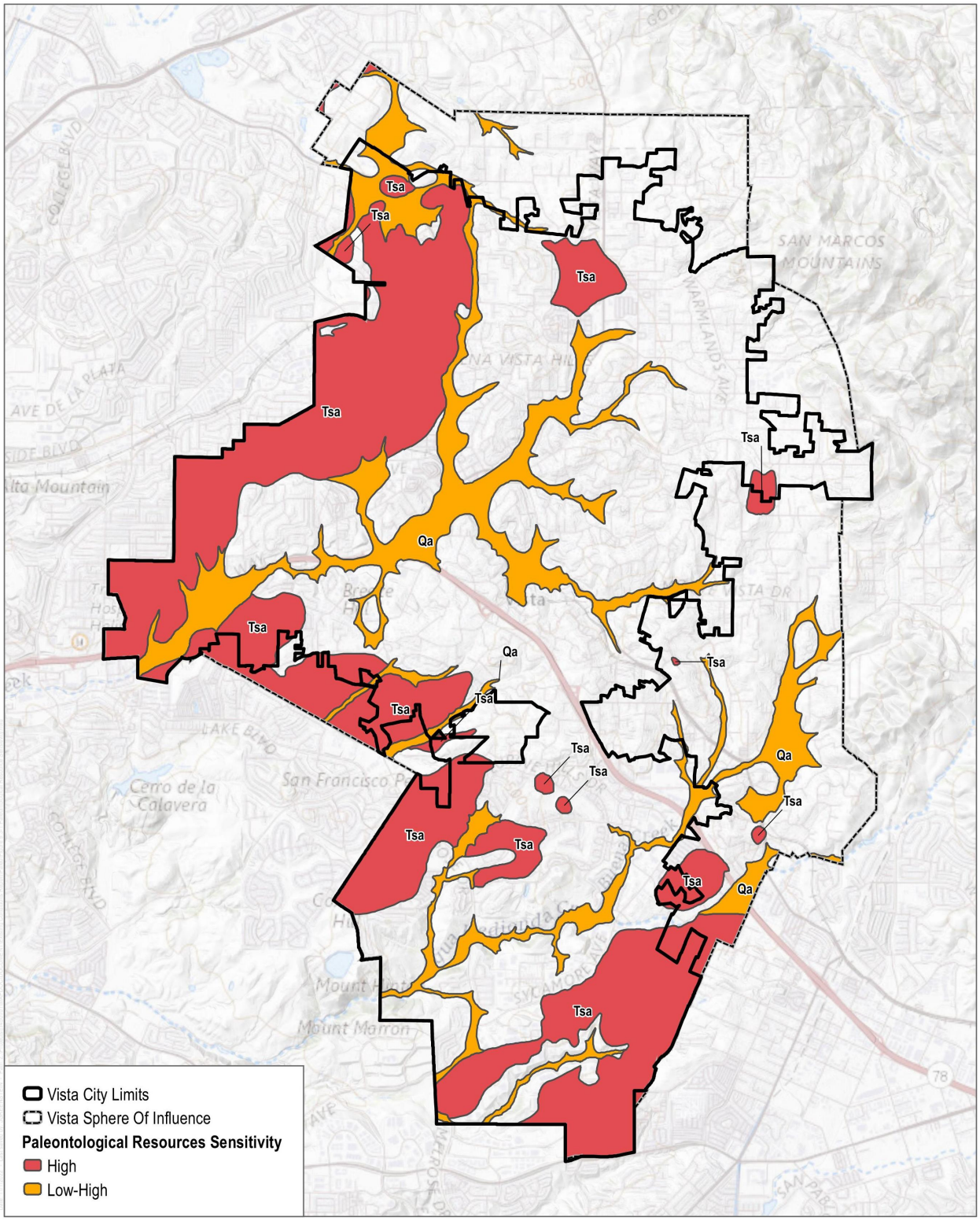
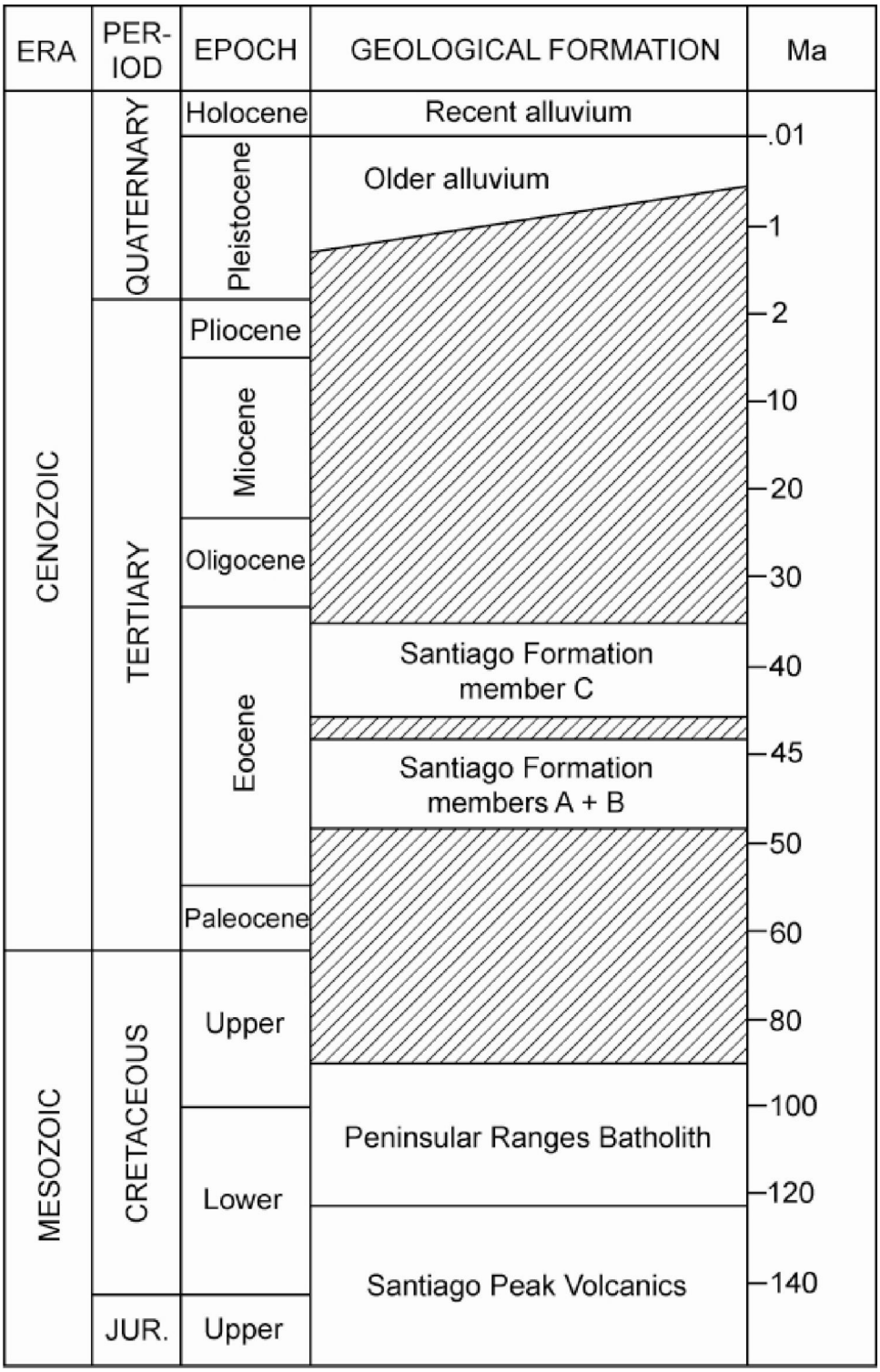


Figure 9.3: Generalized stratigraphic column for the City of Vista and its Sphere of Influence (Reproduced from Deméré 2007)



9.4 Key Terms

Paleontological Resources

Qa: Quaternary younger and older alluvial flood plain deposits, undifferentiated

Tsa: Santiago Formation

PRB* *Includes: Kgb & Kt: Peninsular Ranges Batholith

KJsp: Santiago Peaks Volcanics

Pleistocene Age: A period during which glacial and interglacial climatic climate fluctuations took place. This epoch ended approximately 11,700 years ago.

Holocene Age: Approximately the last 11,700 years of the Earth's history, since the conclusion of the last major glacial epoch (i.e. “ice age”).

Eocene Age: This period began 56 million years ago and ended 33.9 million years ago.

Jurassic Age: Extending from 201.3 million to 145 million years ago, this period is marked by substantial continental, plate tectonic and oceanic shifts; significant changes in biological systems; and biological diversity of land and sea ecosystems, including dinosaurs.

Cretaceous Age: A period occurring between 145.5 and 65.5 million years ago, preceded by the Jurassic age. The extinction of the dinosaurs marked the end of this age.

9.5 References

Cultural Resources

Basgall, M.E., and M. Hall. 1990. “Adaptive Variation in the North-Central Mojave Desert.” Paper presented at the 55th Annual Meeting of the Society for American Archaeology, Las Vegas, Nevada.

Basgall, M.E., and M. Hall. 1993. Adaptive Variation in the North-Central Mojave Desert. Paper Presented at the 55th Annual Meeting of the Society for American Archaeology, Las Vegas.

Basgall, M.E., L. Johnson, and M.J. Hale. 2002. “An Evaluation of Four Archaeological Sites in the Lead Mountain Training Area, Marine Corps Air Ground Combat Center, Twentynine Palms, California.” Submitted to U.S. Army Corps of Engineers, Fort Worth, Texas.

Bean, L.J., and F.C. Shipek. 1978. “Luiseño.” In Handbook of North American Indians, Vol. 8, California, edited by R.F. Heizer, 550–563. Washington, D.C.: Smithsonian Institution.

Boscana, G. 1846. “Chinigchinich: A Historical Account of the Origin, Customs, and Traditions of the Indians at the Missionary Establishment of St. Juan Capistrano, Alta California.” In Life in California, edited by A. Robinson, 227–341. New York, New York: Wiley & Putnam.

Byrd, B.F., and S.N. Reddy. 2002. “Late Holocene Adaptations along the Northern San Diego Coastline: New Perspectives on Old Paradigms.” In Cultural Complexity on the California Coast: Late Holocene Archaeological and Environmental Records, edited by J.M. Erlandson and T.L. Jones, 41–62. Los Angeles, California: University of California–Los Angeles Press.

City of Vista 2013. The Historic Preservation Code. Chapter 15.12, Municipal Code. Vista, California.

County of San Diego. 2007. Ordinance No. 9890 (N/S). County of San Diego Board of Supervisors. San Diego, California.

CSP (California State Parks). 2009. "Preservation Matters." The Newsletter of the California Office of Historic Preservation 2(3): 3–21.

Davis, E.L. 1978. The Ancient Californians: Rancholabrean Hunters of the Mojave Lakes Country. Los Angeles, California: Natural History Museum of Los Angeles County.

Hale, M. and B. Comeau. 2018. Cultural Resources Report for the Newland Sierra Project, San Diego County, California.

Fages, P. 1937. A Historical, Political, and Natural Description of California (1775). Translated by Herbert Ingram Priestly. Berkeley, California: University of California Press.

Gallegos, D.R. 1987. "San Dieguito River-La Jolla: Chronology and Controversy." San Diego County Archaeological Society, Research Paper No. 1.

Geiger, M., and C.W. Meighan. 1976. As The Padres Saw Them: California Indian Life and Customs as Reported by the Franciscan Missionaries, 1813–1815. Santa Barbara, California: Santa Barbara Mission Archive Library.

Golla, V. 2007. "Linguistic Prehistory." In California Prehistory: Colonization, Culture, and Complexity, edited by T.L. Jones and K.A. Klar, 71–82. New York, New York: Altamira Press.

Griset, S. 1996. "Southern California Brown Ware." Unpublished PhD dissertation; University of California, Riverside.

Hale, M.J. 2001. "Technological Organization of the Millingstone Pattern in Southern California." Master's thesis; California State University, Sacramento.

Hale, M.J. 2009. "San Diego and Santa Barbara: Socioeconomic Divergence in Southern California." PhD dissertation; University of California, Davis.

Harrington, J.P. 1934. "A New Original Version of Boscana's Historical Account of the San Juan Capistrano Indians of Southern California." Smithsonian Miscellaneous Collections 92(4).

Hector, S.M. 2007. "Archaeological Investigations at University House Meeting Center and Chancellor Residence, CA-SDI-4669 (SDM-W-12), University of California at San Diego, La Jolla, California." ASM Affiliates.

Johnson, J.R., and J.G. Lorenz. 2006. "Genetics, Linguistics, and Prehistoric Migrations: An Analysis of California Indian Mitochondrial DNA Lineages." Journal of California and Great Basin Anthropology 26:33–64.

Kroeber, A. 1925. Handbook of the Indians of California. Washington D.C.: Smithsonian Institution.

Laylander, D. 2000. Early Ethnography of the Californias, 1533-1825. Salinas, California: Coyote Press Archives of California Prehistory.

Laylander, D. 2010. "Linguistic Prehistory." Research Issues in San Diego Prehistory. Accessed August 31, 2012. http://www.sandiegoarchaeology.org/Laylander/Issues /index.htm

Lightfoot, K.J. 2005. "Indians, Missionaries, and Merchants." Berkeley, California: University of

Preston, W.L. 2002. "Portents of Plague from California's Protohistoric Period." Ethnohistory 49:69–121.

Rogers, M.J. 1929. “The Stone Art of the San Dieguito Plateau.” American Anthropologist 31:454–467.

Rogers, M.J. 1945. “An Outline of Yuman Prehistory.” Southwestern Journal of Anthropology 1:167–198.

Sparkman, Philip S. 1908. The Cultural of the Luiseño Indians. University of California Publications in American Archaeology and Ethnology 8(4):187-234.

True, D.L. 1980. “The Pauma Complex in Northern San Diego County: 1978.” Journal of New World Archaeology 3(4): 1–39.

Wallace, W.J. 1955. “A Suggested Chronology for Southern California Coastal Archaeology.” Southwestern Journal of Anthropology 11:214–230.

Warren, C.N. 1964. “Cultural Change and Continuity on the San Diego Coast.” PhD dissertation; University of California, Los Angeles.

Warren, C.N. 1968. “Cultural Tradition and Ecological Adaptation on the Southern California Coast.” In Archaic Prehistory in the Western United States, edited by C. Irwin-Williams, 1–14. Portales, New Mexico: Eastern New Mexico University Contributions in Anthropology.

Warren, C.N., G. Siegler, and F. Dittmer. 2004. “Paleoindian and Early Archaic Periods.” In Prehistoric and Historic Archaeology of Metropolitan San Diego: A Historic Properties Background Study. Prepared for the Metropolitan Wastewater Department, City of San Diego. Encinitas, California: ASM Affiliates.

Historic Resources

Cavalier, Lois Vaughan. 2008. Images of America: Vista. Arcadia Publishing: Charleston, SC.

Christenson, Lynne Newell and Ellen L. Sweet. 2008. Images of America: Ranchos of San Diego County. Arcadia Publishing: Charleston, SC.

City of Vista Community Development Department. 2009. City of Vista Community Development Guidebook. June 2009, updated December 2014. Accessed September 2022. https://www.cityofvista.com/Home/ShowDocument?id=88.

City of Vista. 2009. City of Vista Community Development Booklet. June 2009 with updates December 2014. Accessed September 2022. https://www.cityofvista.com/Home/ShowDocument?id=88.

City of Vista 2013. Historic Preservation Code. Chapter 15.12, Municipal Code. Vista, California.

City of Vista. NDa. "History of Vista." Accessed September 2022. https://www.cityofvista.com/residents/about-vista/history.

City of Vista. NDb. "RANCHO BUENA VISTA ADOBE." Accessed September 2022. https://www.cityofvista.com/residents/rancho-buena-vista-adobe.

City of Vista. NDc. "Visitors - Local Attractions." Accessed September 2022. https://www.cityofvista.com/visitors.

ET (Evening Tribune). 1930. “Editor Sees Great Future for Vista District; Cites Big Growth in Population.”

ICF. 2011. Vista General Plan 2030 Update: Program Environmental Impact Report (PEIR). Prepared for the City of Vista. May 2022.

Ludeke, John. 1980. The No Fence Law of 1874: Victory for San Joaquin Valley Farmers. University of California Press: Oakland CA. Accessed January 16, 2019. https://pybarra.weebly.com/uploads/6/8/7/0/687099/no_fence_law_1874_1980.pdf

Marben-Laird Associates. 1987. Historic Resource Survey: Vista California. April 27, 1987. Prepared for the City of Vista.

North County Daily Star. 2019. "Future of the Vista Historical Landmark Bank Building Revealed." January 23, 2019. Accessed September 2022. https://northcountydailystar.com/future-of-the-vista-historical-landmark-bank-building-revealed/.

Scaglione, Cecil. San Diego Union. 1980. “Figures Confirm North County’s Rapid Growth.” Page 58.

Smythe, William E. 1907. History of San Diego, 1542-1908 : An Account of the Rise and Progress of the Pioneer Settlement on the Pacific Coast of the United States. Volume I. The History Company: San Diego.

The Vista Press. 1963. “We are Now a City.” The Vista Press: Vista, CA. Accessed January 17, 2019. https://www.cityofvista.com/home/showdocument?id=6

Vista Historical Society and Museum at Rancho Minerva. ND. "Vista History." Accessed September 2022. https://vistahistoricalsociety.com/about/vista-history?showall=1.

Paleontological Resources

City of Vista, 2011. General Plan 2030. https://www.cityofvista.com/departments/community-development/permits-forms/vista-general-plan-2030

ICF International (ICF). 2011a. Vista General Plan 2030 Update, Draft Program Environmental Impact Report (PEIR). SCH: 2009121028. Dated May 2011. https://www.cityofvista.com/home/showpublisheddocument/15644/636692517733970000

ICF International (ICF). 2011b. Vista General Plan 2030 Update, Final Program Environmental Impact Report (PEIR). SCH: 2009121028. Dated December 2011. 635587301357070000 (cityofvista.com)

County of San Diego. 2009. Guidelines for Determining Significance: Paleontological Resources. San Diego, California: County of San Diego Land Use and Environment Group, Department of Planning and Land Use, Department of Public Works. Approved March 19, 2007, modified January 15, 2009.

County of San Diego General Plan Update- Final EIR. 2011. EIR Volume 1. County of San Diego Board of Supervisors. Update to General Plan August 3, 2011.

Deméré, T.A., 2007. Paleontological Resources, City of Vista, San Diego County, California. Prepared by the Department of Paleontology, San Diego Natural History Museum.

Deméré, T.A. and S.L. Walsh. 1993. Paleontological Resources, County of San Diego. Prepared for the San Diego Planning Commission.

Deméré, T.A., K.A. Randall, B.O. Riney, and S.A. Siren. 2013. "Discovery of remains of an extinct giant bison (Bison latifrons) in Upper Pleistocene (Rancholabrean) fluvial strata in the San Luis Rey River Valley, San Diego County, California, USA." In Alternative Rocks: The Geology and Natural Resources Above and Below the San Luis Rey River Valley, Northern Dan Diego County, California, edited by B. Olson. San Diego, California: San Diego Association of Geologists Field Trip Guide.

Kennedy, M.P., S.S. Tan, K.R. Bovard, R.M. Alvarez, M.J. Watson, and C.I. Gutierrez. 2007. Geologic map of the Oceanside 30x60-minute quadrangle, California, California Geological Survey, Regional Geologic Map No. 2, 1:100,000.

Murphey, P.C., G.E. Knauss, L.H. Fisk, T.A. Deméré, R.E. Reynolds. 2019. Best Practices in Mitigation Paleontology: Proceedings of the San Diego Society of Natural History, No. 47, May 1, 2019, p. 1-43.

San Diego Museum of Natural History (SDNHM). 2022. Paleontological Record Search – City of Vista General Plan Update. Unpublished records search results letter by K. Mueller from the San Diego Natural History Museum, San Diego, California. Dated September 19, 2022