



Envision 273 Comprehensive Multimodal Corridor Plan

Existing Conditions Technical Report

February, 2024

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Appendix Index (Documents are forthcoming)

- Appendix A: Traffic Data Sheets
- Appendix B: Intersection Operations Methodologies and Reports
- Appendix C: Comprehensive Collision Summary
- Appendix D: Bicycle Level of Traffic Stress (BLTS) and Bicycle Origin-Destination Connectivity Methodology
- Appendix E: Corridor Segment System Profiles
- Appendix F: Transit Route Performance Figures

Executive Summary

This Existing Conditions Technical Report for the *Envision 273: A Comprehensive Multimodal Corridor Plan* (Envision 273 Plan) provides a comprehensive summary of existing corridor conditions and outlines the planning framework for corridor evaluation based on goals related to mobility, safety, equity, and sustainability. To achieve the goals of the Envision 273 Plan, a performance-based assessment was conducted to identify the existing safety issues and multimodal infrastructure and operational deficiencies, with a specific emphasis on assessing the resulting burden on the region's disadvantaged communities (DACs).

The performance results presented in this report are intended to guide the next phase of the planning process – which involves evaluating alternatives for corridor circulation, infrastructure, mobility service, and operational improvements. As such, the performance assessment results presented in this report establish a baseline against which forthcoming corridor improvement recommendations may be measured, ensuring the resulting improvement recommendations provide a balanced, sustainable, and multimodal assessment corridor conditions. The performance measures are categorized within the following categories:

1. Operations & Reliability
2. Mobility & Connectivity
3. Safety
4. Social Equity
5. Sustainability

Performance Summary & Key Takeaways

The corridor study segments perform poorly when evaluated using the performance measures consistent with the plan goals described above. The following is a high-level summary of the results.

Operations & Reliability: Corridor conditions, although not considered to be congested, are unreliable for vehicular travel. At most of the study intersections along the corridor, Level of Service is at LOS C or above in both the AM and PM peak periods, indicating acceptable traffic operations based on the collected traffic data. These results will provide insight into the specific locations where corridor bottlenecks occur and what type of

operational improvements would provide more efficient travel, considering all travel modes.

Mobility & Connectivity: Although some segments have more prevalent multimodal infrastructure and amenities, such as Downtown Redding and its surrounding communities, State Route (SR) 273 remains a high-stress corridor for non-vehicular travel. The low stress (safer and more comfortable) travel routes are limited to pockets of low speed and low volume roadways adjacent to the corridor, often disconnected from major destinations by barriers like SR 273 and the railroad tracks. The overall lack of connectivity to destinations along the corridor highlights the need to prioritize low-stress travel options along and across SR 273.

Safety: Crash rates along the corridor exceed the statewide averages for similar roadway facilities for eight out of ten study segments. Fatal and severe injury collisions are concentrated between Downtown Redding and the City of Anderson, where the speed limits are higher, and the total roadway cross-section is wider, than other locations along the corridor. While most collisions occur in daylight hours, more fatal collisions occur during non-daylight hours (i.e., dusk, dawn, or dark conditions), including dark conditions with and without streetlights. Bicycle- and pedestrian-related collisions are distributed equally throughout the corridor; however, most of these collisions occur at locations where multimodal infrastructure is limited or non-existent. For example, most pedestrian-related collisions and all pedestrian fatalities occur at locations other than in crosswalks (e.g., “in road, including shoulder” and “crossing not in crosswalk”), at locations where pedestrians are not expected.

Social Equity: Each corridor study segment is either partially or fully within a DAC. Therefore, poor corridor performance creates a significant burden for the region's DACs.

Sustainability: The results of the corridor performance assessment will be used as a baseline to determine the potential impacts for air quality and greenhouse gas emissions that could result from improved corridor conditions. In addition, corridor improvement concepts, which are to be developed within the next stage of the planning process, should be evaluated considering the need to accommodate emergency evacuations during extreme weather or other emergency events.

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1 INTRODUCTION

The *Envision 273: A Comprehensive Multimodal Corridor Plan* (Envision 273 Plan, or Plan) is a collaborative, multi-year planning effort to develop recommendations for infrastructure improvements that support safety and mobility for people of all ages and abilities who use the State Route (SR) 273 corridor. The SR 273 corridor runs approximately 16.2-miles and connects the cities of Redding and Anderson and serves numerous outlying rural communities in Shasta County through feeder streets and roads. Despite significant changes in land use and population along the corridor over the decades, the transportation facility remains largely unchanged since it was renumbered from SR 99 following completion of Interstate (I-) 5.

Improvement recommendations for SR 273 will be developed in collaboration with the community to create a plan that works for residents, businesses, and visitors. The goal of this Plan will be to develop recommendations for infrastructure roadway improvements that support safety and mobility for all roadway users, beginning with an understanding of local context and challenges.

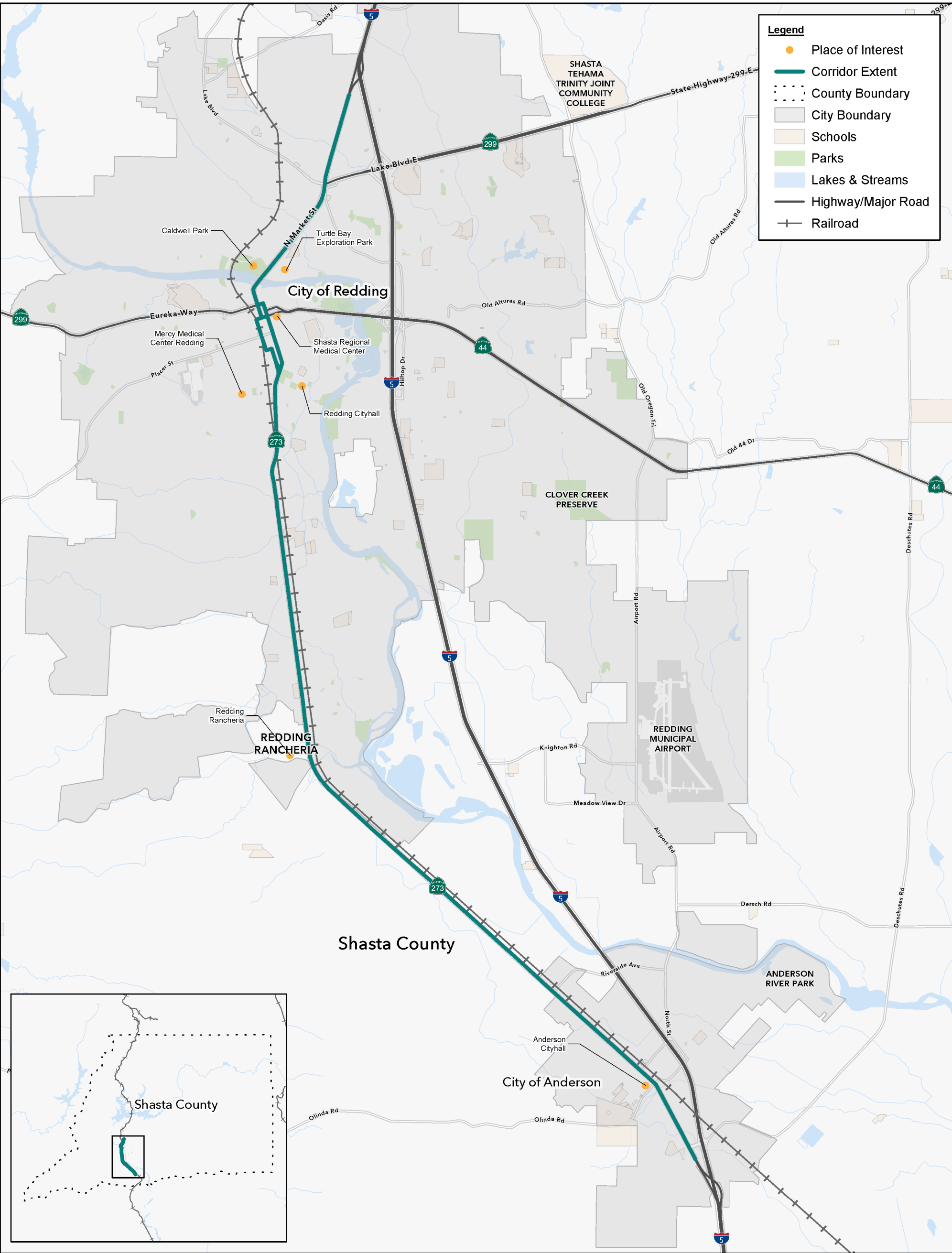
Improvement recommendations should aim to reflect the specific contexts of the communities and cities (the “places”) that border SR 273 while developing comprehensive, corridor-wide mobility networks that provide connections between places.

Draft goals of the Envision 273 Plan include:

- Develop a vision for SR 273 for the next 100 years,
- Reduce barriers to mobility,
- Enhance safety, accessibility, and connectivity for all users,
- Achieve better compatibility between land use and corridor design,
- Improve environmental sustainability and resiliency, and
- Position the region to successfully compete for federal and state grant funds.

Through community engagement and thoughtful site analysis, improvement recommendations can be reflective of the unique combination of expressed community desires, assessments of development types and density, and analysis of multimodal activity and mobility patterns, among others.

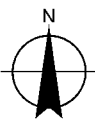
Note: These goals will be refined and revised through the community engagement process.



Envision 273: SR 273 Multimodal Corridor Plan

PROJECT VICINITY MAP

Paper Size ANSI B
0 2,000 4,000 6,000
US Feet
Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet



Project No. 12560002
Revision No. -
Date February 2024

FIGURE 1

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Print date: 23 Feb 2024 - 12:09
Data source: California State Parks, Esri, TomTom, Garmin, FAO, NOAA, USGS, Bureau of Land Management, EPA, NPS, USFWS, City of Redding GIS, California State Parks, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METANASA, USGS, Bureau of Land Management, EPA, NPS, USDA, USFWS. Created by: ppeel

Planning Context & Approach

In providing an overall framework and planning guidance for the preparation of this Envision 273 Plan, this chapter highlights the relevant transportation planning studies specific to the study area, as well as planning frameworks and design guidelines that will inform multimodal corridor analysis and improvement recommendations for this plan. The relevant planning studies and design guidelines are briefly summarized below.

Regional & Local Transportation Plans

SRTA GoShasta Regional Active Transportation Plan, 2018 (Updated 2019)

This plan was developed by Shasta Regional Transportation Agency (SRTA) to inform the development of active transportation programs and infrastructure for walking, bicycling, and connecting to transit in the Shasta Region. The plan framework includes three themes:

1. Increase active transportation modes.
2. Increase safety and comfort of active transportation users.
3. Invest in healthy, vibrant, sustainable, and people-centered communities.

The plan also prioritizes the development of a Regional Trunk Line System to provide high quality facilities for users of all ages and abilities to travel between communities and activity centers. The north-south trunk line between Anderson and Redding is shown to generally fall along the alignment of SR 273.

GoShasta Trunk Lines Map



Image Source: GoShasta Regional ATP, 2018

SRTA Regional Transportation Plan & Sustainable Communities Strategy (RTP/SCS) for the Shasta Region, 2018 (2022, Pending Adoption)

The regional transportation plan (RTP) is a 20-year investment plan outlining how the region (e.g. cities, counties, Caltrans, and SRTA) intends to provide a transportation system that efficiently moves people and freight (goods) for all transportation modes. The RTP includes short- and long-term goals and strategies to help guide the process.

As part of the RTP, SRTA must develop a Sustainable Communities Strategy (SCS) - which is required under California Senate Bill 375, the Sustainable Communities and Climate Protection Act of 2008 (SB 375) - that addresses how the RTP will meet the region's greenhouse gas (GHG) emissions reduction targets.

City of Redding Active Transportation Plan, 2018

The current 2018 City of Redding Active Transportation Plan aims to promote greater connectivity within and to/from the City of Redding and was developed by the City of Redding in conjunction with the *GoShasta Regional Active Transportation Plan* (SRTA, 2018). The vision of the plan is:

The City of Redding is a community where people of all ages and abilities can walk and bike conveniently, safely, and enjoyably, incorporating walking and bicycling into their daily lives. The City of Redding is also a destination for visitors seeking to enjoy our outdoor amenities on foot or by bike.

The goals of the plan are listed below:

1. Develop a highly connected and comfortable active transportation network.
2. Increase the number of walking and bicycling trips.
3. Increase safety and mobility for pedestrians and bicyclists.
4. Promote an active transportation culture that benefits the community.

City of Anderson General Plan 2000-2027

The current 2000-2027 City of Anderson General Plan identifies SR 273 as an expressway, defined by the plan as: a divided multi-lane major arterial street for through traffic with partial control of access and with grade separations at major intersections. The right-of-way requirements for an expressway are identified as between 110 and 120 feet. The plan also identifies SR 273 as a primary source of noise pollution for Anderson, in addition to I-5.

DRAFT City of Redding General Plan 2023-2045

The Draft 2023-2045 City of Redding General Plan has been released for public review. The following highlights of the Draft General Plan are relevant to the study corridor:

- The plan states the following regarding bicycle provisions for principal arterials through Redding: Separated bikeway (Class IV) where feasible, otherwise buffered bike lanes (page 11).
- The plan identifies SR 273 as a critical link for fire, flood, earthquake, and other emergency evacuation routes.
- The plan states the following related to the study corridor, specifically those portions of SR 273 referred to as North and South Market Street through Redding.

North Market Street: The North Market Street focus area includes SR 273 between Quartz Hill Road and Benton Drive. The following recommendations are provided within the plan:

- North Market Street provides access to scenic and recreational attributes and should be improved to have the aspect of a parkway with median landscape, sidewalks, and some bulb-out landscape features.
- Recommendation for a pedestrian trail along Sulphur Creek upstream of Market Street and pedestrian crossing of North Market Street.
- Allow development of new and expansion of existing automobile-oriented uses only on the west side of North Market Street.

South Market Street: South Market Street is generally the area north of the railroad overpass and south of Downtown Redding. The following recommendations are provided within the plan:

- "South Market Street is characterized by the railroad and the industrial development along the corridor. The underutilized and vacant industrial parcels abutting the single-family neighborhood provide an opportunity for redevelopment potential for residential and accompanying services" (pages 56-57).
- Recommendation for a protected or buffered bike lane along SR 273 for commuting and to connect to Downtown Redding. Incorporate lighting, street crossings, and other traffic calming features.
- Recommendation to improve aesthetics of the roadway with median landscape, sidewalks, and some bulb-out landscape features.
- Acknowledges the challenges to provide these features given the number of smaller parcels, access driveways, intersecting streets, among others.

Planning Framework Guidelines

The relevant planning framework and design guidelines referenced in this report apply to multimodal corridor plans that aim to address safety issues and active transportation infrastructure deficiencies while improving corridor performance for all travel modes, including walking, biking, private vehicle, freight/truck, transit, and rail, with specific emphasis and prioritization on improving conditions for disadvantaged communities (DACs).

Caltrans Corridor Planning Process Guide, 2020

This guide establishes a comprehensive planning approach through desired protocols and procedures to identify and implement multimodal transportation needs. A key component of this guide is the emphasis on conducting a baseline performance assessment of the corridor to highlight the relationship between identified issues and their causes. Improvement strategies are also evaluated to determine the potential benefits to the corridor, in terms of corridor performance.

Caltrans Smart Mobility 2010: A Call to Action for the New Decade, 2010

This plan provides a performance-based analysis performed to develop and evaluate alternative corridor improvement concepts. The Smart Mobility Framework is premised on six key objectives: Location Efficiency; Reliable Mobility; Health and Safety; Environmental Stewardship; Social Equity; and Robust Economy. These six objectives are informed through the application of seventeen candidate performance measures.

The fundamental premise of the Smart Mobility Framework is to ensure that planning or programming decisions for transportation improvements are performance based, transparent, and address sustainable outcomes and objectives. The performance metrics selected for the Envision 273 Plan are consistent with

Smart Mobility Framework objectives to ensure that the resulting improvement recommendations provide a balanced, sustainable, and multimodal assessment of current and forecast corridor conditions.

Multimodal Design Guidelines

The *Caltrans Corridor Planning Process Guide* includes the following objective: Preserve the character of local communities, create opportunities for neighborhood enhancement, and improve multimodal accessibility including complete streets. Caltrans requires that planning projects include “complete street” features that provide safe and accessible options for people of all ages and abilities, and for all modes (including walking, biking, rolling, and taking transit). Examples of Complete Street design elements include:

- Continuous and connected sidewalks and bike lanes
- Comfortable and convenient transit facilities
- Frequent and safe pedestrian crossings
- Accessibility improvements, per the Americans with Disabilities Act (ADA)

Additional Complete Street design elements that aim to vehicular speeds, reducing pedestrian crossing distances across roadways, and provide wider sidewalks and public spaces along the roadway include:

- Curb extensions (or bulb-outs)
- Median island with pedestrian refuge
- Reduced travel lanes (“Road Diet”)

Complete Streets Design Guidelines:

- Caltrans Complete Streets Elements Toolbox & Complete Streets Project Planning Guide
- Federal Highway Administration (FHWA) Separated Bike Lane Planning and Design Guide
- National Association of City Transportation Officials (NACTO) Urban Street Design Guide, Transit Street Design Guide, Urban Bikeway Design Guide, and Urban Street Stormwater Guide.
- Caltrans Design Information Bulletin (DIB) 89 Class IV (Separated Bike Lane) Bikeway Guidance, 2022
- *DRAFT* Caltrans DIB 94 Complete Streets: Contextual Design Guidance, 2023

Support Programs

- **Healthy Shasta:** The goal of Healthy Shasta is to increase walking and bicycling among students and adults by working with partners. Examples of efforts include providing printed and online walking and bicycle maps, expanding, and linking people to walking groups, encouraging employees to walk and bike, and teaching bicycle safety skills.
- **Safe Routes to School (SRTS):** SRTS is run by the Shasta County Health and Human Services Agency to serve multiple school districts in improving safety and encouraging more students to walk and bike to school.
- **Shasta Living Streets:** A local nonprofit organization that provides services (such as bike valet) and events (such as Family Bicycling Day) to advance the development of better bikeways and trails, walkable cities, and vibrant public places in Shasta County.

- **The City of Redding Active Transportation Advisory Group:** The group is composed of bicycle advocates, pedestrian advocates, funding partners, schools, businesses, social service agencies, and other members of the public.
- **Other groups include** the Shasta Wheelman and Shasta Bike Month and Challenge.

Corridor Planning Approach

The following summarizes the overall approach to the development of the Envision 273 Plan, which includes the following main categories:

1. **Understand the Corridor as a System**
2. **Understand the Corridor Segments as “Places”**

Understand the Corridor as a System

The corridor connects the Cities of Redding and Anderson and serves numerous outlying rural communities through feeder streets and roads. As a system, the corridor moves people and goods to destinations located on and off the corridor. The corridor system infrastructure includes the roadway, transit, and bicycle and pedestrian facilities. Understanding the corridor as a system requires evaluation of corridor multimodal travel safety, efficiency, connectivity, and reliability to identify areas where operations and access can be improved.

Since SR 273 is a Caltrans facility, the *Caltrans Corridor Planning Process Guide* (February 2020) will guide the corridor planning process. As such, a primary goal for this Plan is to identify the issues and opportunities for optimizing system operations and supporting a safe and reliable system. Based on the identification of these issues and opportunities, improvement recommendations will be developed to address quality of life, access to destinations, environmental factors including GHGs, and transportation system performance. Corridor goals, objectives, and performance measures will guide the analysis of current corridor operations related to mobility, reliability, safety, and sustainability.

Understand the Corridor Segments as “Places”

In addition to understanding the existing and planned transportation systems within the study area, improvement recommendations should also aim to reflect the specific contexts of the communities (the “places”) that border the corridor while developing comprehensive, corridor-wide mobility networks that provide connections between these places. The *Caltrans Corridor Planning Process Guide* states that corridor planning is “a multimodal transportation planning approach that recognizes that transportation needs are based on the complex geographic, demographic, economic, and social characteristics of communities”. Over its 16.2-mile extent, the corridor serves a variety of functions depending on the adjacent land uses it serves and the purposes of travel along its segments. Therefore, a “place-based” planning approach will serve as a guideline for segment-specific recommendations for the corridor.

Caltrans has developed place-based planning and design guidance for transportation improvements on state highways, documented in *Smart Mobility 2010: A Call to Action for the New Decade* (February 2010) and the DIB-94 (January 2024). Place type assessments for corridor planning highlight the variations in community goals, land use, and destinations that determine the appropriate application of design standards for specific street segments, such as the type and width of multimodal facilities (i.e., crosswalks, sidewalks, bicycle lanes, shared use paths, landscape, transit lanes/stops, and vehicle lanes, etc.). Place type assessments do not negate the need to prioritize safe and accessible bicycle and pedestrian travel along the corridor between places, and transitional corridors can play an important role in providing connections to critical destinations.

Equity Approach

The Envision 273 Plan approach to understanding corridor performance from an equity perspective includes the following steps:

1. Describing the social equity context,
2. Community engagement and understanding community values, and
3. Identification of project-specific social equity performance measures and evaluation of potential impacts.

The social equity context is based on the classifications of census areas as disadvantaged. Community engagement will supplement the social equity context and will help to develop priorities for project implementation towards the end of the planning process. Finally, performance measures will be developed to establish an equity baseline and to evaluate how improvement project recommendations perform from an equity approach.

Social Equity Context

Existing data sets and standardized indicators can provide a basis for initial social equity screening. Applying US Federal definitions for disadvantaged, historically overburdened, and environmental justice communities, geographic locations may be screened for relevant vulnerability and susceptibility factors including income, race and ethnicity, age, environmental exposures, current and historical economic marginalization, climate vulnerability, historical pollution, and federally defined environmental justice indices. These factors, as outlined in US Executive Orders 13898, 14008, 13895, and 14096, are represented through US Census data, including American Community Survey (ACS) data, the Center for Disease Control/Agency for Toxic Substances and Disease Registry Environmental Justice Index Indicators Social, Environmental and Health Burden Modules, and public tools, such as the Justice40 Climate and Economic Justice Screening Tool and the US EPA's Environmental Justice Screening and Mapping Tool. These tools provide a compendium of potential indicators for areas of environmental, social, and health-related areas of concern and potential inequity. Additional indicators are selected in accordance with the type of infrastructure and the activities being conducted and services being provided. Relevant draft indicators are selected, analyzed for statistical relevance, and geospatially depicted to provide a visualization of geographic clustering of potentially vulnerable communities to support an understanding of underserved, underrepresented, and overburdened populations in specific geographies.

For the purposes of this Envision 273 Plan, DACs will be determined using the criterion presented in the DAC analysis within the SRTA RTP, as well as the U.S. Department of Transportation RAISE Areas of Persistent Poverty. The Envision 273 Plan equity methodology (i.e., the identification of DACs and supplemental DAC status information) is provided in Chapter 2: Corridor Context.

Community Values

Forthcoming: Through the next phases of the planning process, GHD will provide additional information related to the needs assessment based on input from stakeholder engagement and public input.

Equity Assessment

The purpose of the equity assessment is to determine how the corridor and its sub-segments are performing from an equity and safety standpoint. This process will help to identify the specific transportation needs along the corridor and will inform improvement project recommendations. The Envision 273 Plan equity assessment results are provided in Chapter 6: Corridor Performance.

2 CORRIDOR CONTEXT

State Route (SR) 273 is a 16.2-mile corridor that extends through and connects the Shasta Region's two largest incorporated cities (Redding and Anderson), as well as numerous smaller outlying communities to the county seat of Redding. The corridor runs north-south parallel and to the west of Interstate 5 (I-5) for most of its extent.

SR 273 is a divided highway with periodic frontage roads through most of its extent, and transitions to one-way couplets through Downtown Redding. The one-way couplets include California Street in the southbound direction and Pine Street in the northbound direction. The project area presents a number of challenges, constraints, and opportunities, including a crossing of the Sacramento River, the largest river in California; Clear Creek (a major tributary); and a number of smaller waterways. It also includes interchanges with SRs 299 and 44, as well as a space-constrained undercrossing of the Union Pacific mainline, which also flanks SR 273 for roughly 3.5 miles in the project area.

As a part of the state highway system, the corridor is maintained and operated by Caltrans and is a terminal access STAA truck route. Existing traffic volumes reach upwards of 20,000 daily vehicle trips.

The corridor's proximity to residential neighborhoods, employment centers, and notable civic/regional destinations means that it services all mobility modes including private vehicles, commercial/freight, transit, and active transportation. Some notable destinations include Caldwell Park, Turtle Bay, Shasta Regional Medical Center, Mercy Medical Center, Redding City Hall, Redding Rancheria, and Anderson City Hall.

Corridor Study Area

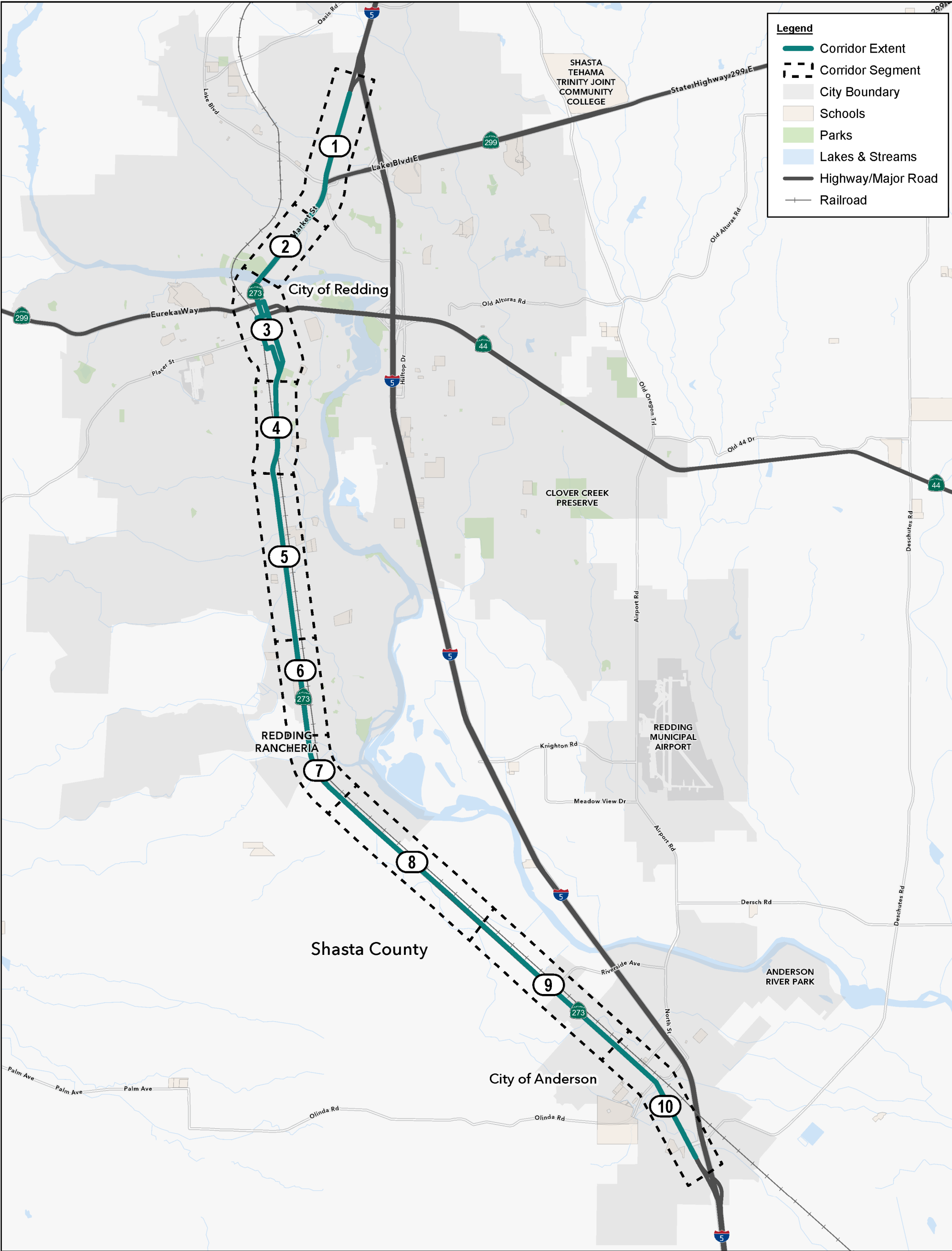
The SR 273 roadway cross-section varies in paved roadway width, number of lanes per direction, posted vehicle speed, and fronting land use types. The corridor adjoins a mix of developed, undeveloped, and underdeveloped properties. The Plan has identified ten (10) distinct segments along the corridor to emphasize the changing characteristics of the roadway as well as the adjacent land uses.

The segments extents are generally situated between major intersections on SR 273, suggesting potential for variations in mobility patterns as people access the highway from side streets. The existing multimodal infrastructure, mobility trends, and surrounding land uses of the ten segments are described in greater detail in later sections of the Plan. The corridor segments along SR 273 include the following:

1. I-5 Ramps to south of Lake Blvd
2. South of Lake Blvd to Sacramento River
3. Sacramento River to south of Cypress Ave
 - a. Southbound Couplet on California Street
 - b. Northbound Couplet on Pine Street
4. South of Cypress Ave to north of Buenaventura Blvd
5. North of Buenaventura Blvd to south of S Bonnyview Rd
6. South of S Bonnyview Rd to south of Girvan Rd
7. South of Girvan Rd to north of Happy Valley Rd
8. North of Happy Valley Rd to south of Latona Rd
9. South of Latona Rd to north of Briggs St
10. North of Briggs St to I-5 Ramps

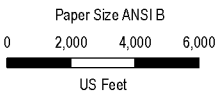
Table 1 *Corridor Study Segments*

Area	Segment	Approximate Extent	Length (miles)
North of the River	1	I-5 Ramps to south of Lake Blvd	1.8
	2	South of Lake Blvd to Sacramento River	1
Downtown Redding	3	Sacramento River to south of Cypress Ave: <i>Southbound Couplet on California Street & Northbound Couplet on Pine Street</i>	1.4 (2.5 centerline miles, including couplets)
South of Downtown	4	South of Cypress Ave to north of Buenaventura Blvd	1.2
South Redding	5	North of Buenaventura Blvd to south of S Bonnyview Rd	2
	6	South of S Bonnyview Rd to south of Girvan Rd	1.2
Redding Rancheria	7	South of Girvan Rd to north of Happy Valley Rd	0.9
County Stretch	8	North of Happy Valley Rd to south of Latona Rd	2.3
	9	South of Latona Rd to north of Briggs St	2.2
Anderson Community	10	North of Briggs St to I-5 Ramps	2.2

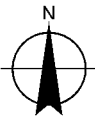


Envision 273: SR 273 Multimodal Corridor Plan

CORRIDOR STUDY SEGMENT LOCATIONS



Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet



Project No. 12560002
Revision No. -
Date February 2024

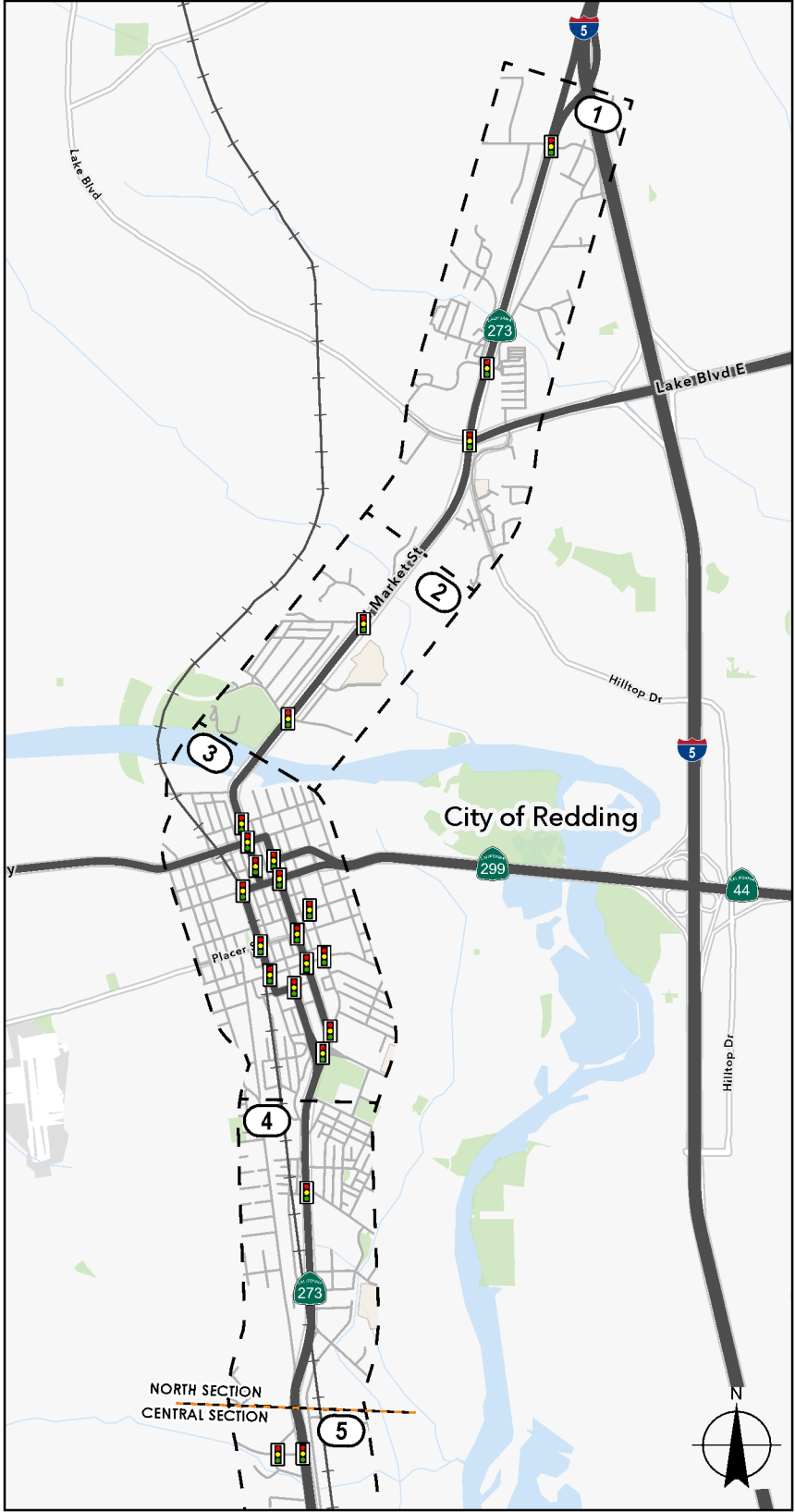
FIGURE 2

Corridor Key Intersections

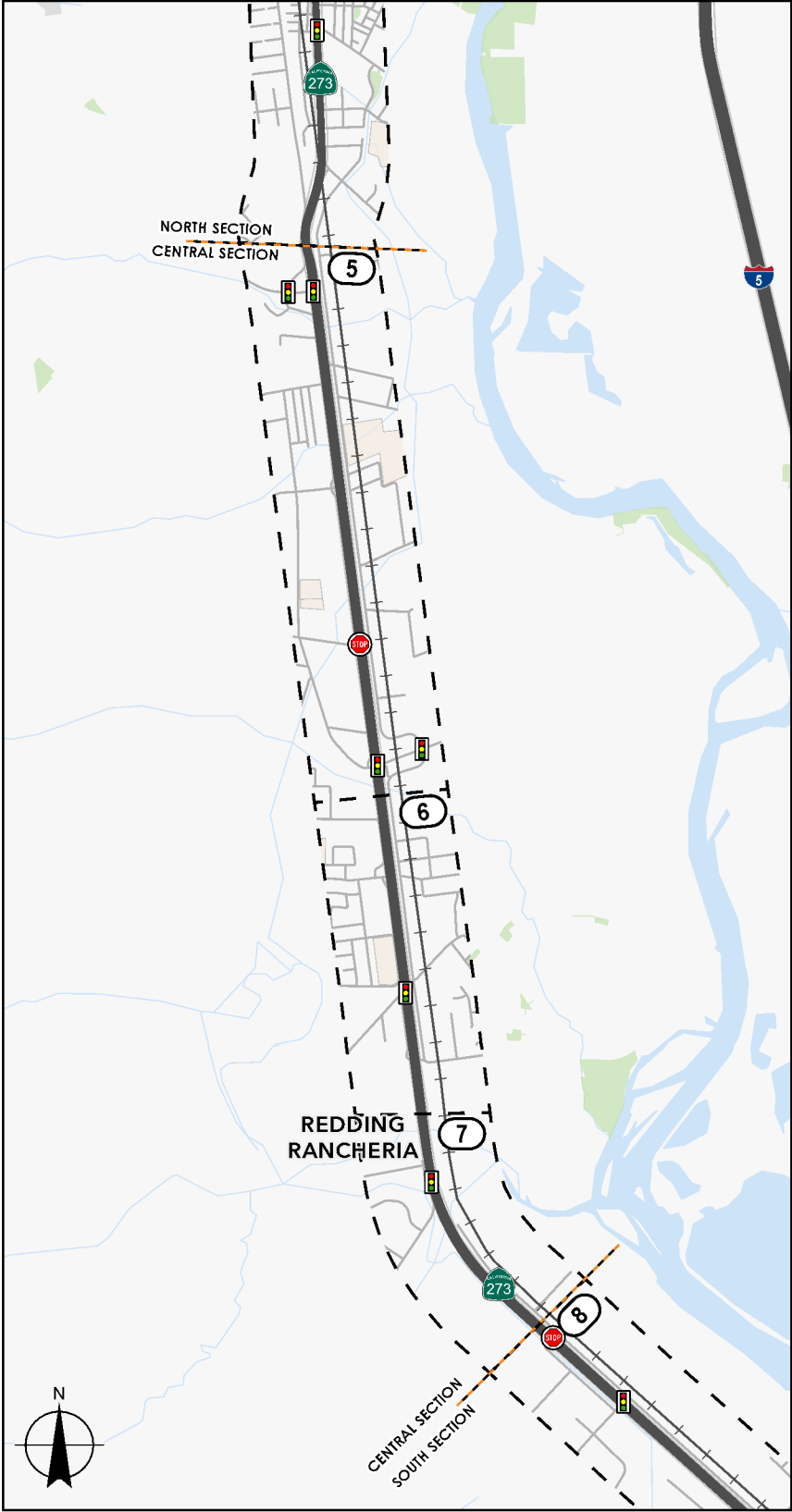
The table below lists major intersections along the corridor, which are also shown in Figure 3.

#	Location
1	SR 273 / N. Market Street / Caterpillar Road
2	SR 273 / N. Market Street / Northpoint Drive / Twin View Boulevard
3	SR 273 / N. Market Street / Lake Boulevard
4	SR 273 / N. Market Street / Benton Drive
5	SR 273 / S. Market Street / Quartz Hill Road / Traveled Way
6	SR 273 / S. Market Street / Trinity Street
7	SR 273 / S. Market Street / SR 299 / Eureka Way
8	SR 273 / S. Market Street / Shasta Street
9	SR 273 NB / Pine Street / SR 44 WB / Shasta Street
10	SR 273 SB / California Street / Tehama Street
11	SR 273 NB / Pine Street / SR 44 EB / Tehama Street
12	SR 273 SB / California Street / Placer Street
13	SR 273 NB / Pine Street / Placer Street
14	SR 273 SB / California Street / South Street
15	SR 273 NB / Pine Street / South Street
16	SR 273 SB / S. Market Street / Gold Street
17	SR 273 NB / Pine Street / East Street
18	SR 273 / S. Market Street / Cypress Avenue
19	SR 273 / S. Market Street / Grange Street
20	SR 273 / S. Market Street / Buenaventura Boulevard
21	SR 273 / S. Market Street / Branstetter Lane
22	SR 273 / S. Market Street / Cedars Road / S. Bonnyview Road
23	SR 273 / S. Market Street / Clear Creek Road
24	SR 273 / S. Market Street / Canyon Road / Redding Rancheria Road
25	SR 273 / S. Market Street / Whitehouse Drive (North) / Eastside Road
26	SR 273 / S. Market Street / Whitehouse Drive (South)
27	SR 273 / Amen Street / Latona Road
28	SR 273 / Ox Yoke Road
29	SR 273 / North Street
30	SR 273 / South Street
31	SR 273 / Deschutes Road
32	SR 273 / Pleasant Hills Drive

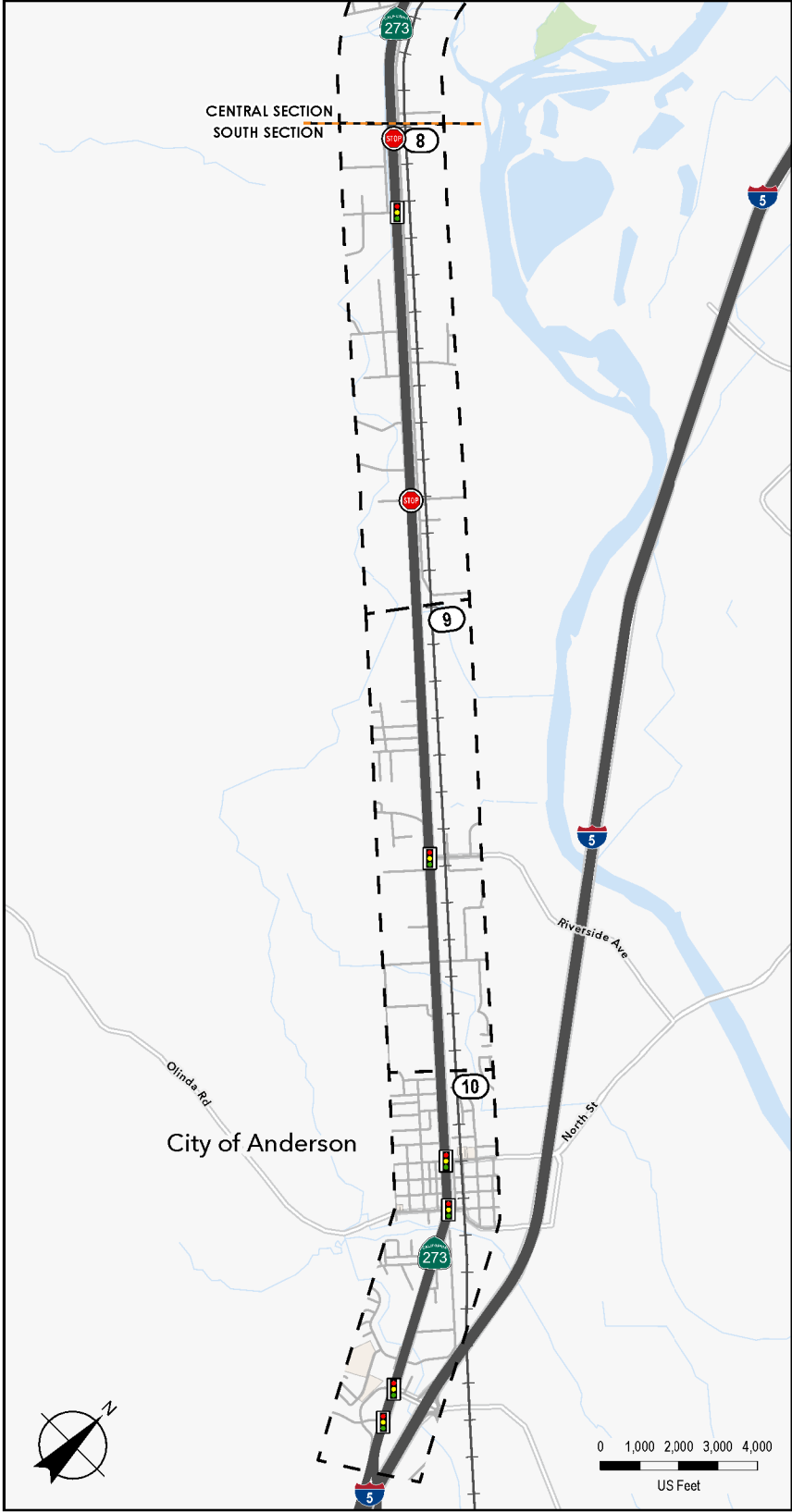
NORTH SECTION



CENTRAL SECTION



SOUTH SECTION

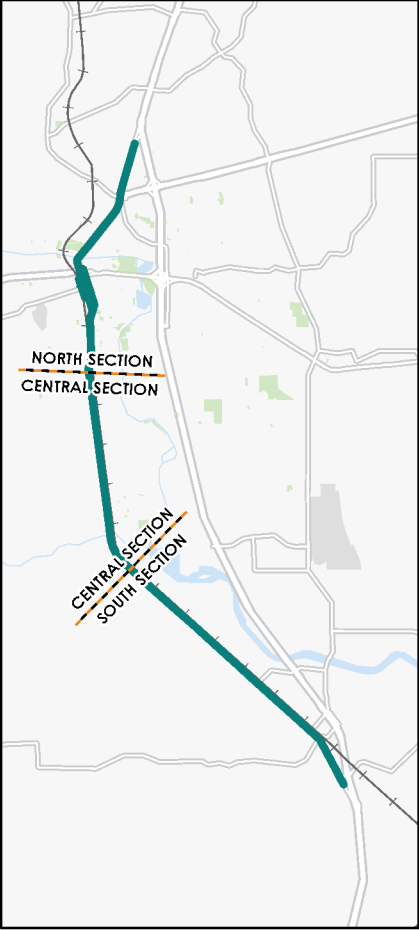


Legend

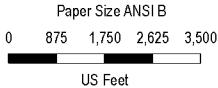
Study Intersections

- Control
- Signalized Stop Control
- Two-Way Stop Control
- Highway/Major Road
- Other Roads
- Railroad
- Corridor Segment
- Schools
- Parks
- Lakes & Streams

LOCATOR MAP



Envision 273: SR 273 Multimodal Corridor Plan
INTERSECTION TRAFFIC CONTROLS



Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

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Project No. 12560002
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Date February 2024

FIGURE 3

Data source: City of Redding GIS, California State Parks, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc., METINASA, USGS, Bureau of Land Management, EPA, NPS, USDA, USFWS, California State Parks, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc., METINASA, USGS, Bureau of Land Management, EPA, NPS, USDA, USFWS, City of Redding GIS, California State Parks, Esri, TomTom, Garmin, SafeGraph, METINASA, USGS, Bureau of Land Management, EPA, NPS, USDA, USFWS. Created by: pheel

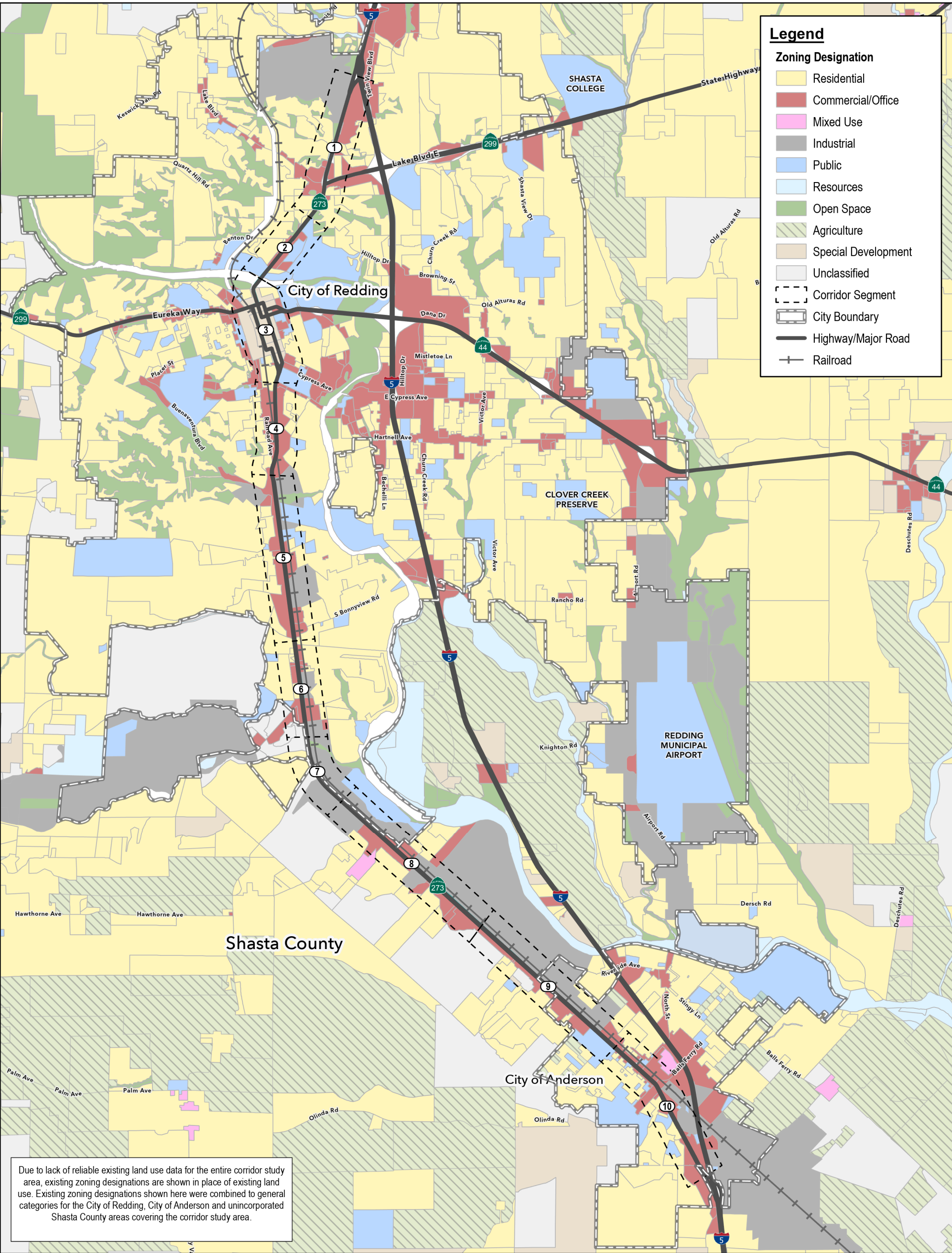
Land Use & Place Types

The corridor connects the cities of Redding and Anderson and serves numerous outlying rural communities in Shasta County. The corridor is bordered by commercial and industrial land uses, either directly fronting the roadway or accessed via frontage roads. Generally, the commercial and industrial land uses are concentrated within one-tenth of a mile from the corridor centerline.

Residential communities are distributed on either side of the corridor, with higher density populations within the cities of Anderson and Redding. Downtown Redding is considered a special development area and includes primarily mixed use commercial and office buildings.

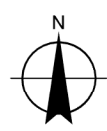
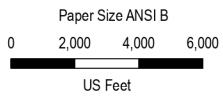
The City of Redding's open space land is concentrated near the along the Sacramento River, Clear Creek, and west of the corridor through the communities of Gore Ranch, Branstetter, Powerline, and Benton. Parks and recreational lands are concentrated along the Sacramento River. Agricultural land is concentrated in the county and is not immediately adjacent to segments along the corridor.

Figure 4 shows the existing zoning destinations and Figure 5 shows the future land use designations within the corridor study area, including portions of the City of Anderson, City of Redding, and unincorporated Shasta County. (Note: Due to the lack of reliable existing land use data for the entire corridor study area, existing zoning designations are shown in place of existing land use. Existing zoning designations were combined to general categories for the area's jurisdictions.)



Envision 273: SR 273 Multimodal Corridor Plan

EXISTING ZONING DESIGNATIONS

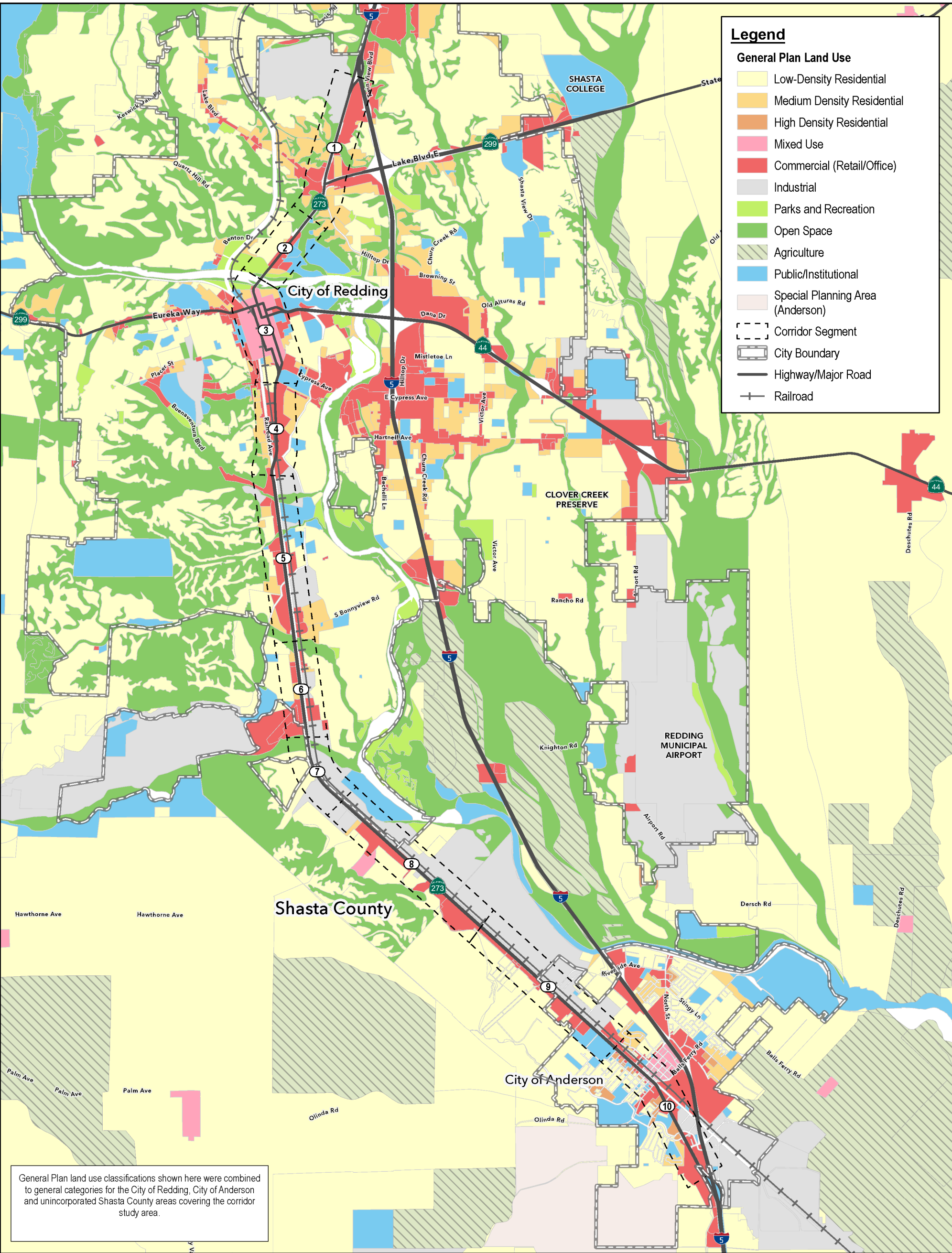


Map Projection: Lambert Conformal Conic
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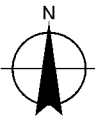
FIGURE 4



Envision 273: SR 273 Multimodal Corridor Plan

GENERAL PLAN LAND USE

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Map Projection: Lambert Conformal Conic
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Project No. 12560002
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FIGURE 5

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12560002_005_GeneralPlanLandUse
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Data source: Human Geography Label - CGerds; City of Redding GIS; California State Parks; Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc; METI/NASA; USGS; Bureau of Land Management; EPA; NPS; USDA; General Plan Land Use; City of Redding; Shasta County; City of Anderson; Highways: TIGER; City boundaries: Shasta County. Created by: ppeel

Place Type Designations

As described in Chapter 1: Introduction, the Envision 273 Plan should also aim to reflect the specific contexts of the communities (the “places”) that border the corridor while developing comprehensive, corridor-wide mobility networks that provide connections between these places. Place type categories applied within this plan are based on those provided in the *Caltrans Smart Mobility 2010: A Call to Action for the New Decade* (February 2010) and the Caltrans DIB-94 (January 2024) Place types are distinguished based on a variety of factors including land use and transportation activities occurring within a given area. Subcategories are provided to address variations in place type categories. The categories and subcategories provided within each place type categories differ slightly between the two Caltrans planning documents.

To apply a place-based approach to the Envision 273 Plan, the categories were refined to represent the specific variations in land use and transportation activities that occur along the study corridor. As a result, the following categories, and subcategories applicable to the study corridor include:

- Urban Areas
 - Urban Center
 - Urban Community
- Suburban Areas
 - Suburban Neighborhood
 - Suburban Community
 - Suburban Corridor
- Rural Areas
 - Rural Community
 - Undeveloped Corridor (Rural)
- Transitional Area
 - Transitional Corridor

Each of these categories and/or subcategories are consistent with those provided in the two Caltrans documents mentioned above, except for the subcategory of “Rural Community.” This subcategory was added to represent those areas along the corridor in rural areas between Anderson and Redding that do not meet the classification of Rural Main Street or Rural Town, but also do not meet the classification for less developed areas, such as transitional or undeveloped corridors. Recognizing that these areas are considered communities within the local context, the “Rural Community” category therefore represents a version of the Rural Main Street classification with less-intensive community design elements.

The Envision 273 Plan place type categories and their corresponding subcategories and descriptions, per the *Caltrans Smart Mobility 2010: A Call to Action for the New Decade* and the Caltrans DIB-94 documents, are provided in Table 2. The SR 273 study corridor place types are presented in Table 3. These place types are not anticipated to significantly change in the future.

Table 2 Place Type Categories & Definitions

ENVISION 273 PLAN Category	SMART MOBILITY FRAMEWORK			DIB-94		
	Category/Subcategory		Description	Category/Subcategory		Description
URBAN AREA	Urban Centers		High density, mixed use places with high jobs-housing ratios overall, well-connected street networks, high levels of transit service and pedestrian supportive environments. Transit-oriented development (TOD) fits into all of the urban place types.	Urban Area		Major population centers in the State. Growth is expected to continue. Biking, transit, walking, and rolling are important modes of transportation. High density locations with a full range of land uses.
		Urban Cores	Central cities and large downtowns with full range of horizontally- and vertically-mixed land uses and with high capacity transit stations/corridors present or planned. Urban cores are hubs of transit systems with excellent transit coverage, service levels, and intermodal passenger transfer opportunities including convenient airport access.		Center city	Downtowns of our largest metro areas. High-density, dense street network, mixed-use development, high bike, ped, and transit mode share, lower vehicle speeds, Main Streets.
		Urban Centers	Major activity centers with full range of horizontally- and vertically-mixed land uses and with high capacity transit stations/corridors present or planned.		Urban Community	Adjacent to or near Center Cities. Design supports walking, biking, and transit sure. Low to mid-rise buildings, buildings close to the street, moderately dense development, walkable block pattern, parking options, narrow lanes, on-street parking, Main Streets.
URBAN AREA / SUBURBAN AREA	Close-In Compact Communities		Located near Urban Core or Urban Centers, close-in compact communities are comprised primarily of housing but with scattered mixed use centers and arterial corridors forming the skeleton of the transportation system. Housing is varied in density and type. Transit is available to connect neighborhoods to multiple destinations, with an emphasis on serving commute trips. Residents may think of these communities as suburban, but the Smart Mobility Framework differentiates them from suburban communities because of the greater presence of location efficiency factors. This place type includes:			
		Close-in Centers	Small and medium sized downtowns, Transit Oriented Developments, institutions, lifestyle centers, and other centers of activity.			
		Close-in Corridors	Arterial streets with a variety of fronting development types, with frequent transit service and transfer opportunities.			
		Close-in Neighborhoods	Walkable neighborhoods with housing in close proximity to shops, services, and public facilities, as well as good multi-modal connections to urban centers. Housing density varies from medium to high. Fine-grained circulation network of streets with high comfort for pedestrians and bicyclists.			
	Compact Communities		Historic cities and towns as well as newer places characterized by strong presence of community design elements. While most compact communities are outside of metropolitan regions, some are on the periphery of metropolitan regions.			
SUBURBAN AREA	Suburban Communities		Communities characterized by a low level of integration of housing with jobs, retail, and services, poorly connected street networks, low levels of transit service, large amounts of surface parking, and inadequate walkability	Suburban Area		Dispersed, low-density pattern of development with both residential and commercial zones. Extensive single-family neighborhoods, pockets of multi-family housing, parks, and schools, and strategically located single-story commercial centers. Large arterial roadways with wide lanes, shoulders and turn pockets, synchronized signal timing, and wide intersections. Could include suburban "Main Streets" with higher density.
		Centers	Mid-size and small downtowns, lifestyle centers, or other activity centers embedded within suburban communities.			
		Corridors	Arterial streets with a variety of fronting development types, frequently characterized by inadequate walk and bike environments, low land use efficiency and poor aesthetics.			
		Dedicated Use Areas	Large tracts of land used for commercial purposes such as business or industrial park or warehousing, or for recreational purposes such as golf courses.			
		Neighborhoods	Residential subdivisions and complexes including housing, public facilities, and local-serving commercial uses, typically separated by arterial corridors.			

ENVISION 273 PLAN Category	SMART MOBILITY FRAMEWORK			DIB-94		
	Category/Subcategory		Description	Category/Subcategory		Description
RURAL AREA	Rural and Agricultural Lands		Settlement pattern with widely spaced towns separated by farms, vineyards, orchards, or grazing lands. The rural and agricultural place type may include tourist and recreation destinations which can significantly affect land uses, character, and mobility needs. Rural and agricultural lands include:	Rural Area		Low-density area outside the built-up urban and suburban communities and can include agricultural areas, natural areas, and the small towns that support the inhabitants of these regions. SOV use is high, but zero- or low-vehicle ownership households may exist here as well.
		Rural Towns	Rural towns provide a mix of housing, services and public institutions in compact form that serve surrounding rural areas. They vary in size from crossroads with single clusters of commercial uses to towns offering a full range of retail and service businesses. Towns may also be the focus of tourist and recreational activity or gateways to recreation areas in protected lands.		Rural Main Street	The highway is typically the only main street or one of several within the town. Part of a small commercial grit around the main arterial or highway and have lower speeds. In some cases, frontage roads separate regional and local traffic.
		Rural Settlements and Agricultural Lands				
TRANSITIONAL AREA					Transitional Corridor	Clusters with industrial and commercial uses, as well as residential areas as they lead from an undeveloped rural area into a rural city or town center.
				Undeveloped Corridor	Low building density and large tracts of agricultural or other undeveloped or natural land.	
NOT APPLICABLE	Protected Lands		Scattered dwelling units and supporting commercial uses and public facilities, no significant subdivisions and limited non-agricultural industrial or commercial land use, and lands in agricultural or grazing use.	n/a		
	Special Use Areas		Lands protected from development by virtue of ownership, long-term regulation, or resource constraints.			

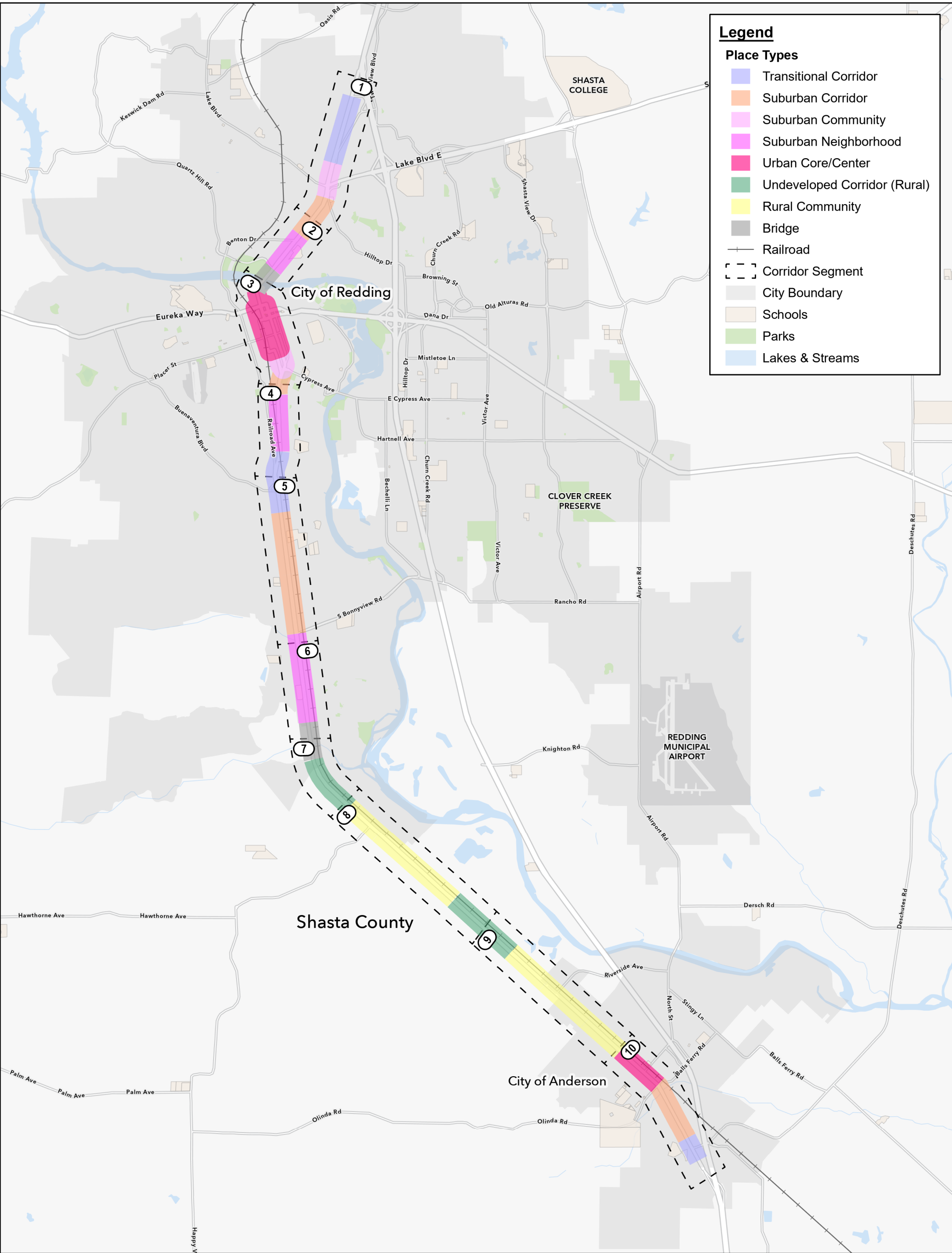
Source: Caltrans Smart Mobility Framework 2010: A Call to Action for the New Decade

Source: Caltrans DIB-94

Table 3 SRE 273 Corridor Place Types

Place Type ID	Extent 1	Extent 2	Primary Frontage - West	Primary Frontage - East	Place Type Category (Specific to Envision 273)	Smart Mobility Framework Place Type Designation	DIB-94 Place Type Designation	Activity Type
1	Caterpillar Rd	Twin View Blvd	Industrial & Residential	Commercial	Transitional Corridor	Suburban Community: Dedicated Use Area	Transitional Corridor (Industrial Use)	Minimal place-based activities, many barriers to pedestrian and bicycle mobility
2	Twin View Blvd	w/o Lake Blvd	Multi-family/Commercial	Multi-family/Commercial	Suburban Community	Suburban Community: Corridor	Suburban Area	Core commercial area, proximity to regional amenities
3	s/o Lake Blvd	Sulphur Creek Rd	Undeveloped residential (Single family & Multi-family)	Public/Undeveloped Multi-family	Suburban Corridor	Suburban Community: Corridor	Transitional Corridor (Residential Connection)	Corridor connecting residential communities
4	Sulphur Creek Rd	Quartz Hill Rd	Commercial, with access to public and developed Single family	Commercial, with access to public	Suburban Neighborhood	Suburban Community: Neighborhood	Suburban Area	Defining area: Potential for place-based activities, frontage opportunities, proximity to regional amenities
-	Quartz Hill Road	Riverside Dr	-	-	Transitional Corridor (Bridge)	Transitional Corridor (Bridge)	Transitional Corridor (Bridge)	-
5	Riverside Dr	Gold Street	Mixed Use (Specific Plan)	Mixed Use (Specific Plan)	Urban Center	Urban Center	Urban Community	Defining area: High potential for place-based activities, frontage opportunities, proximity to regional amenities
6	Gold Street	Cypress Ave	Single family	Commercial / Public	Suburban Community	Close-In Compact Community: Center	Urban Area: Urban Community	Supporting connections to downtown Redding; less place-type destinations
7	Cypress Ave	California St/Angelo Ave	Back of residential properties	Park	Suburban Corridor	Close-in Compact Community: Corridor	Suburban Area (Transitional between Urban and Suburban)	Residential Connection (near POIs); Less emphasis on place and more on connection to POIs, such as the park
8	California St/Angelo Ave	Wyndham Ln	Commercial, with access to residential communities between commercial and railroad	Commercial, with access to residential communities	Suburban Neighborhood	Close-In Compact Community: Center	Suburban Area	Defining area: Potential for place-based activities, frontage opportunities, proximity to regional amenities
9	Wyndham Ln	Breslauer Way	Commercial, with access to residential communities	Industrial	Transitional Corridor	Dedicated Use Area	Transitional Corridor (Industrial Use)	Critical connection to DT Redding; Minimal place-based activities, many barriers to pedestrian mobility
10	Breslauer Way	N Bonnyview Rd	Commercial (smaller scale), with access to residential communities	Commercial / Public (Industry)	Suburban Corridor	Suburban Community: Corridor	Suburban Area	Critical connection to Bonnyview area neighborhoods; However, minimal neighborhood retail options and high industrial use make this less of a destination for non-motorized travelers

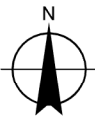
Place Type ID	Extent 1	Extent 2	Primary Frontage - West	Primary Frontage - East	Place Type Category (Specific to Envision 273)	Smart Mobility Framework Place Type Designation	DIB-94 Place Type Designation	Activity Type
11	N Bonnyview Rd	Bonnyview Rd	Commercial, with access to Single family and Multi-family	Commercial, with access to Single family	Suburban Corridor	Rural and Agricultural Lands	Suburban Area	Critical connection to Bonnyview area neighborhoods; However, minimal neighborhood retail options and high industrial use make this less of a destination for non-motorized travelers
12	Bonnyview Rd	Girvan Rd	Neighborhood commercial / Multi-family (undeveloped)	Commercial, with access to Single family and undeveloped Multi-family	Suburban Neighborhood	Suburban Community: Neighborhood	Suburban Area	Defining area: Potential for place-based activities, frontage opportunities, proximity to regional amenities
-	Girvan Rd	Canyon Rd	-	-	Transitional Corridor (Bridge)	Transitional Corridor (Bridge)	Transitional Corridor (Bridge)	-
13	Canyon Rd	n/o Happy Valley Rd	Rancheria and Single family	Industrial	Undeveloped Corridor (Rural)	Rural and Agricultural Lands	Undeveloped Corridor (Rural Connection)	Rural corridor connecting to the Rancheria
14	n/o Happy Valley Rd	Latona Rd	Single family and small-scale commercial	Single family, industrial, and small-scale commercial	Rural Community	Rural and Agricultural Lands	Rural Area: Transitional Corridor	Rural community with limited destinations
15	Latona Rd	Rona Ln	Undeveloped	Undeveloped	Undeveloped Corridor (Rural)	Rural and Agricultural Lands	Undeveloped Corridor (Rural Connection)	Rural corridor
16	Rona Ln	Briggs St	Single family and small-scale commercial	Industrial	Rural Community	Rural and Agricultural Lands	Rural Area: Transitional Corridor	Rural community with limited destinations
17	Briggs St	South St	Single family and small-scale commercial	Mixed Use	Urban Community	Compact Community	Rural Main Street	Defining area: Potential for place-based activities, frontage opportunities, proximity to regional amenities
18	South St	Pinon Ave	Multi-family, and commercial	Commercial	Suburban Corridor	Suburban Community: Corridor	Transitional Corridor (Residential Connection)	Critical residential connection to Anderson; Minimal place-based activities, many barriers to pedestrian mobility
19	Pinon Ave	Pleasant Hills Dr	Single family and commercial core	Commercial Core	Transitional Corridor	Dedicated Use Area	Transitional Corridor (Residential Connection)	Minimal place-based activities, many barriers to pedestrian mobility



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PLACE TYPE DESIGNATIONS

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US Feet
Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet



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FIGURE 6

Community Profile

Redding and Anderson are located in the southwestern portion of Shasta County in Northern California. Based on the 2021 ACS 1 or 5-Year Estimates, the population in Shasta County is approximately 182,000, with 93,250 in Redding and 11,200 in Anderson. Census data related to age, race, employment status, and commute modes of travel are similar for both the County and the Cities of Redding and Anderson. Data reported for Shasta County includes populations within Redding and Anderson.

Demographics: Age & Race

Table 4 presents the census data for population by age and race. Within each jurisdiction, approximately ¼ of the population (22 to 26-percent) is under the age of 18 years, while approximately ¼ of the population (19 to 25-percent) is over the age of 62 years. The City of Anderson has a slightly younger population, proportionally, than both the City of Redding and Shasta County.

Within each jurisdiction, the majority (approximately 75-percent) of the population is White (non-Hispanic or Latino), followed by Hispanic or Latino (11 to 14-percent), American Indian or Alaska Native (2 to 5-percent), Asian (2 to 3-percent), and Black or African American (1 to 2-percent).

Table 4 Age & Race Summary by Jurisdiction

	Shasta County	% of Total	Redding	% of Total	Anderson	% of Total
Total Population	182,139	-	93,251	-	11,208	-
< 18	39,640	22%	20,872	22%	2,894	26%
> 62	45,751	25%	20,783	22%	2,084	19%
Race						
White	137,216	75%	70,080	75%	8,330	74%
Hispanic or Latino	20,697	11%	10,981	12%	1,598	14%
Black or African American	2,191	1%	1,427	2%	90	1%
American Indian and Alaska Native	2,779	2%	1,500	2%	540	5%
Asian	5,963	3%	4,458	5%	237	2%
Other	13,293	7%	4,805	5%	413	4%

Economic Conditions

Table 5 presents the census data for economic characteristics, including employment status, median household income, and household vehicle ownership.

Employment Status

Shasta County and the cities of Redding and Anderson have higher unemployment rates compared to the state of California, which has a 2022 unemployment rate of 3.4-percent. Within the current labor force, the unemployment rate for each jurisdiction is:

- Shasta County: 8.7-percent
- Redding: 6.2-percent
- Anderson: 6.5-percent

Median Household Income

Shasta County and the cities of Redding and Anderson have lower median household income compared to the state of California, which has a 2022 median household income of \$91,551. The median household income for each jurisdiction is:

- Shasta County: \$61,125
- Redding: \$58,702
- Anderson: \$40,954

Household Vehicle Ownership

Most households within Shasta County own at least 1 vehicle, with approximately 40-percent owning more than 2 vehicles. Within Shasta County, approximately 2-percent of households do not have access to a private vehicle. Redding has a slightly lower proportion of households without access to a private vehicle (1.4-percent), and Anderson has a slightly higher proportion of households without access to a private vehicle (2.1-percent).

Table 5 Economic Characteristics by Jurisdiction

	Shasta County	Redding	Anderson
Employment			
Labor Force	81,156	44,320	4,654
Employed	74,074	41,580	4,353
Unemployed	7,082	2,740	301
Unemployment Rate	8.7%	6.2%	6.5%
Median Household Income (US dollars)	\$61,125	\$58,702	\$40,954
Vehicles Available			
No vehicle available	2%	1%	3%
1 vehicle	16%	19%	18%
2 vehicles	41%	44%	39%
3+ vehicles	41%	36%	39%

Commuting Characteristics

Commuting Modes & Duration

Most commute trips are made by private vehicles (over 80-percent), with over 90-percent of those trips made by single individuals, rather than carpooling. The average occupancy rate for private vehicle commute trips is 1.05 for Shasta County.

The proportion of individuals who work from home and, therefore, do not commute to work is approximately 10 and 11-percent for Anderson and Redding, respectively. Approximately 13-percent of individuals work from home within Shasta County.

For non-vehicular commute trips, the commute trips by mode fall within the following approximate ranges for Shasta County, Redding, and Anderson:

- Walked: 2 to 4- percent
- Biked: ~1-percent
- Public Transportation: < 1-percent
- Other (Taxi, motorcycle, etc.): ~2-percent

The mean travel time to work is 18.1 minutes for Shasta County resident, 16.1 minutes for Redding residents, and 18.8 minutes for Anderson residents.

Disadvantaged Communities

For the purposes of this Envision 273 Plan, DACs will be determined using the criterion presented in the DAC analysis within the SRTA RTP, as well as the U.S. Department of Transportation RAISE Areas of Persistent Poverty.

The SRTA RTP defines ‘disadvantaged communities’ as areas that, according to statistical data, have a markedly higher share of individuals challenged by the cumulative impact of:

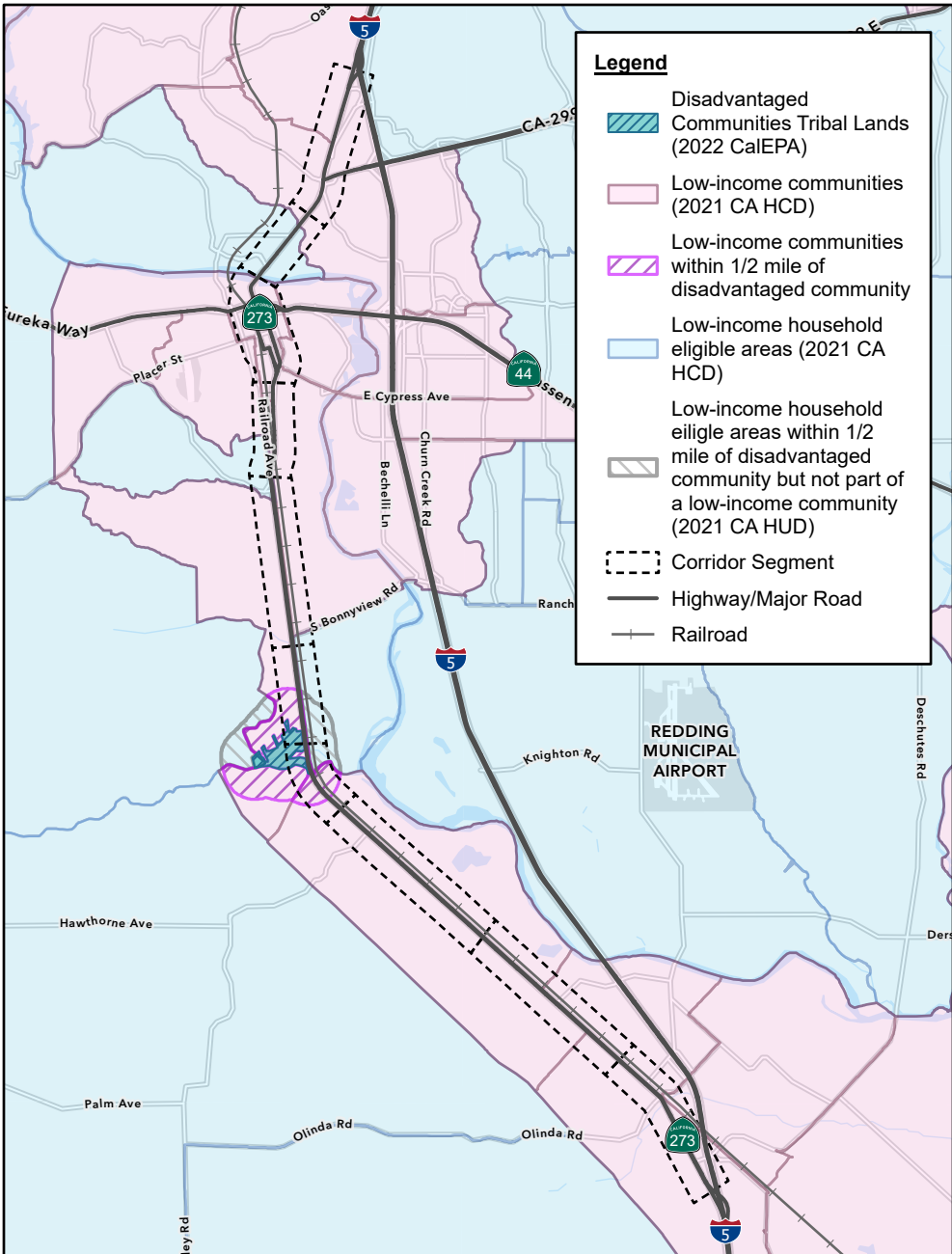
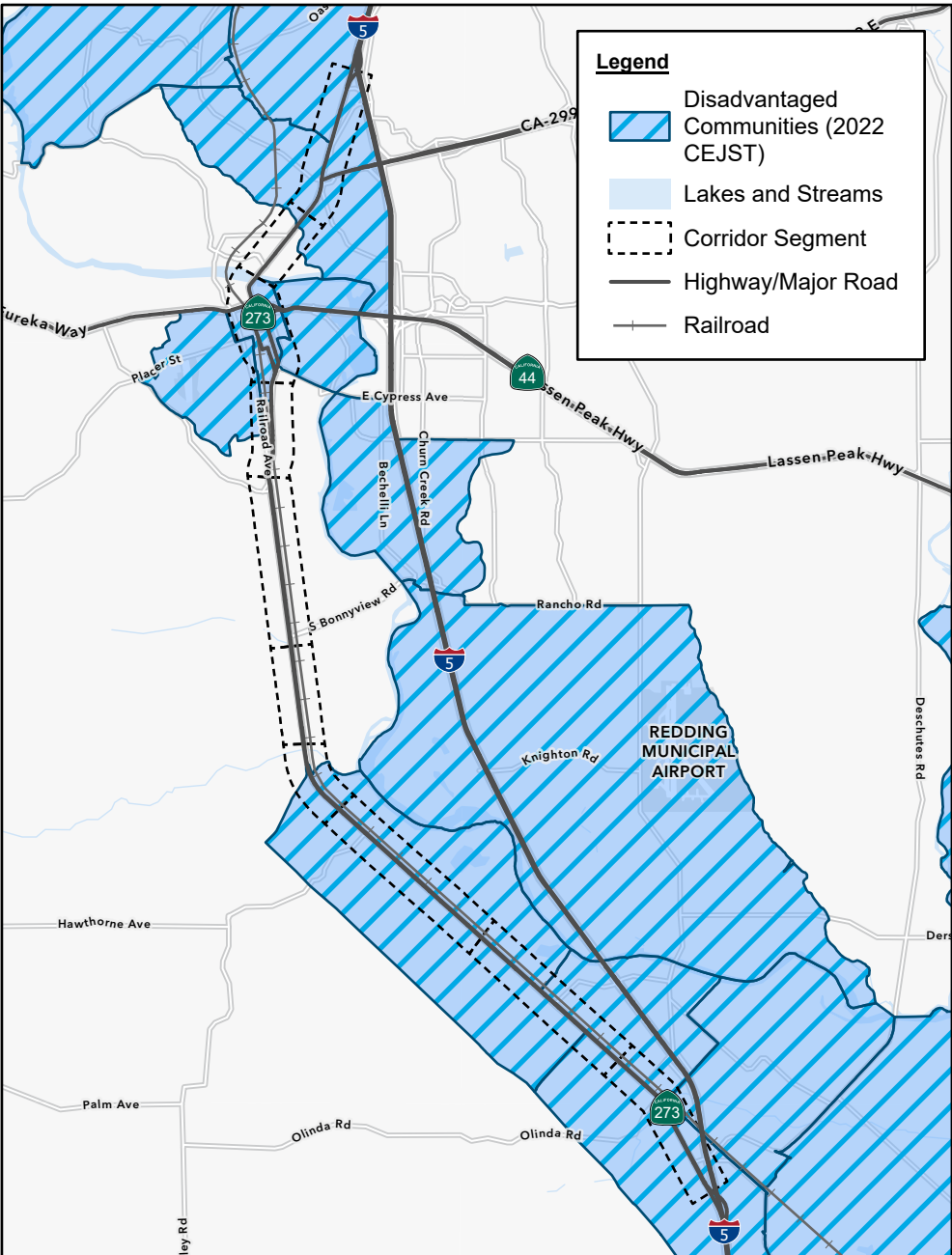
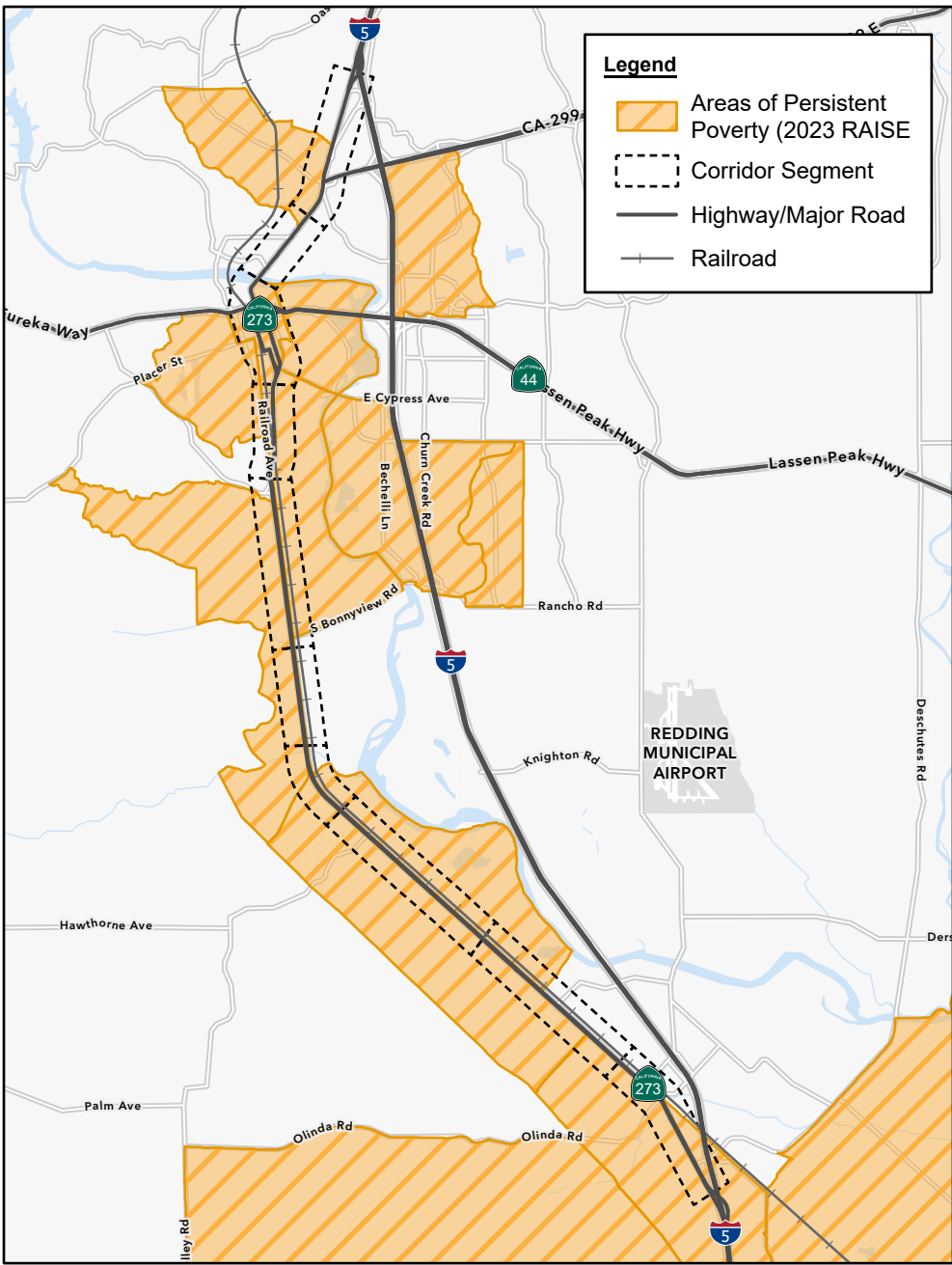
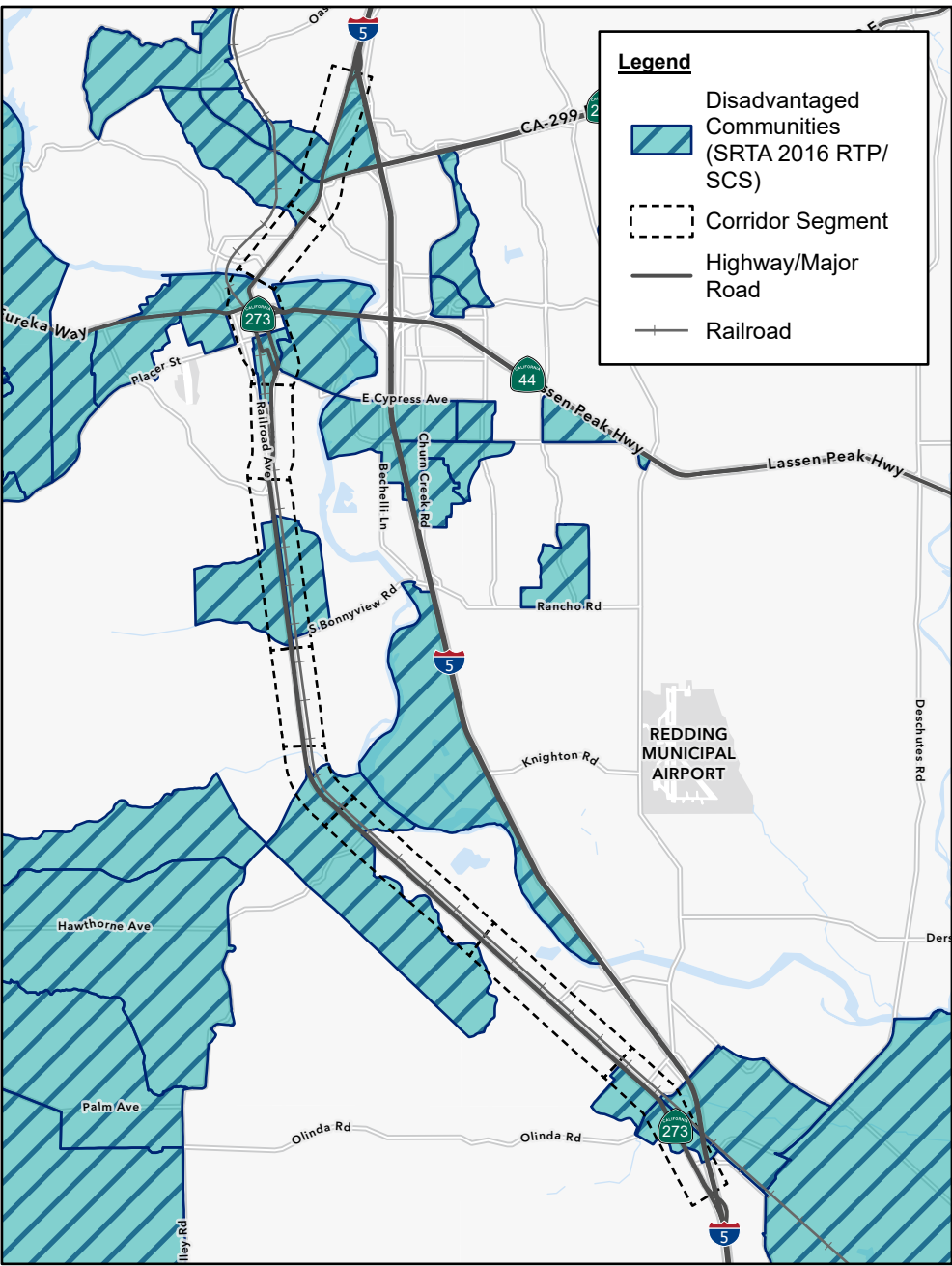
- Poverty and unemployment
- Lack of mobility options, including access to automobile, active transportation, and public transportation
- Housing and transportation cost burden
- Single parent households
- Young and elderly
- Educational attainment
- Linguistic isolation
- Minority status

Additionally, supplemental DAC status information is provided based on the Climate & Economic Justice Criteria and SB 535 CalEPA Criteria.

Figure 7 presents the study areas DACs based on the following four criteria:

- SRTA RTP Criteria
- RAISE Areas of Persistent Poverty Criteria
- Climate & Economic Justice Criteria
- SB 535 CalEPA Criteria

As shown, the project area includes the Shasta Region’s most disadvantaged census tracts.



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STUDY AREA DISADVANTAGED COMMUNITIES

Corridor Destinations

The corridor is a primary transportation route to residential neighborhoods, employment centers, and notable civic/regional destinations. The Downtown area of Redding and City of Anderson are well developed with various commercial and industrial uses along SR 273. Residential communities are primarily concentrated within 1 mile from SR 273, making the corridor a primary route for daily personal travel.

Points of Interest

Northern Segments (1 – 4)

The northern portion of the corridor, between I-5 to Buenaventura Boulevard, includes study Segments 1 through 4. Adjacent land uses include suburban communities and industrial centers to the north, commercial and office uses in Downtown Redding, and residential neighborhoods just north and south of the downtown area.

The northern segments include the following major points of interest:

- **Medical Centers:** Mercy Medical & Shasta Regional
- **Schools:** Turtle Bay School, Evergreen Charter Elementary, North State Independence High School, Sequoia Middle School, Cypress Elementary, and Juniper School.
- **Civic Destinations:** Redding City Hall, Redding Civic Auditorium, and Redding Library.
- **Parks/Recreation:** Sacramento River, Turtle Bay Exploration Park, Caldwell Park, and McConnell Arboretum & Botanical Gardens
- **Transportation Centers:** Shasta Bike Depot and Downtown Transit Center
- **Bridges:** North Market Street Bridge, Diestelhorst Bridge, and Sundial Bridge (Bicycle & Pedestrian Only), all over Sacramento River

Middle Segments (5 – 7)

The middle portion of the corridor, between Buenaventura Boulevard and Happy Valley Road, includes study Segments 5 through 7. Adjacent land uses include primarily industrial or commercial land uses along SR 273 frontage roads with connections to suburban communities. The Redding Rancheria is located in Segment 7 just south of Clear Creek.

The middle segments include the following major points of interest:

- **Schools:** Live Oak School, Bonnyview Elementary School, and Sycamore Elementary School
- **Commercial Centers:** Near Buenaventura Boulevard, South Bonnyview Road, and Westwood Avenue
- **Parks:** Meadow Creek Park
- **Redding Rancheria (Win River Resort & Casino)**
- **Bridge:** South Market Street Bridge over Clear Creek

Southern Segments (8 – 10)

The southern portion of the corridor, between Happy Valley Road and I-5 in Anderson, includes study Segments 8 through 10. Adjacent land uses include primarily industrial or commercial land uses along SR

273 frontage roads with connections to rural communities. The City of Anderson is located within Segment 10.

The southern segments include the following major points of interest:

- **Schools:** Verde Vale Elementary, Anderson Middle School, Anderson High School, and Anderson Heights Elementary.
- **Civic Destinations:** Anderson City Hall
- **Parks:** Volante Park
- **Other Regional Destinations:** Shasta District Fairgrounds

Employment Destinations

The City of Redding is the location of approximately 44,400 jobs (Census, 2020, LEHD). Redding is the county seat of Shasta County. Downtown Redding is located at the intersection of SR 273, SR 44, and SR 299 and is generally considered to be the blocks between Trinity Street to the north, East Street to the east, Cypress Avenue to the south, and Court Street to the west. SR 273 separates into couplets along California Street and Pine Street within the Downtown Area and provides access to the Downtown Core District.

The City of Anderson is the location of approximately 3,500 jobs (Census, 2020, LEHD).

Population & Employment Density

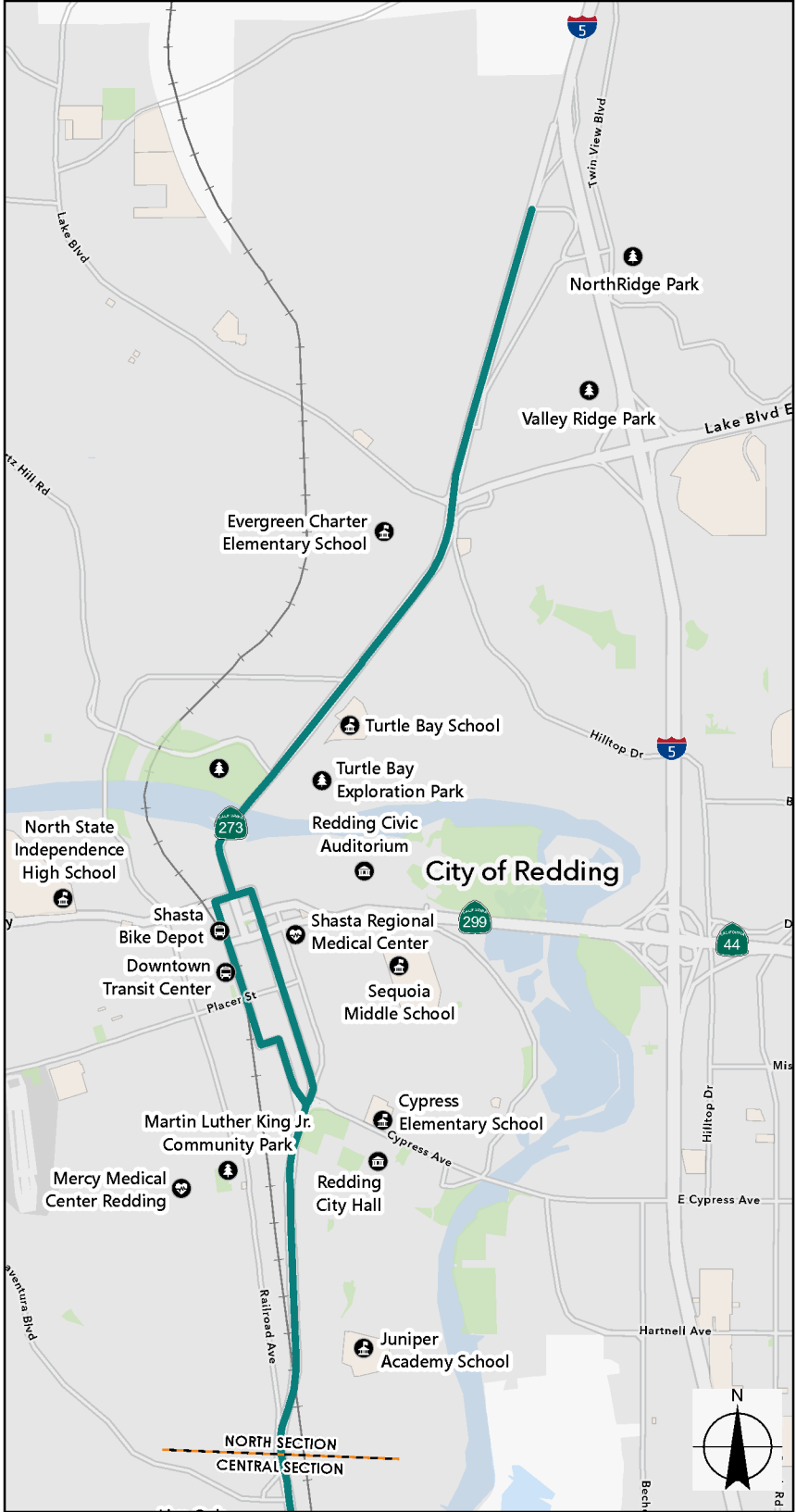
Examining the geographic distribution of population and employment density across the study area helps to assess land use intensity and identify the areas with a greater number of residents and employment opportunities in close proximity to one another. Denser land use environments are associated with shorter vehicle trips and greater likelihood of community members using active transportation or micro-transit. Further, improvement recommendations should be context-specific to the nature of the corridor's diverse built environment, so understanding the variation in land use density across the corridor study area is an important factor to consider in ensuring recommendations work for the communities it serves. Using Census block-level population and employment data¹, population and employment densities were assessed in terms of the number of persons and jobs per acre of land area, respectively, which is presented in Figure 9.

As shown in Figure 9, the highest densities of jobs are concentrated in and near the Downtown Redding area, predominantly in Segment 3, while lower and medium densities of jobs are scattered throughout the rest of the corridor study area. North of the Sacramento River, job densities are much lower, with most of Segments 1 and 2 featuring less than 5 jobs per acre. The few Census blocks in this area with medium employment densities are associated with the low-density commercial uses adjacent to the southbound side of the corridor, near Lake Boulevard and Benton Drive.

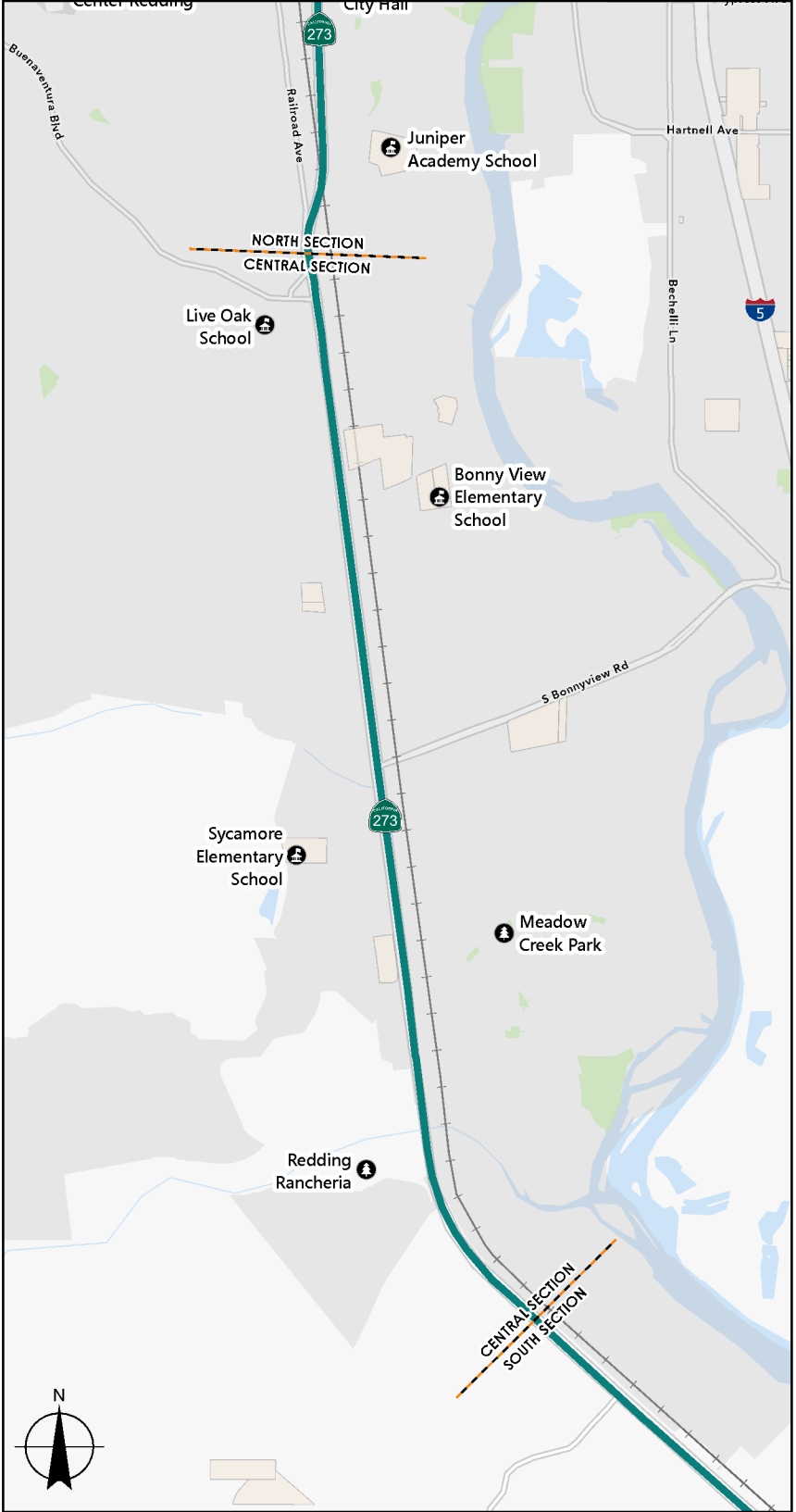
There are only a few Census blocks within the study area with higher population density, which are also in or near Redding's Downtown area. The north end of the corridor, within Segments 1 and 2, features low to medium population density, with less than 20 residents per acre in all blocks, and less than 10 residents per acre in most blocks. Between Segment 5 and Segment 9, which encompasses South Redding, the Redding Rancheria, and unincorporated County areas, population density is mostly low. However, there are some areas of medium density in Segment 6 and several small Census blocks with moderate to high population density within study Segment 8. Segment 10, which covers the City of Anderson's core, also features some areas of medium to moderate population density.

¹ Population data was sourced from the 2020 Decennial Census and employment data from the U.S. Census Longitudinal Employer-Household Dynamics (LEHD) Origin-Destination Employment Statistics (LODES) 2020 dataset.

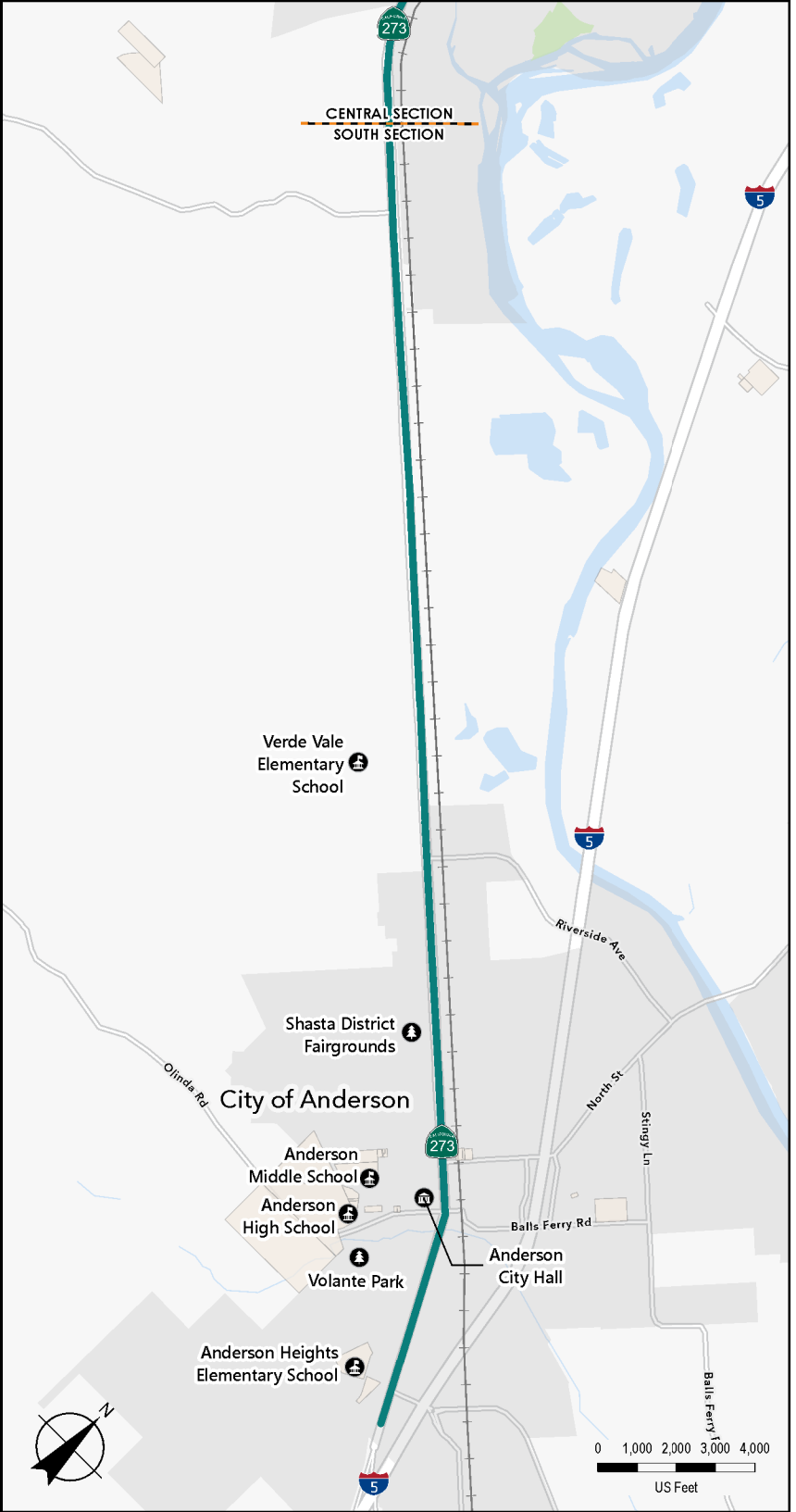
NORTH SECTION



CENTRAL SECTION



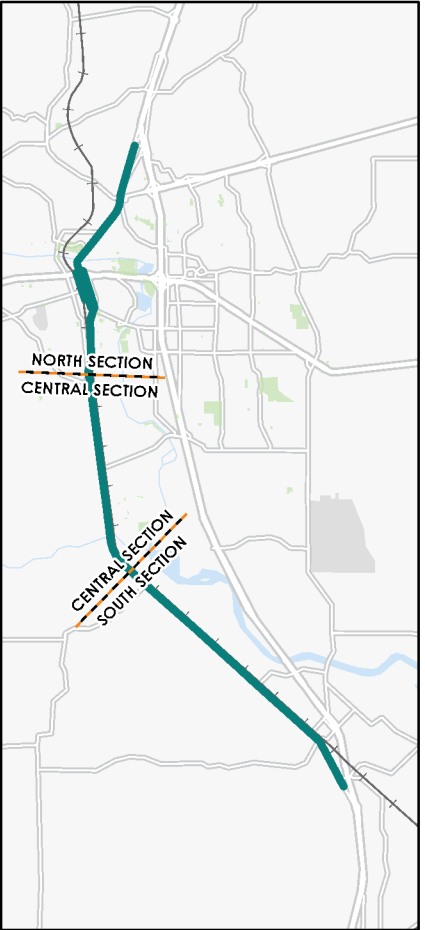
SOUTH SECTION



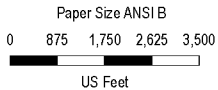
Legend

- Places Of Interest**
- Civic; Municipal
 - Educational
 - Medical
 - Parks/Recreation
 - Transportation
 - Corridor Extent
 - Railroad
 - City Boundary
 - Schools
 - Parks
 - Lakes & Streams

LOCATOR MAP



Envision 273: SR 273 Multimodal Corridor Plan
PLACES OF INTEREST AND LANDMARKS



Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

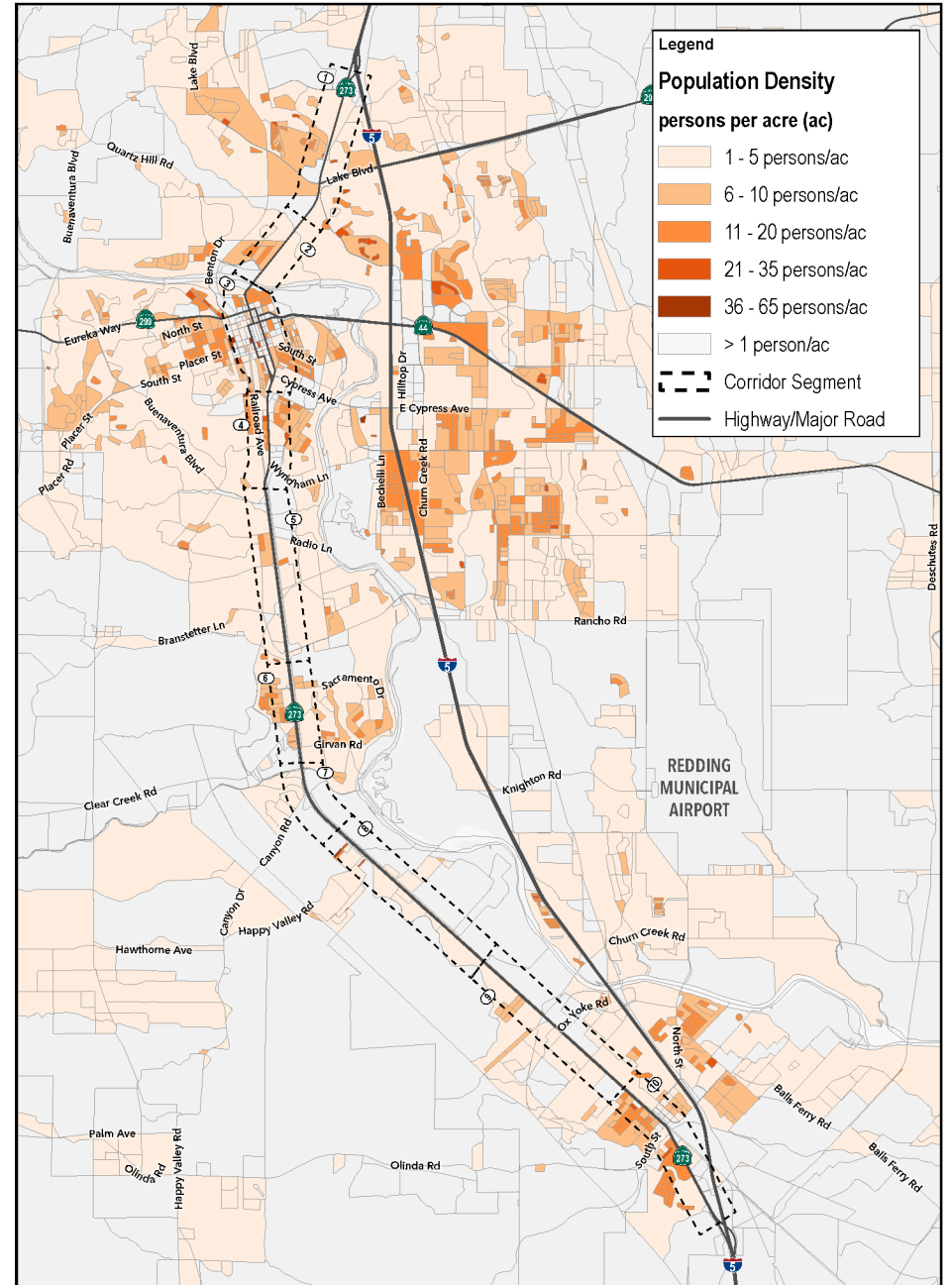
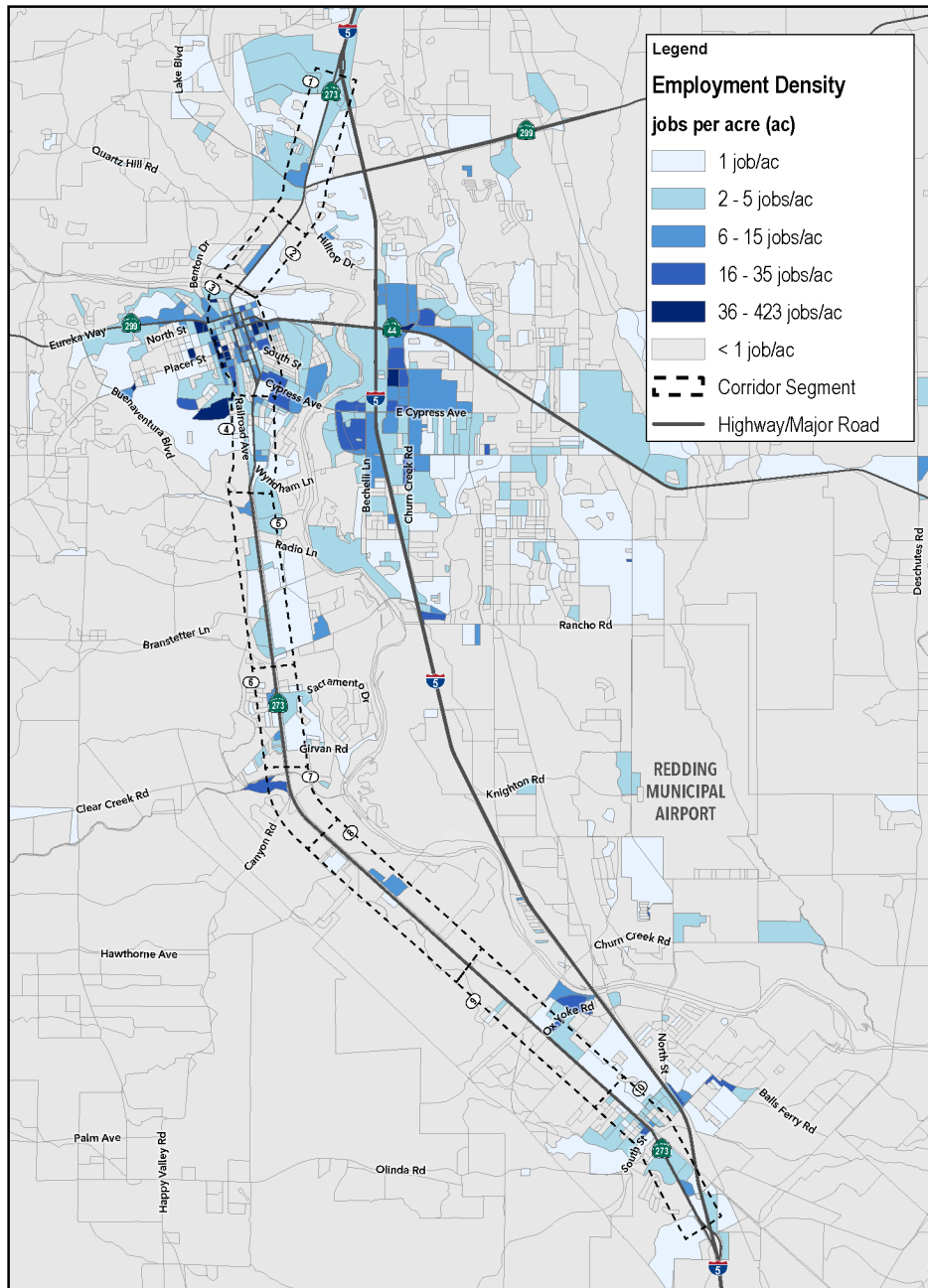
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Project No. 12560002
Revision No. -
Date September 2023

FIGURE 8

Data source: City of Redding GIS, California State Parks, Esri, HERE, Garmin, SafeGraph, METANASA, USGS, Bureau of Land Management, EPA, NPS, USDA, California State Parks, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METANASA, USGS, Bureau of Land Management, EPA, NPS, USDA, City of Redding GIS, California State Parks, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METANASA, USGS, Bureau of Land Management, EPA, NPS, USDA. Created by: pheel



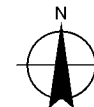
Envision 273: SR 273 Multimodal Corridor Plan

EMPLOYMENT & POPULATION DENSITY

Paper Size ANSI A

0 0.75 1.5
Miles

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet



Project No. 12560002
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Date February 2024

FIGURE 9

3 CORRIDOR CONDITIONS

Roadway Infrastructure

SR 273 is a state highway classified as a principal arterial through the local jurisdictions of Redding and Anderson. The speed limit ranges from 30 miles per hour (mph) through Downtown Redding to 60 mph through rural Shasta County. The Caltrans owned right-of-way (ROW) along the SR 273 corridor ranges from 100 to 255 feet, and the right-of-way includes frontage roads of within certain segments.

Through most of the corridor south of Downtown Redding, the roadway typically has two vehicle lanes per direction, with a center median (dirt, landscaped, or concrete). Adjacent frontage roads, Westside Road and Eastside Road, and the Union Pacific Railroad (UPRR) run parallel to the corridor from Downtown Anderson to just north of Buenaventura Boulevard, where the UPRR crosses SR 273 via an overpass, known locally as the ‘mousehole.’

Approaching Downtown Redding from the north and south, the corridor becomes more developed with locally serving retail. As such, the roadway cross-section changes to include more sidewalk infrastructure, minimal landscaping, and unprotected bike lanes. This segments also include center turn lanes or left-turn lanes.

Through Downtown Redding, SR 273 splits into one-way couplets, including California Street in the southbound direction and Pine Street in the northbound direction.

Daily vehicle volumes in 2020 range from just under 10,000 average daily traffic (ADT) volumes at the southern and northern ends of the corridor, reaching up to 17,800 just north of Downtown Redding (Segment 2) and 18,600 ADT near South Bonnyview Road (Segment 6).

Table 6 summarizes the variations in roadway cross-section, speeds and speed limits, and vehicle volumes, per segment. Roadway functional classification and vehicle volumes and vehicle travel lanes and speeds, and are shown on Figure 11 and Figure 12, respectively.

Corridor Circulation

As described in the preceding section, the corridor cross-section typically includes four vehicle lanes, with two lanes per direction, a center median (dirt, landscaped, or concrete). South of Downtown Redding, the corridor is bordered by frontage roads (Westside Road and Eastside Road), to the west and east, respectively. South of the “mousehole,” the railroad runs parallel to and between the corridor and Eastside Road. Variations in the typical four-lane corridor cross-section include the following locations:

- Bridges crossing the Sacramento River and Clear Creek.
- The presence of right and/or left turn lanes approaching intersections.
- The brief northbound three-lane section between Quartz Hill Road and Benton Drive.
- California Street (Couplet portion of SR 273 through Downtown Redding): South of Tehama St, the road is a two-lane, southbound only cross-section until Cypress Ave, where it transitions to S Market St (SR 273) with both north and south travel.
- Pine Street (Couplet portion of SR 273 through Downtown Redding): This portion of SR 273 includes three northbound vehicle lanes from Cypress Ave to Eureka Way, where it transitions to S Market St (SR 273) with both north and south travel.
- Section under the railroad overcrossing where a temporary Class IV bikeway replaces the outside southbound vehicle lane, resulting in one southbound lane and two northbound lanes.

Downtown Redding Couplets

The only portion of the corridor without bi-directional travel is along the southbound and northbound couplets through Downtown Redding. As described above, the southbound couplet is located on California Street and the northbound couplet is located on Pine Street. The circulation and roadway conditions are illustrated in the following image.

Figure 10 Downtown Redding Circulation

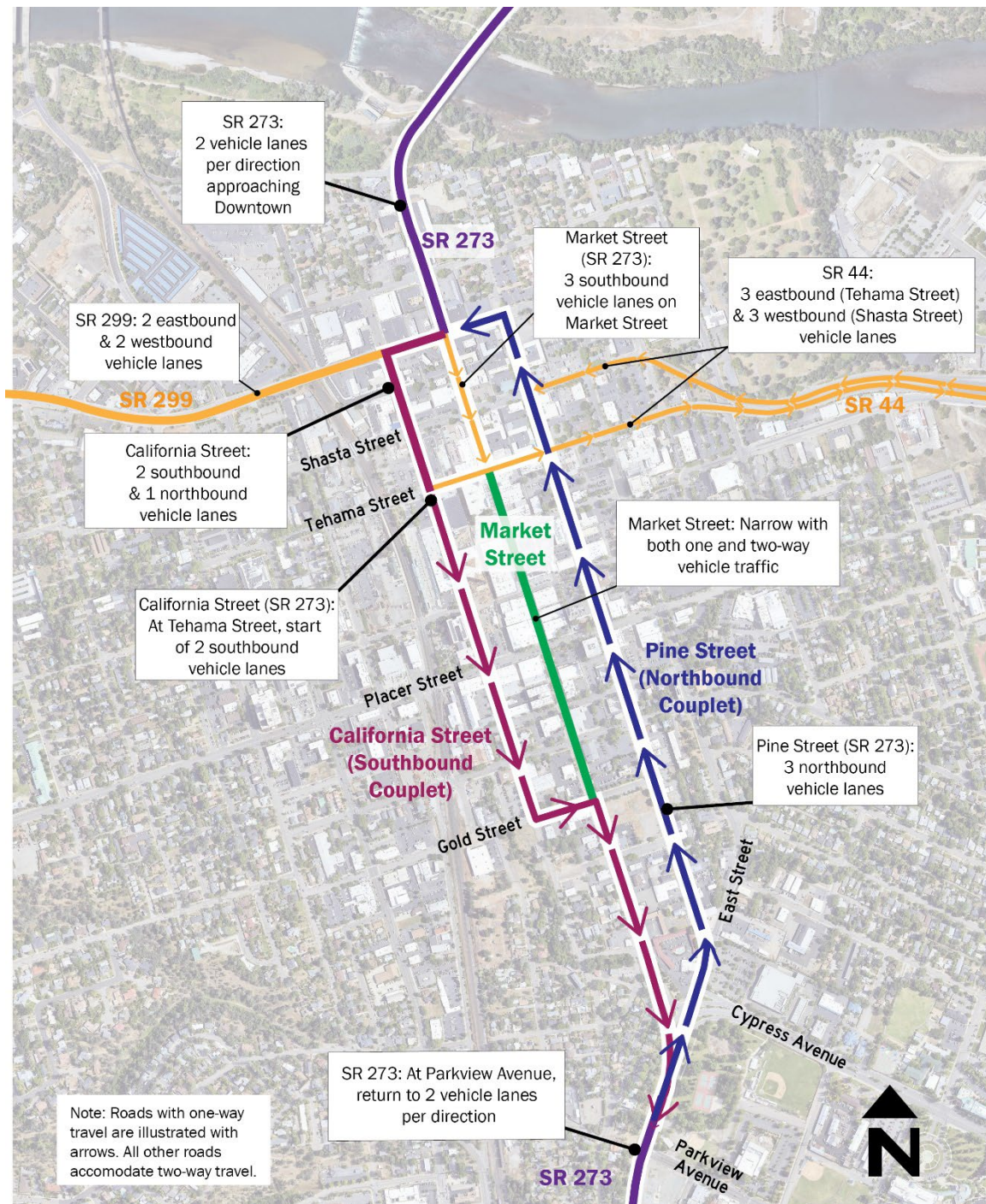
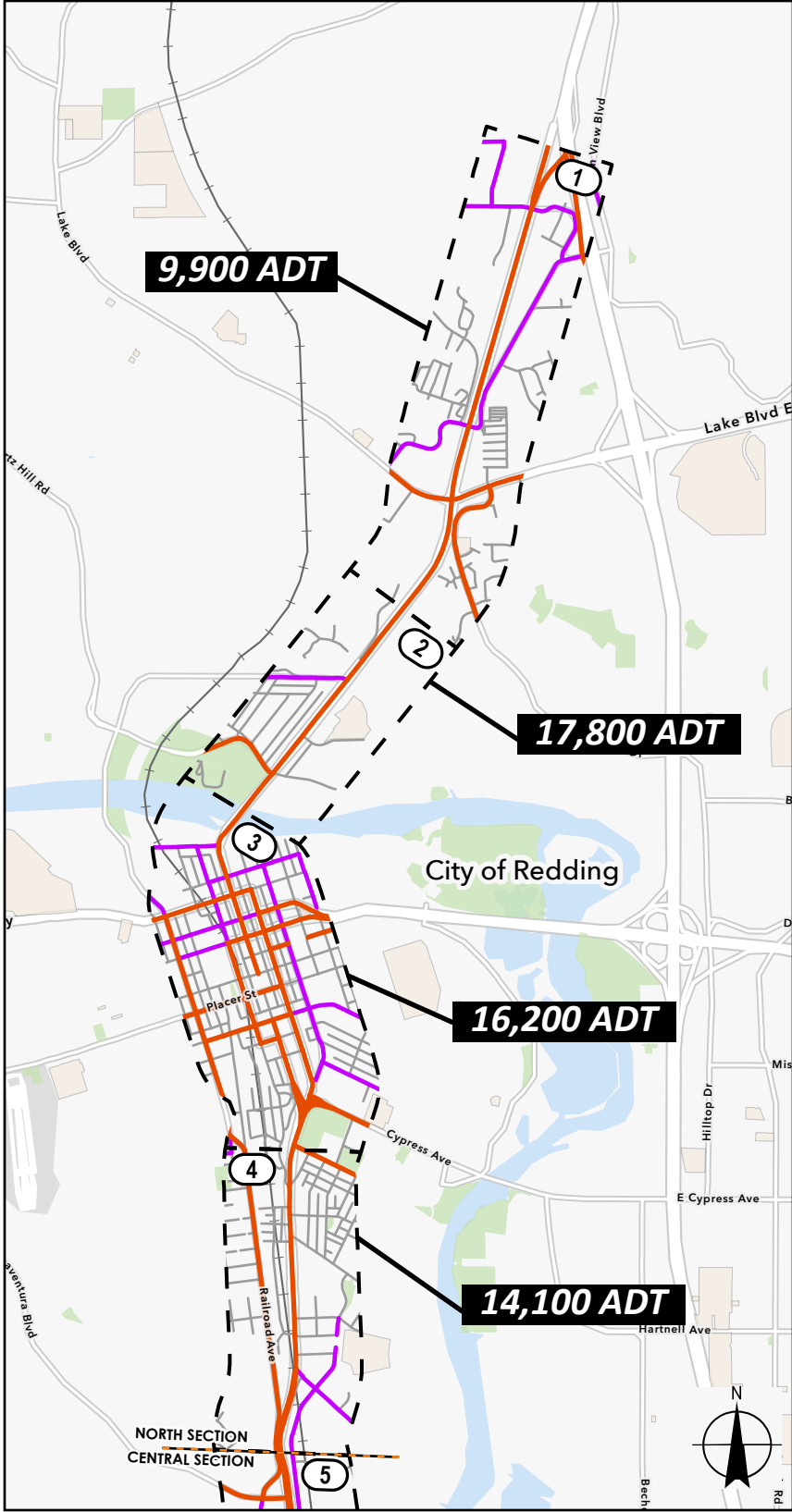


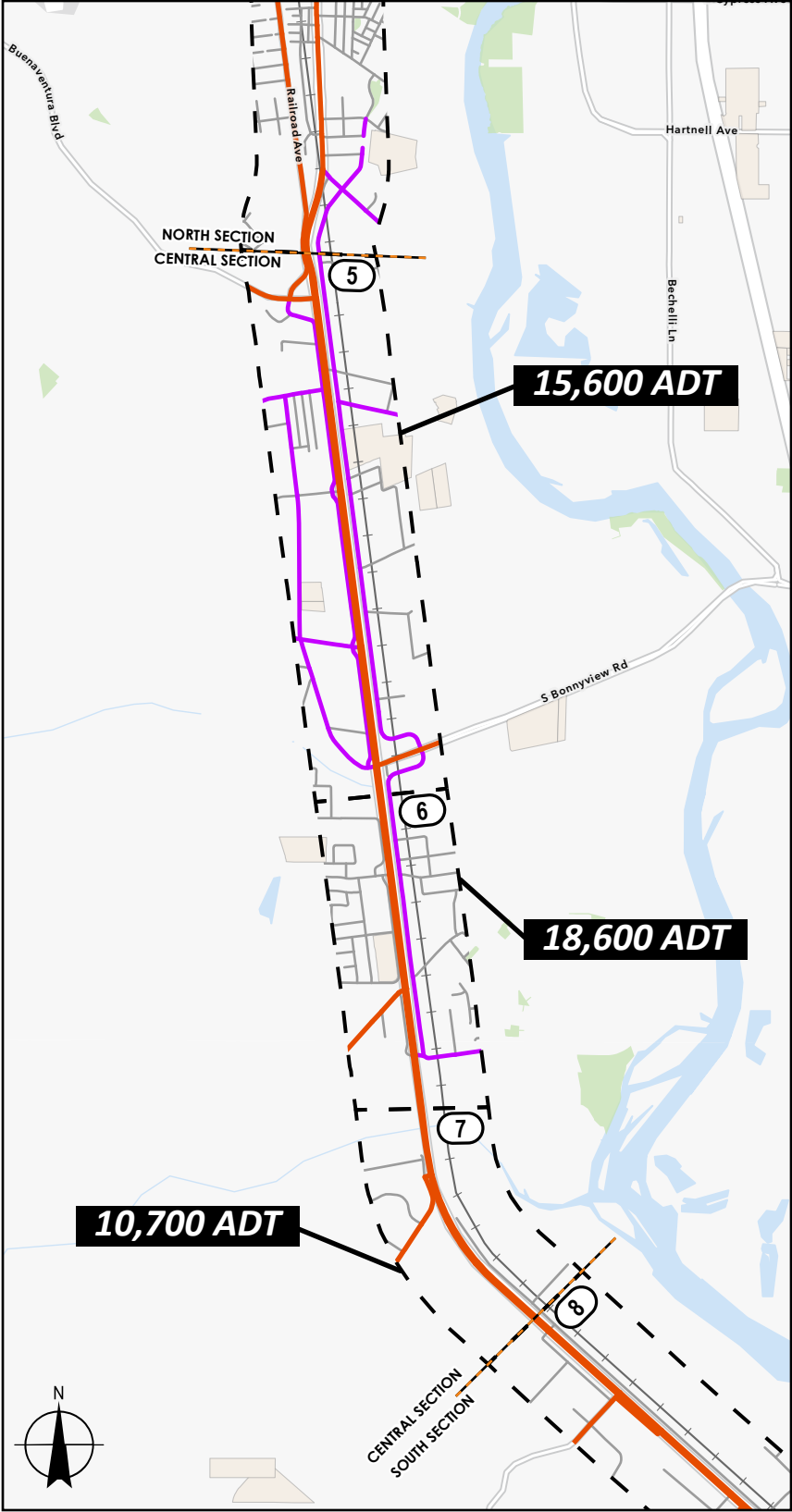
Table 6 *Roadway Conditions Summary by Segment*

Segment:	1	2	3	4	5	6	7	8	9	10
Length (mile)	1.8	1.0	1.4 (2.5 total centerline)	1.2	2.0	1.2	0.9	2.3	2.2	2.2
Classification	Other Principal Arterial	Other Principal Arterial	Other Principal Arterial	Other Principal Arterial	Other Principal Arterial	Other Principal Arterial	Other Principal Arterial	Other Principal Arterial	Other Principal Arterial	Other Principal Arterial
Posted Speed Limit (mph)	55	45	30	40	55	55	55	60	55	45
Lanes (per direction)	2	2 to 3	2 to 3	2	2	2	2	2	2	2
Center Turn Lane	No; dirt median with left turn lanes	No; landscaped median and left turn lanes	No; some left turn lanes at intersections	Yes, and landscaped median	No; dirt median with left turn lanes	No; dirt median with left turn lanes	No; left turn lanes at intersections	No; dirt median with left turn lanes	No; dirt median with left turn lanes	No; landscaped median and left turn lanes
Right-of-Way (ROW) (feet)	200 to 255	150	Varies	100 to 120	120	120	170	170	120	110
Roadway Daily Volume (Caltrans Traffic Survey 2020)	9,900	17,800	16,200	14,100	15,600	18,600	10,700	10,300	9,900	9,200
Heavy Vehicle Percentage	Forthcoming pending traffic count data.									

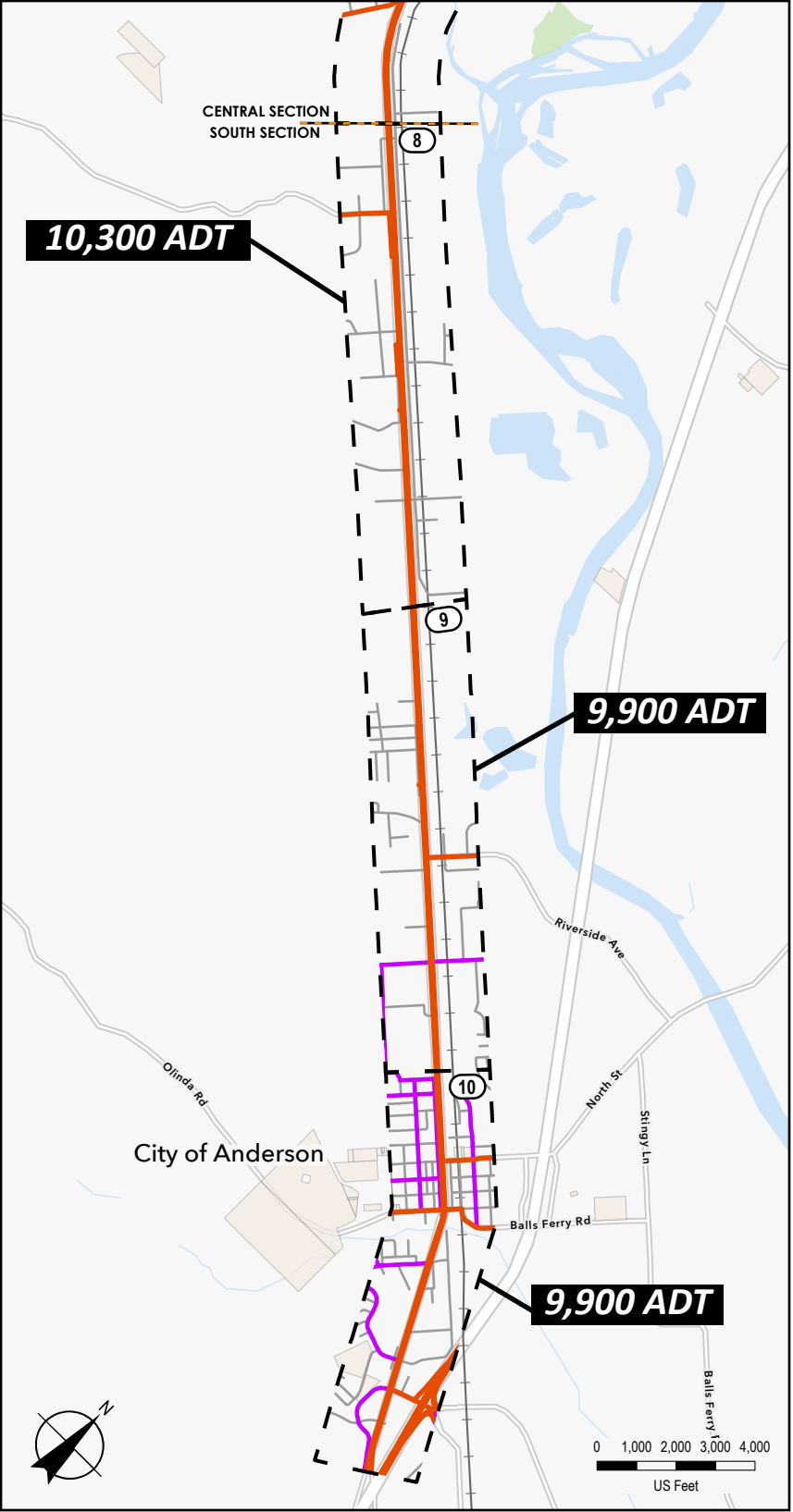
NORTH SECTION



CENTRAL SECTION



SOUTH SECTION

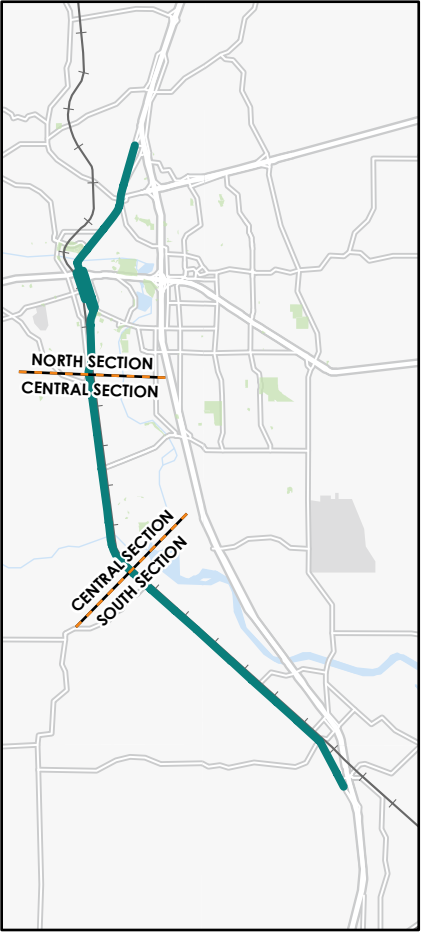


Legend

Functional Class

- Arterial
- Collector
- Local
- Railroad
- Corridor Segment
- Schools
- Parks
- Lakes & Streams

LOCATOR MAP



Envision 273: SR 273 Multimodal Corridor Plan

ROADWAY FUNCTIONAL CLASS
AND VEHICLE VOLUMES

Paper Size ANSI B

0 875 1,750 2,625 3,500

US Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

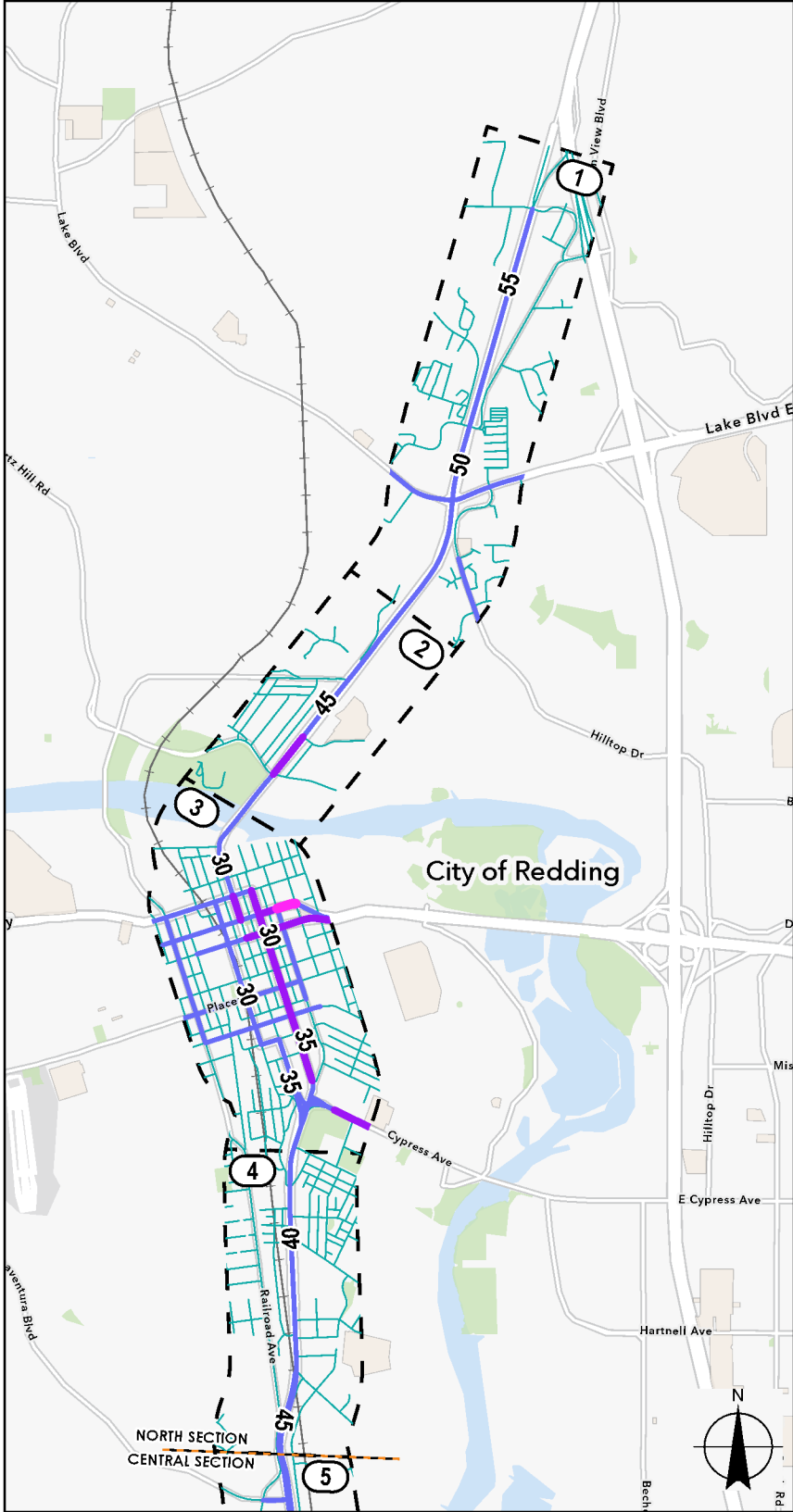
Project No. 12560002
Revision No. -
Date September 2023

FIGURE 11

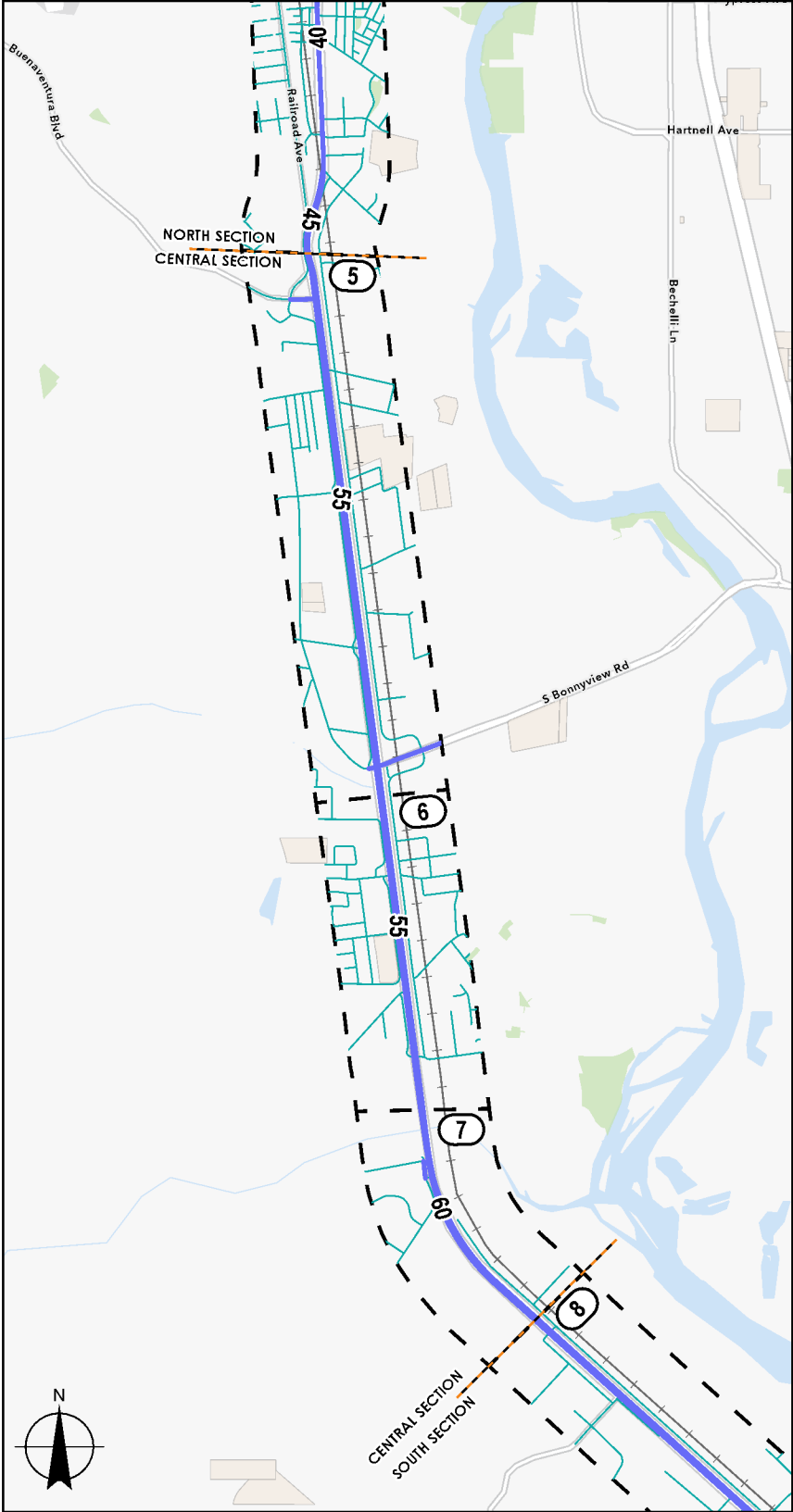
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Print date: 26 Sep 2023 - 10:28

Data source: City of Redding GIS, California State Parks, Esri, HERE, Garmin, SafeGraph, METINASA, USGS, Bureau of Land Management, EPA, NPS, USDA, California State Parks, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METINASA, USGS, Bureau of Land Management, EPA, NPS, USDA, City of Redding GIS, California State Parks, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METINASA, USGS, Bureau of Land Management, EPA, NPS, USDA. Created by: pheel

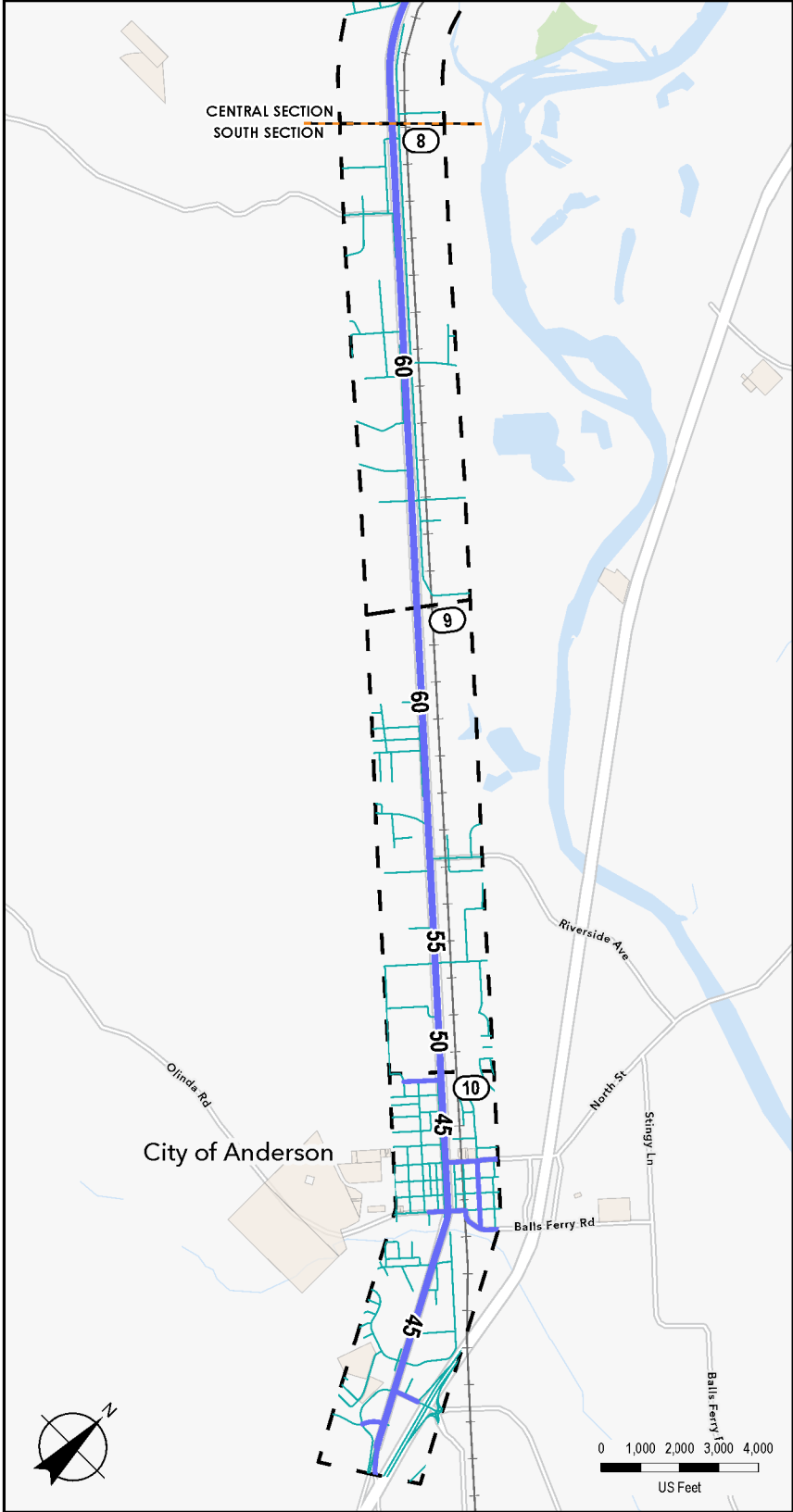
NORTH SECTION



CENTRAL SECTION



SOUTH SECTION



Legend

Number of Lanes

- Two Lanes
- Four Lanes
- Six Lanes
- Eight Lanes

Railroad

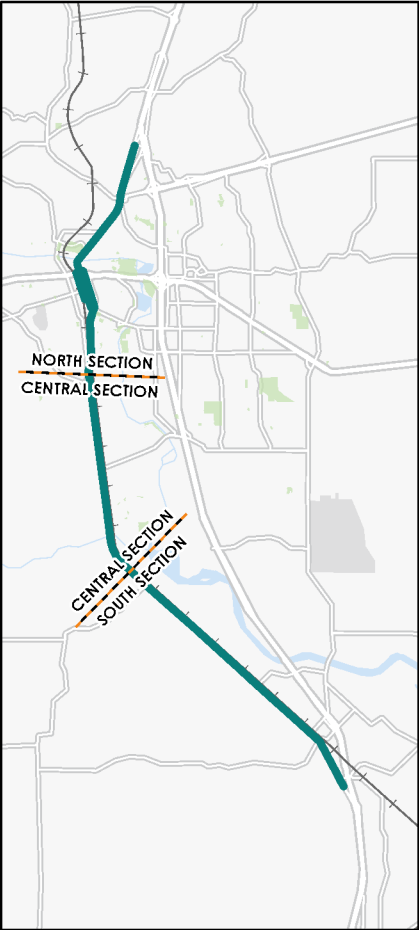
Corridor Segment

Schools

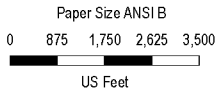
Parks

Lakes & Streams

LOCATOR MAP



Envision 273: SR 273 Multimodal Corridor Plan
VEHICLE TRAVEL LANES AND SPEEDS



Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

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Print date: 26 Sep 2023 - 16:10



Project No. 12560002
Revision No. -
Date September 2023

FIGURE 12

Date source: City of Redding GIS, California State Parks, Esri, HERE, Garmin, SafeGraph, METINASA, USGS, Bureau of Land Management, EPA, NPS, USDA, California State Parks, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METINASA, USGS, Bureau of Land Management, EPA, NPS, USDA, City of Redding GIS, California State Parks, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METINASA, USGS, Bureau of Land Management, EPA, NPS, USDA. Created by: pheel

Multimodal Infrastructure

This section provides a summary of existing multimodal infrastructure, including bicycle and pedestrian facilities, as well as identifies barriers and discusses results for the Bicycle Level of Traffic Stress and connectivity assessment conducted for the corridor.

Pedestrian Facilities

Pedestrian facilities throughout the study corridor include a discontinuous network of sidewalk, crosswalks, and multi-use trail connections. This network includes gaps, narrow sections and vegetation overgrowth in many locations. Most locations with sidewalk vary in width between 4 to 6 feet. However, there are some locations that also feature a landscaped area with sidewalk that are as wide as 15 feet.

Northern Segments

Segments 1 and 2

Segment 1 north of Lake Boulevard lacks the kinds of basic amenities that would make it pedestrian friendly. Sidewalk is missing on both sides of the street, from Caterpillar Road to Lake Boulevard, and the roadway includes only one crosswalk at the intersection of Northpoint Drive and North Market Street and one crosswalk at the intersection of Lake Boulevard and North Market Street. Sidewalk begins on the west side of the street south of Lake Boulevard and continues to Benton Drive, within Segment 2. Sidewalk begins on the east side at Benton Drive, and both facilities continue south toward Downtown Redding.



Northbound SR 273 within Segment 1 (left), and SR 273 at Quartz Hill Road within Segment 2 (right).
Image sources: GHD (left) and Google, 2023 (right).

Downtown Redding (Segment 3) and Segment 4

The segments within Downtown Redding are noticeably more pedestrian-oriented, with very few gaps in sidewalk, lower vehicle speeds, more lighting, landscaped areas, and higher-density land use.

Within Segment 3, sidewalk infrastructure is continuous. However, pedestrian crossings are not well identified or protected. There is one pedestrian signal on Southbound SR 273 (California Street) at Butte Street, providing connectivity to the recently improved downtown area on Market Street, as shown in the following image. A pedestrian signal is actuated by pedestrians and requires vehicles to stop, just like a traffic signal, and are accompanied by pedestrian warning signs. Contrastingly, the pedestrian warning signs on Northbound SR 273 (Pine Street) at Eureka Way are not highly visible.



Pedestrian signal.

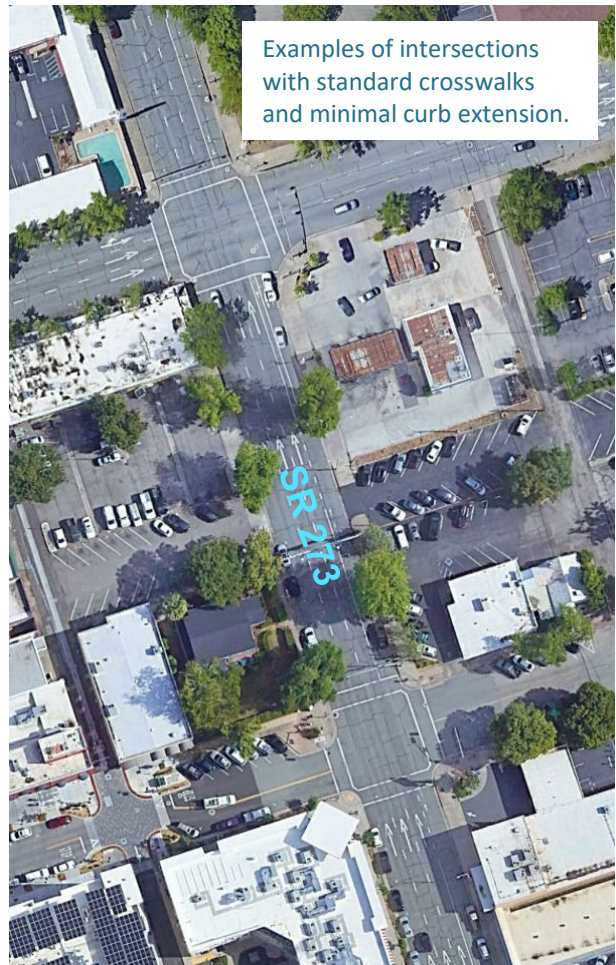


Pedestrian warning signs.

Pedestrian Signal on Southbound SR 273 Couplet (California Street) at Butte Street (left), and pedestrian warning signs on Northbound SR 273 (Pine Street) at Eureka Way (right), within Segment 3. Image sources: Google, 2023.



Examples of intersections with standard crosswalks and minimal curb extension.



Examples of intersections with standard crosswalks and minimal curb extension.

Southbound SR 273 Couplet (California Street) (left) and Northbound SR 273 (Pine Street) (right), within Segment 3. Image sources: Google, 2023.

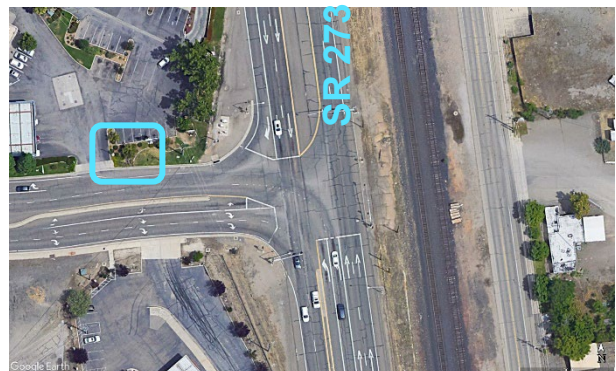
South of Cypress Avenue, gaps in the sidewalk network are intermittent on both sides of South Market Street, however the west side contains many more lengthy gaps. Sidewalk infrastructure is continuous from approximately California Street/Angelo Avenue to Wyndham Lane. Crosswalks crossing the corridor within the section between Lincoln Street and Buenaventura Boulevard are few and far between, with a crosswalk every 1,000 to 1,750 feet, approximately.

The images below show the intersection of SR 273 at Angelo Avenue/California Street. The crosswalk at the eastbound approach is over 130-feet-long and includes a recently constructed pedestrian waiting area.



Pedestrian crossing and waiting area at west approach of California Street at SR 273. Image sources: Google, 2023.

The images below show the westbound approach of SR 273 at Buenaventura Boulevard which is restricted to pedestrians, and there is not bicycle or pedestrian infrastructure at the intersection.



Pedestrian restriction sign at west approach of Buenaventura Boulevard at SR 273. Left image Source: South Market Street (SR-273), Redding Summary and Recommendations Report, 2021. Right image source: Google, 2023.

Middle Segments

The Middle Segments lacks continuous sidewalk and crosswalks, with those only found at the signalized intersections along with ADA accessible curb ramps and occasional transit stops. These intersections include:

- Bonnyview Road
- Westwood Avenue
- Clear Creek Road
- Redding Rancheria Road
- Happy Valley Road

A short multi-use path does parallel SR 273 on the west side connecting Cedars Road and Jewell Lane, but it only travels nearly 1,000 feet.

Southern Segments

The Southern Segments continues the lack of pedestrian facilities found in the Middle Segments, except for at signalized intersections. Like the segments through Downtown Redding, the segments within the City of Anderson are noticeably more pedestrian-oriented, with very few gaps in sidewalk. The pedestrian network is mostly built out to match the street grid network. Crossings of SR 273 are at signalized intersections.

Bicycle Facilities

The study corridor features existing Class II bike lanes and Class III bike routes. Existing bike lane widths generally vary between four and six feet through the corridor but narrow in a few locations where roadway width/right-of-way is constrained.

Northern Segments

Class II Bike Lanes on Segments 1 & 2

In the Northern Segments, there are existing Class II bike lanes along North Market Street in Redding from Lake Boulevard to Quartz Hill Road.

Between Lake Boulevard and Quartz Hill Road, the bike lanes on SR 273, as shown below, are not buffered or protected. In addition, the speed limits through these sections of the corridor are between 45 and 50 miles per hour.



Class II Bike Lanes on Southbound SR 273 within Segment 1 (left), and Class II Bike Lanes on Northbound SR 273 at Benton Drive within Segment 2 (right). Image sources: Google, 2023.

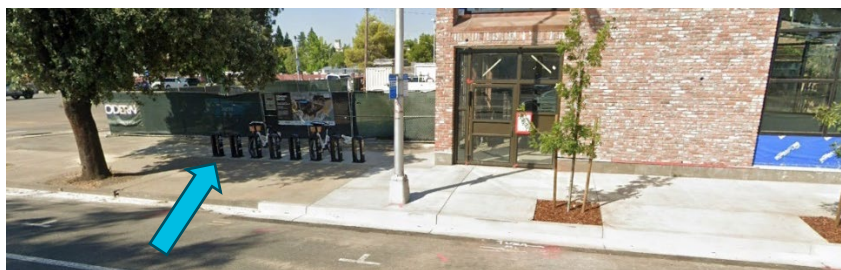
There are also Class II facilities adjacent to the corridor to the east along Twin View Boulevard, beginning at Mountain View Drive and ending at Valley Ridge Drive. Additionally, there are Class II facilities along Lake Boulevard, connecting to the corridor from the west. A Class III bike route on Benton Drive, beginning at River Park Drive, also connects to the SR 273 corridor at North Market Street.

Class II Bike Lanes & Bike Depot through Downtown Redding

In Downtown Redding, Class II bike lanes exist on or adjacent to the SR 273 corridor study area along Pine Street, from Eureka Way to South Market Street, on California Street from Tehama Street to Gold Street, on Gold Street from California Street to South Market Street, and on South Market Street from Gold Street to just south of Cypress Avenue. In May of 2023, Shasta Living Streets launched the Redding Bike Depot, which includes a station for the city's new electric bike-share system and secure indoor bike parking.



Class II Bike Lanes on California Street (left), and Class II Bike Lanes at curve on Southbound SR 273 at Gold Street (right), within Segment 3. Image sources: Google, 2023.



Bike Share at Bike Depot on California Street, just south of Shasta Street. Image source: Google, 2023.

Also adjacent to the study corridor in the downtown area, Class II bicycle facilities exist along East Street from Placer Street to Locust Street, Court Street from South Street to Schley Avenue, Parkview Avenue from South Market Street to Cypress Avenue, Angelo Avenue from South Market Street to Parkview Avenue, and Cypress Avenue from South Market Street to Hartnell Avenue.

Class III bike routes within and adjacent to Downtown Redding can be found on Trinity Street from Center Street to Continental Street, Continental Street from Trinity Street to Butte Street, East Street from Trinity Street to Placer Street, Butte Street/Park Marina Drive from Continental Street to Sundial Bridge Drive, South Street from East Street to Park Marina Drive, a portion of Cypress Avenue east of South Market Street.

Bike Facility Gap within Segment 4

There are no bicycle facilities on SR 273 through Segment 4. The recently implemented pilot Class IV protected bikeway replaces the outer vehicle lane on Southbound SR 273 at the southern end of Segment 4, just south of Wyndham Lane. The bikeway passes through the “mousehole” under the railroad overcrossing and terminates at the intersection with Buenaventura Boulevard.



Start of Pilot Class IV Bikeway on Southbound SR 273. Image source: Google, 2023.



Southbound view of the “mousehole” at the railroad overcrossing on SR 273. Image Source: South Market Street (SR 273), Redding Summary and Recommendations Report, 2021.

South of Downtown Redding and paralleling the SR 273 corridor to the west, Railroad Avenue between Schley Avenue and Buenaventura Boulevard provides a mix of Class III bike route with varying shoulder widths and Class II bike lanes. Buenaventura Boulevard includes Class II facilities that begin northwest of the corridor study area and end at Railroad Avenue, nearly reaching South Market Street. To the east of the study corridor, Polk Street/Eastside Road provide Class II facilities for most of the segment beginning at Ellis Street and extending to Radio Lane and into the Middle Segments.

Middle & Southern Segments

There are no bicycle facilities along SR 273 south of Buenaventura Boulevard until South Street in Anderson. SR 273 through Segments 5, 6, 7, and the majority of Segment 8 is designated a Class III bicycle route. The speed limit through these segments is 55 or 60 mph, resulting in high streets bicycling conditions. Image to the right shows a 60-mph speed limit sign for Northbound SR 273 in Segment 9 (Image source; Google, 2023).



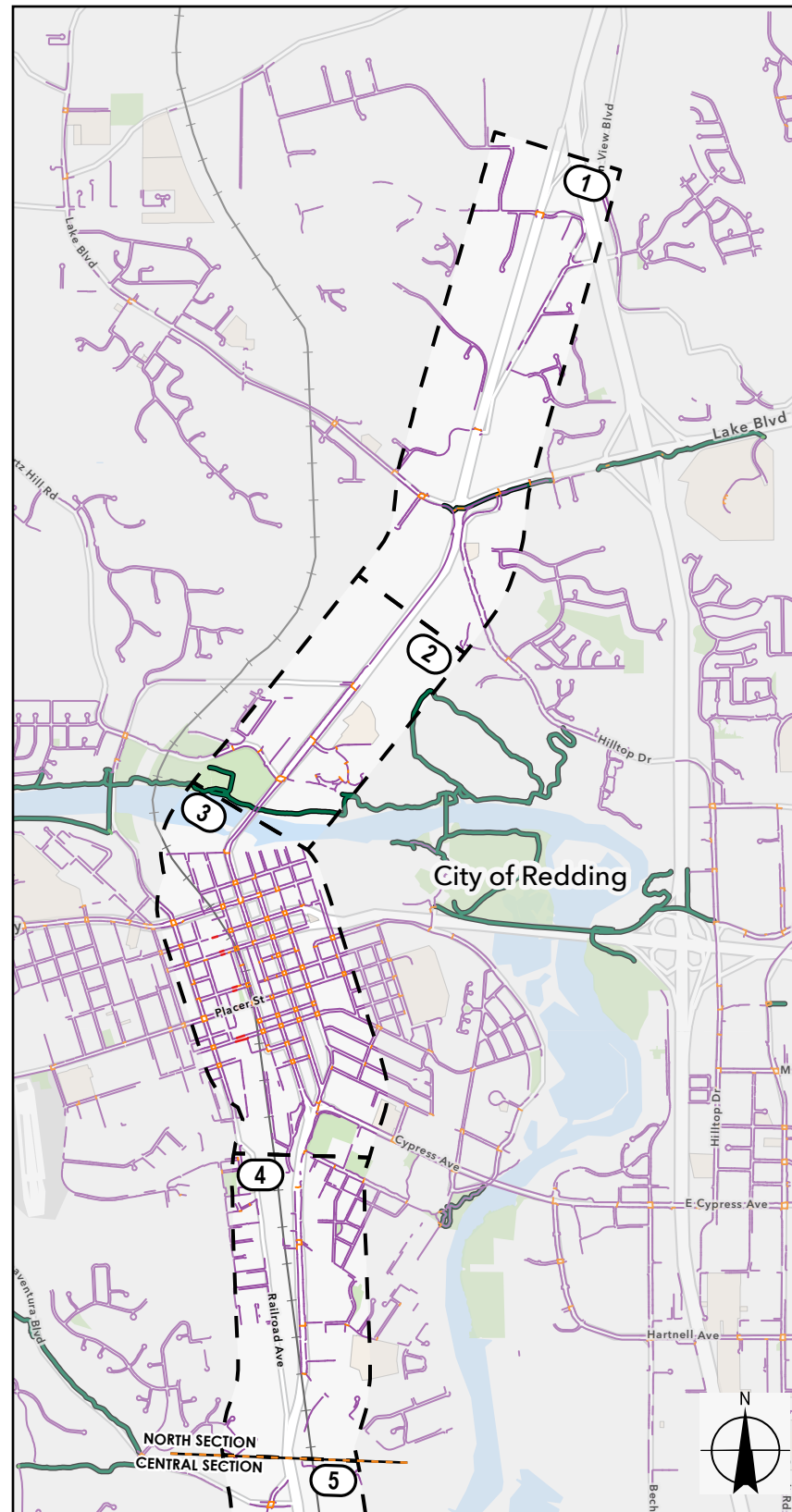
The Middle Segments include existing Class II bike lanes on South Bonnyview Road, beginning at Westside Road, crossing the SR 273 corridor, and continuing east beyond the corridor study area. Additionally, Class II facilities are included on Eastside Road for the brief segment that jogs east before intersecting South Bonnyview Road.

Parallel to the SR 273 corridor, Eastside Road south of Radio Lane is identified as a Class III bike route, as is Howard Drive between Westside Road and Cedars Road, Westside Road between Buenaventura Boulevard and Cedars Road, Branstetter Lane between Branstetter Circle and Westside Road, Cedars Road between Howard Drive and Westside Road, and Clear Creek Road west of South Market Street. Furthermore, south of South Bonnyview Road, South Market Street is identified as a Class III Bike Route, continuing into the Southern Segments. South Market Street also contains short Class II bike lanes with green conflict marking at the approach to the Westside Road/Girvan Road intersection, connecting with wider shoulders in both the northbound and southbound directions past the intersection.

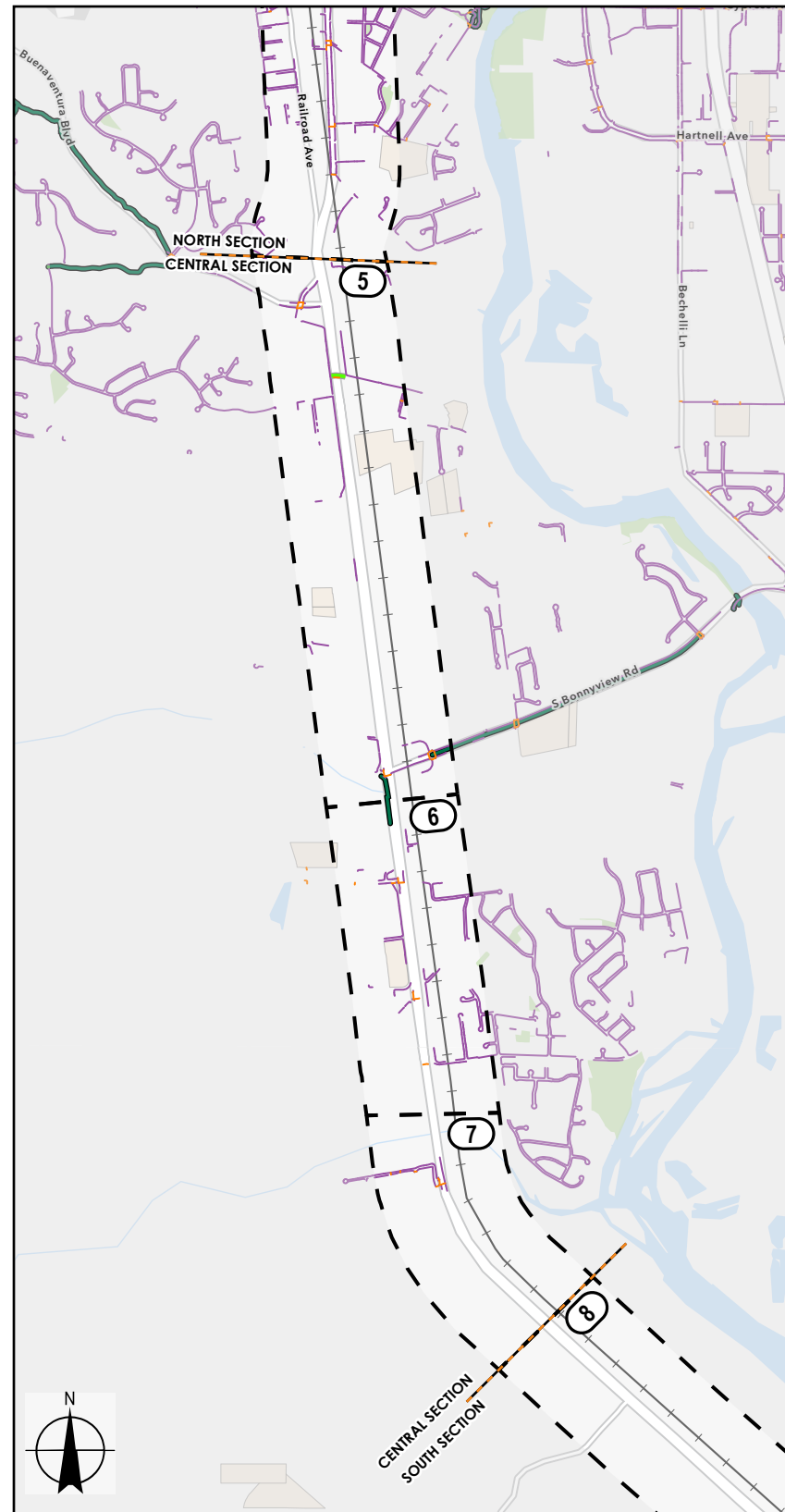
The Class III bike route continues south on South Market Street, ending at Redding Rancheria Road. The Southern Segments also feature Class III bike routes on Silver Street between Briggs Street and South Street and South Street between Emily Road and SR 273, both in the city of Anderson. Existing class II bike lanes can be found on Olinda Road west of Emily Road, North Street between SR 273 and Silver Street, Balls Ferry Road between Ventura Street and Freeman Street, and SR 273 between South Street and Bruce Street. Class II facilities on Pinon Avenue connect to class II facilities on the short Ponderosa Street, providing a connection to the Old 99 Trail Class I shared use path that begins at the intersection of Pleasant Hills Drive and Rhonda Road. A short segment of Class II bike lanes on Pleasant Hill Drive also connects the SR 273 study corridor with this shared use path.

Bicycle facilities at most of the key intersections along the corridor lack buffers, barriers, or conflict markings, or are dropped all together at the intersection approach. Coupled with cracking pavement or fading paint in some locations, existing bicycle facilities along the corridor provide a high-stress experience for bicyclists, particularly children and other vulnerable road users.

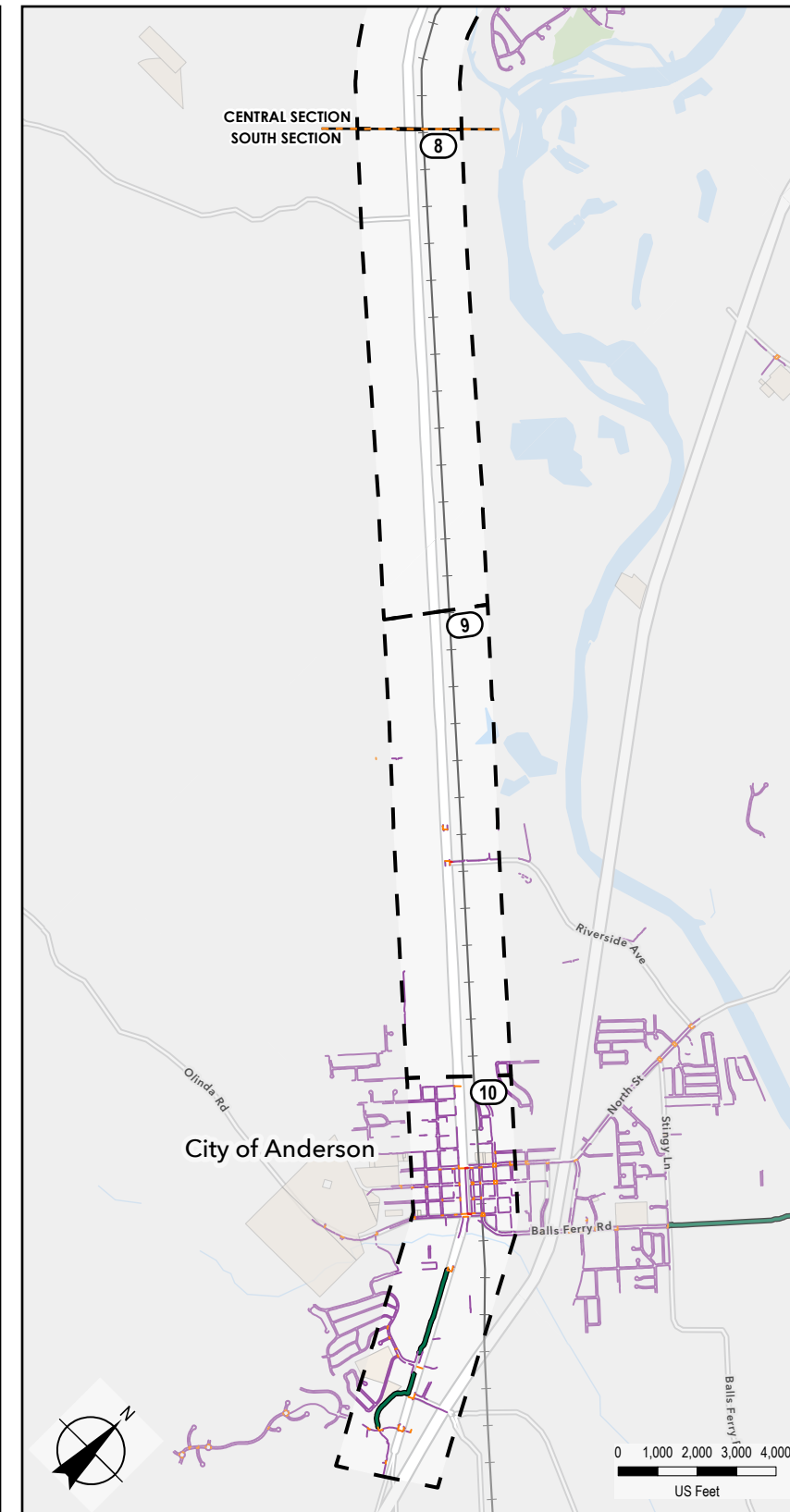
NORTH SECTION



CENTRAL SECTION



SOUTH SECTION

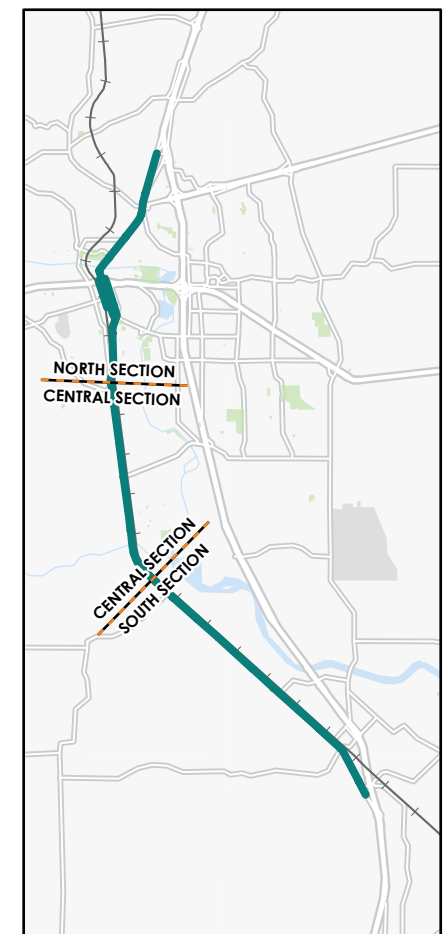


Legend

Pedestrian Facilities

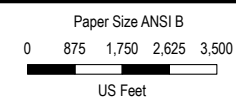
-  Crosswalk
-  Sidewalk
-  Railroad Crossing
-  Multi-use Trail Connection
-  Class I Shared Use Path
-  Pilot Vehicular Access Restriction
-  Railroad
-  Corridor Segment
-  Schools
-  Parks
-  Lakes & Streams

LOCATOR MAP



Envision 273: SR 273 Multimodal Corridor Plan

PEDESTRIAN FACILITIES



Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet



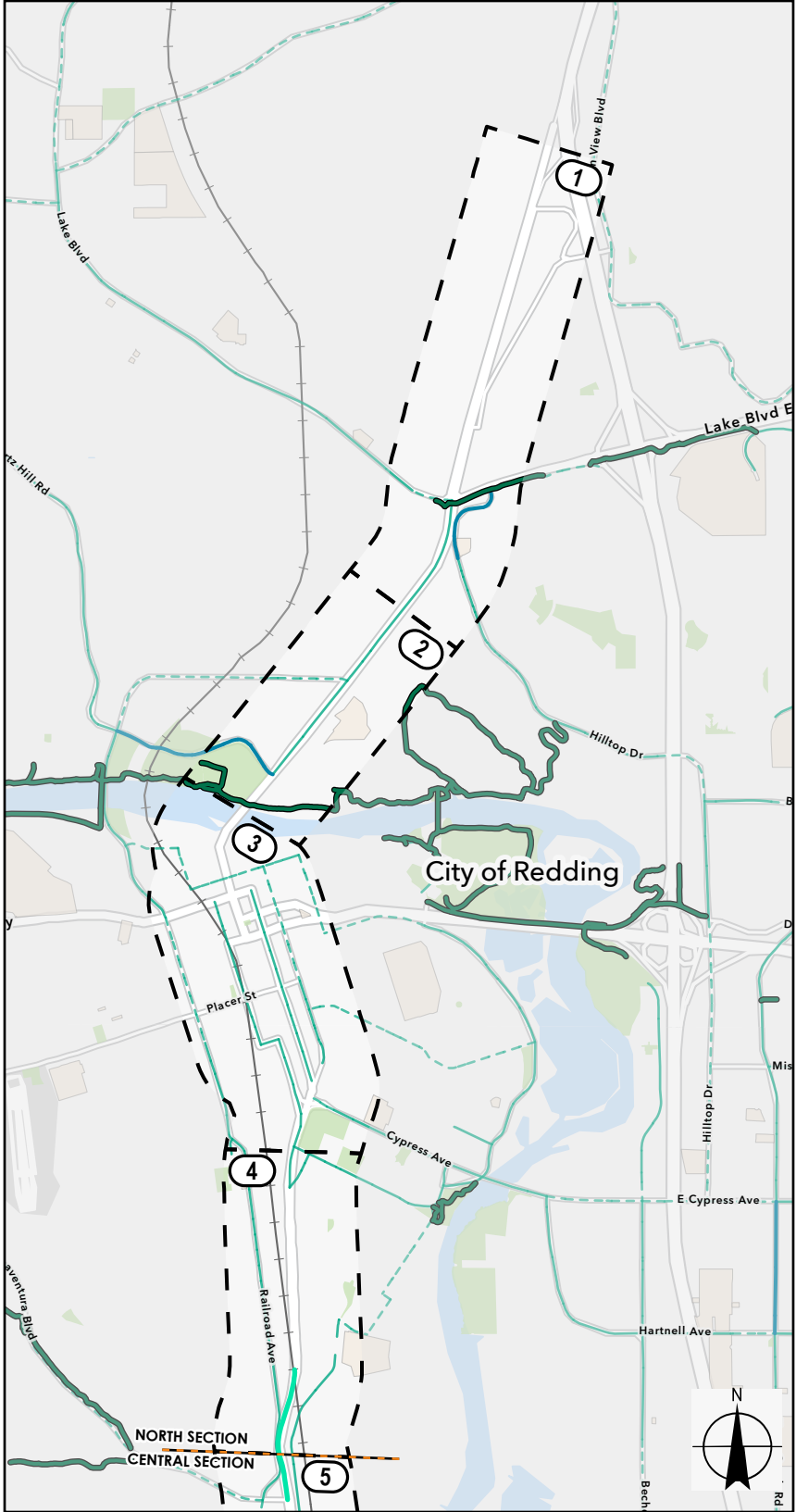
Project No. **12560002**
Revision No. **-**
Date **September 2023**

FIGURE 13

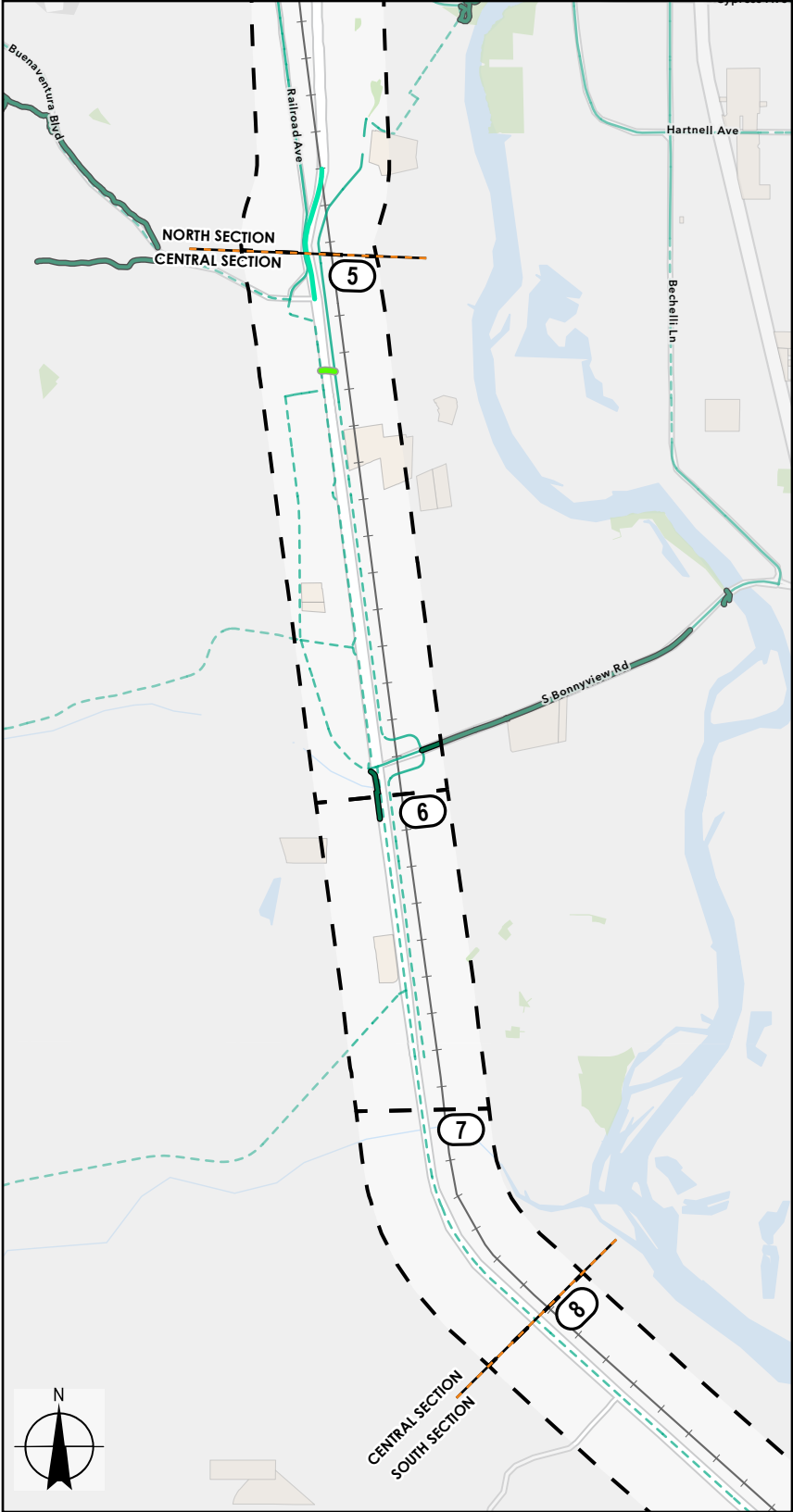
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12560002_013_PedestrianFacilities
Print date: 26 Sep 2023 - 15:26

Data source: City of Redding GIS, California State Parks, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA, California State Parks, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA, City of Redding GIS, California State Parks, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA. Created by: coel

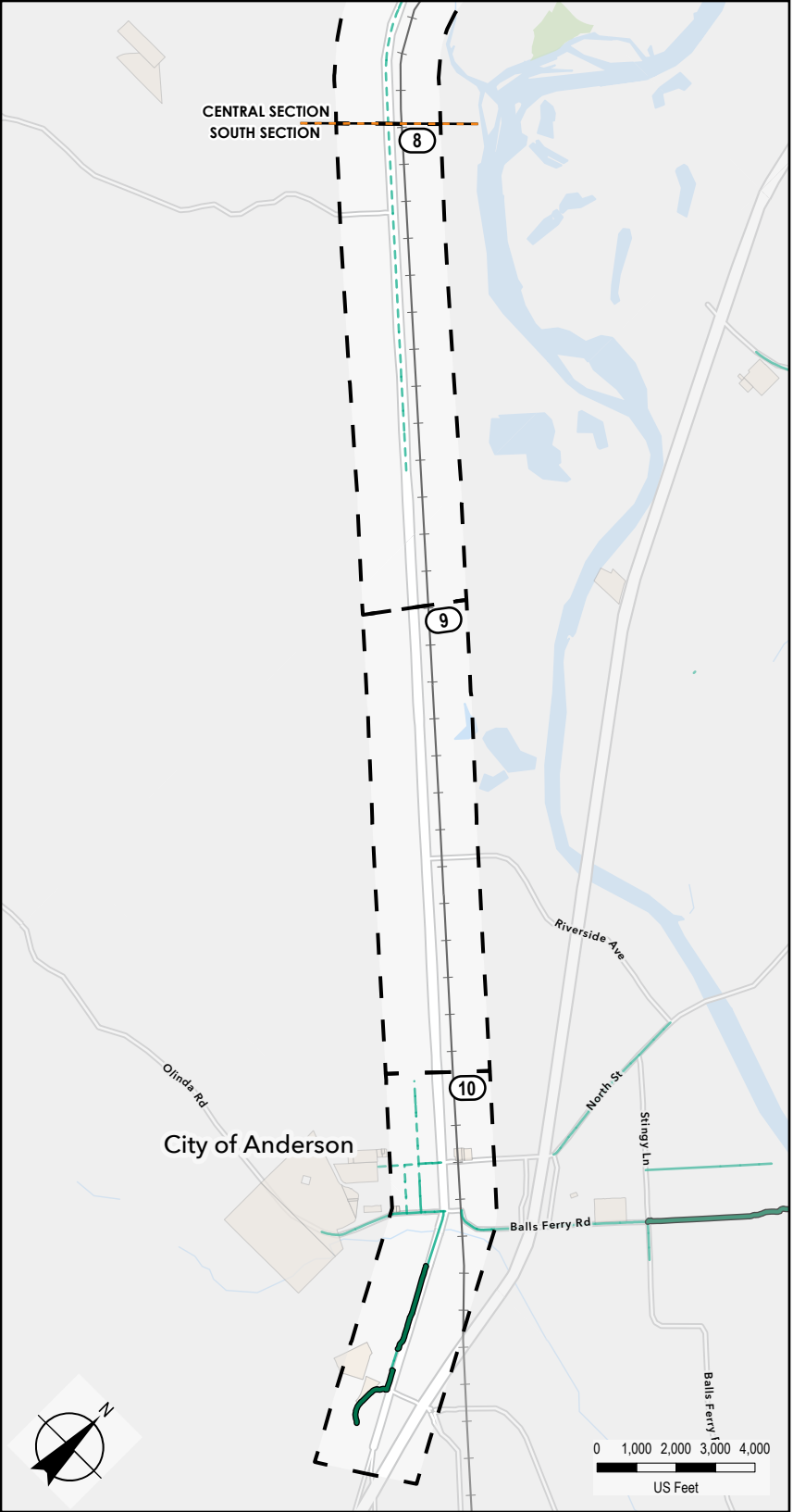
NORTH SECTION



CENTRAL SECTION



SOUTH SECTION



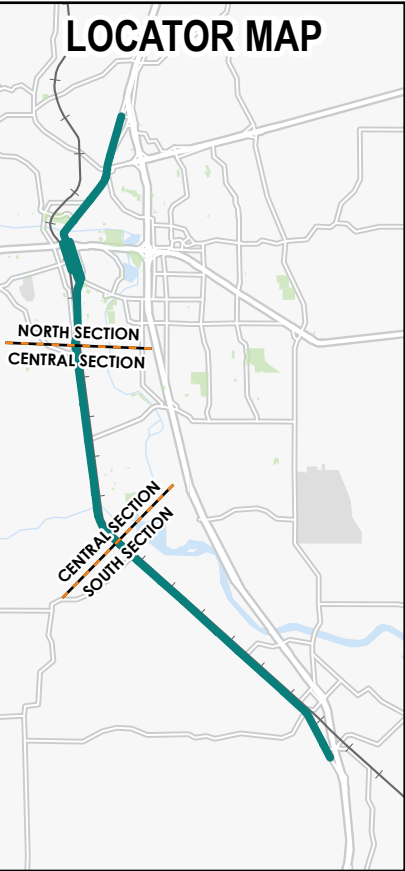
Legend

Separated Facilities

- Class I Shared Use Path
- Pilot Class IV Separated Bikeway
- Pilot Vehicular Access Restriction

On Street Facilities

- Class II Buffered Bicycle Lane
- Class II Bicycle Lane
- Class III Bike Route
- Railroad
- Corridor Segment
- Schools
- Parks
- Lakes & Streams



Envision 273: SR 273 Multimodal Corridor Plan
BICYCLE FACILITIES

Paper Size ANSI B

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US Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

Project No. 12560002
Revision No. -
Date September 2023

FIGURE 14

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Print date: 26 Sep 2023 - 15:21

Date source: City of Redding GIS, California State Parks, Esri, HERE, Garmin, SafeGraph, METINASA, USGS, Bureau of Land Management, EPA, NPS, USDA, California State Parks, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METINASA, USGS, Bureau of Land Management, EPA, NPS, USDA, City of Redding GIS, California State Parks, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METINASA, USGS, Bureau of Land Management, EPA, NPS, USDA, Created by: pheel

Passenger Rail Service

Passenger rail service is provided by Amtrak's Coast Starlight route at Redding Amtrak station in Downtown Redding on Yuba Street. The Coast Starlight connects Los Angeles, California to the south with Seattle, Washington via Redding and other nearby intermediate stops in the communities of Dunsmuir and Chico.

The Coast Starlight has infrequent service through Redding and arrives and departs in the middle of the night, with both northbound and southbound departure times between approximately 2:30 and 3:00 AM.

Image Source: www.srta.ca.gov



Transit Service

Transit service is provided by the Redding Area Bus Authority (RABA), which is administered by the City of Redding. RABA transports approximately 300,000 passenger trips a year on a fleet of 40 buses and vans. Transit service within the study area includes local and regional bus services, which are described below.



Image Source: www.cityofredding.org

Bus

RABA provides fixed route bus service in Redding, Shasta Lake, Anderson and surrounding unincorporated areas of Shasta County, Monday - Saturday. Bus routes servicing the study corridor neighborhoods include Routes 1, 2W Clockwise, 2W Counterclockwise, 2E, 3, 4, 5, 6N, 6S, 7, 9N, 9S, 11, 12, 14, 17, Anderson Commuter, Crosstown Express, School Express Morning, and School Express Afternoon.

Paratransit

RABA provides demand response service (ADA paratransit service) for persons with disabilities who are functionally unable to use fixed route bus service, Monday – Saturday.

Beach Bus

RABA provides bus service to Whiskeytown National Recreation Area generally between Memorial Day and Labor Day, excluding holidays.

Burney Express

Burney Express is a commuter bus service that operates three times each weekday between Redding and Burney.

Sunday Transit

ShastaConnect provides door to door transportation on Sundays when RABA doesn't run in Redding, Anderson, Shasta Lake and surrounding unincorporated areas of Shasta County.

Transit Amenities

Transit amenities include benches and shelters at bus stops. In addition, the quality of the transit stop is based on the accessibility and safety at the stop itself as well as the connectivity to the stop. Most of the transit stops along the SR 273 corridor do not have adequate amenities, and most of the stops located in the County do not have any connecting sidewalk infrastructure. The following photos show the variety of transit stop conditions along the corridor. All photos are sourced from Google (2023).

Transit Stops with No Amenities or Connecting Sidewalk Infrastructure



Southbound SR 273 within Segment 8 (left), and Northbound SR 273 within Segment 10 (right)

Transit Stops with Sidewalk Connectivity / No Amenities



Southbound SR 273 within Segment 7 (left), and Westside Road (Frontage Road to SR 273) within Segment 5 (right)

Transit Stops with Bench

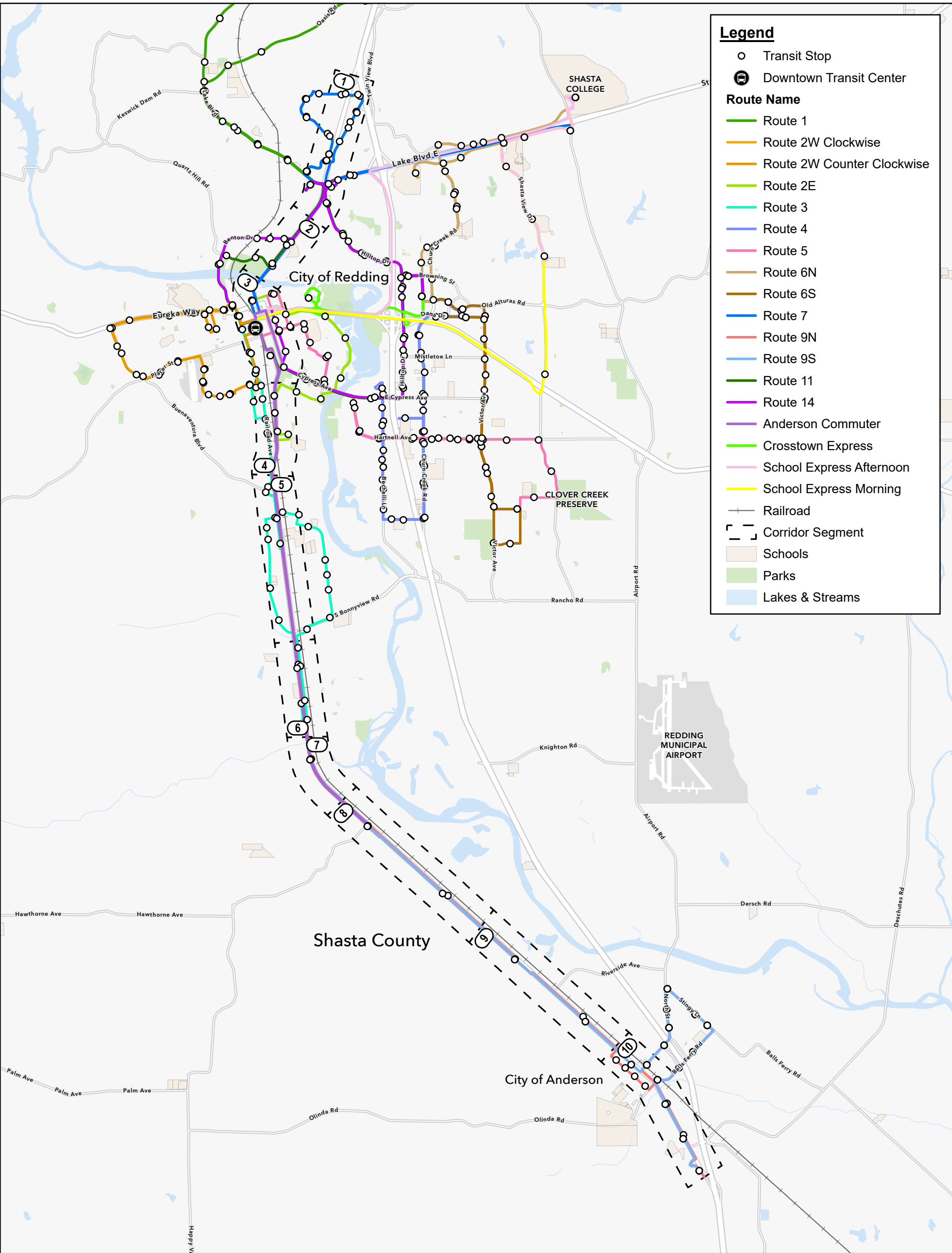


Southbound SR 273 within Segment 4

Transit Stops with Bench and Shelter



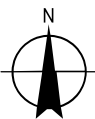
Southbound SR 273 within Segment 6 (left), and Northbound SR 273 within Segment 7 (right)



Envision 273: SR 273 Multimodal Corridor Plan

TRANSIT ROUTES AND STOPS

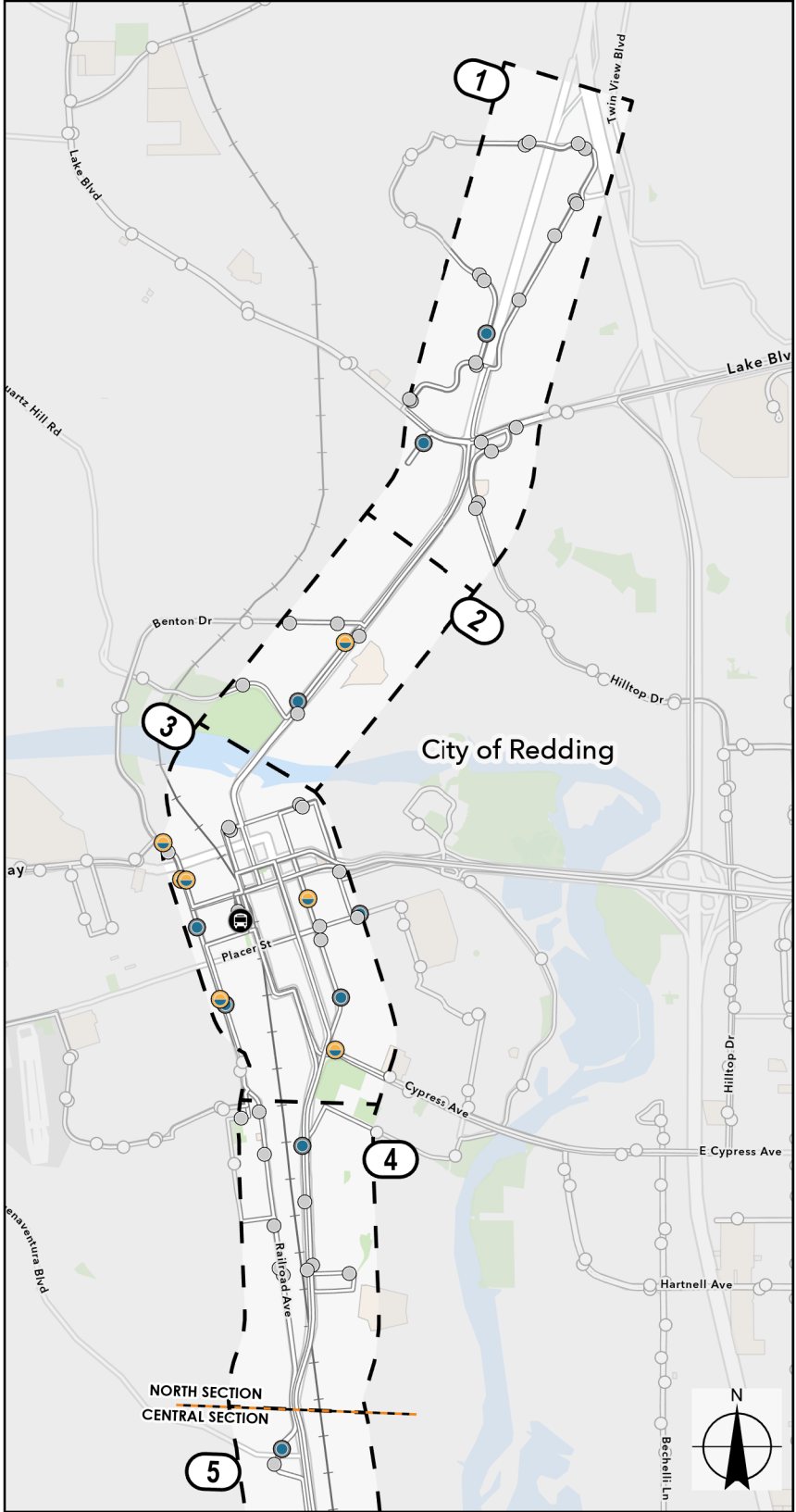
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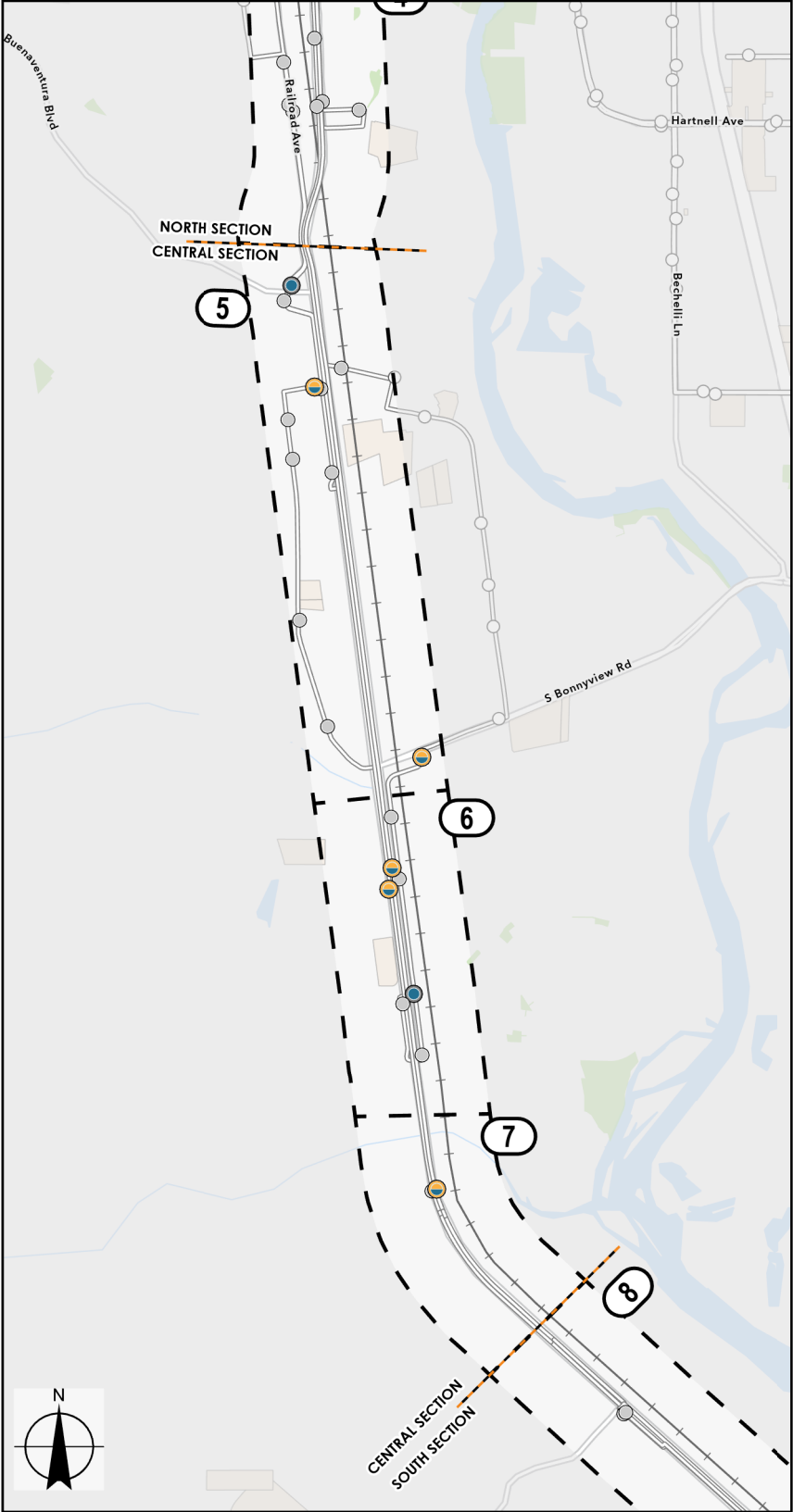
Project No. 12560002
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FIGURE 15

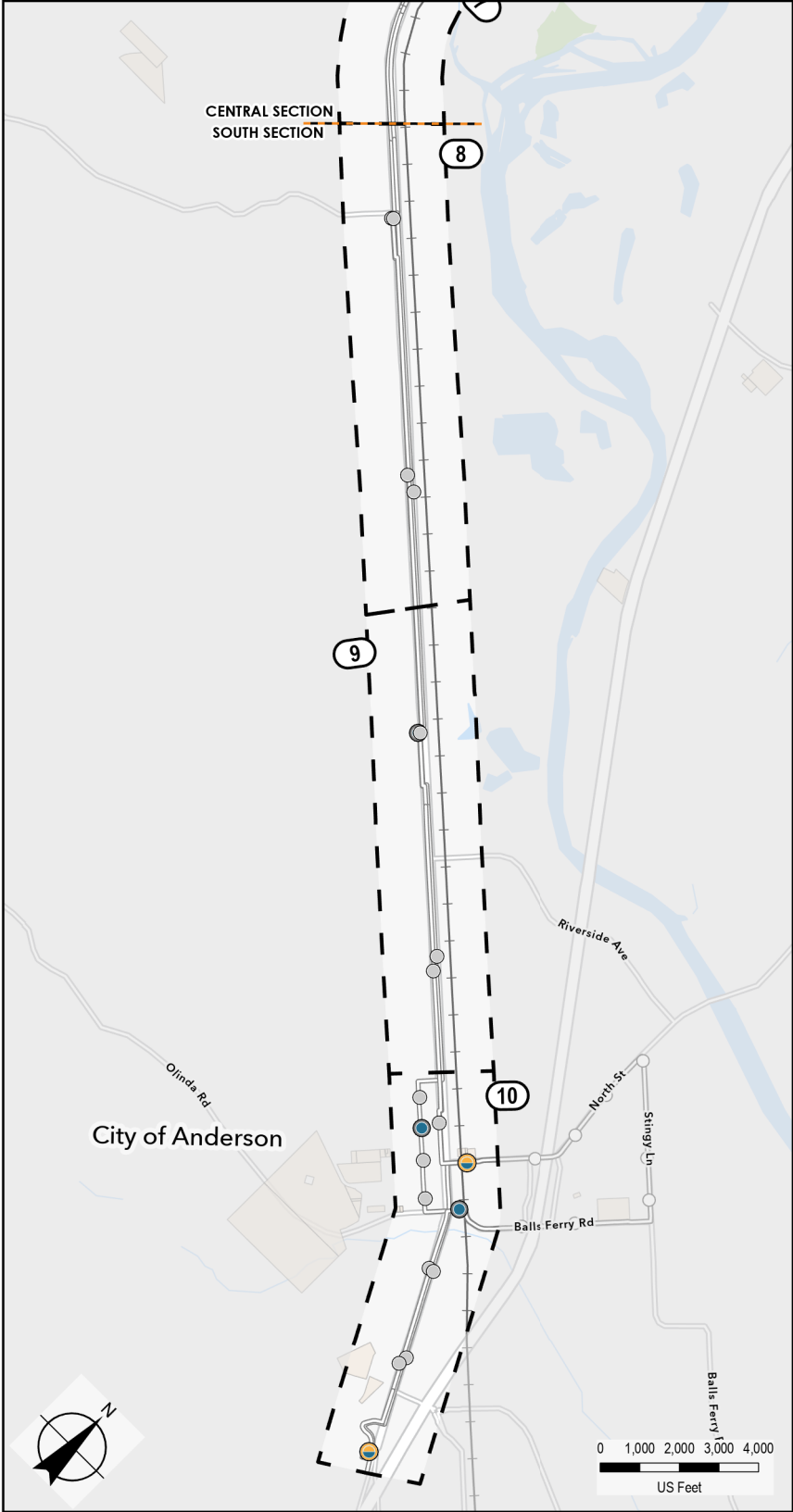
NORTH SECTION



CENTRAL SECTION



SOUTH SECTION

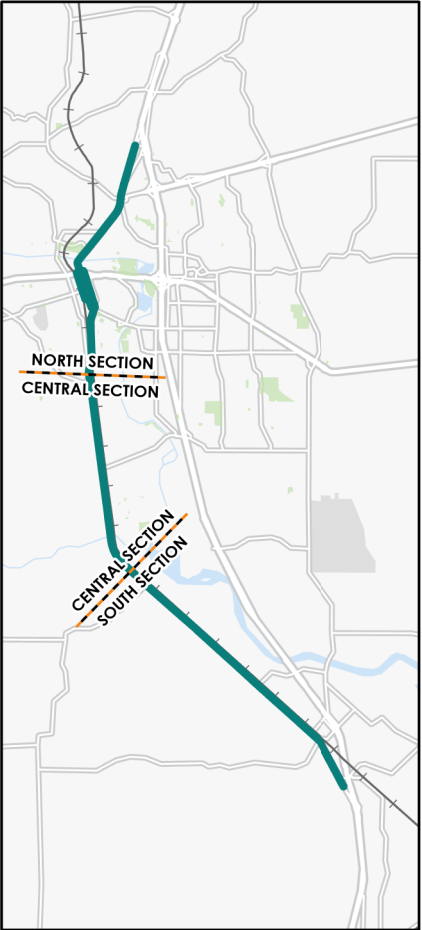


Legend

Transit Stop Amenities

- Bench and Shelter
- Bench only; no shelter
- No bench or shelter
- Stops Outside Study Area
- Downtown Transit Center
- Bus Routes
- Corridor Segment
- Railroad
- Schools
- Parks
- Lakes & Streams

LOCATOR MAP



Envision 273: SR 273 Multimodal Corridor Plan
TRANSIT STOP AMENITIES

Paper Size ANSI B

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US Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

Project No. 12560002
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Date September 2023

FIGURE 16

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Print date: 29 Sep 2023 - 13:36

Data source: City of Redding GIS, California State Parks, Esri, HERE, Garmin, SafeGraph, METINASA, USGS, Bureau of Land Management, EPA, NPS, USDA, California State Parks, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METINASA, USGS, Bureau of Land Management, EPA, NPS, USDA, City of Redding GIS, California State Parks, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METINASA, USGS, Bureau of Land Management, EPA, NPS, USARABA Routes & Stops: City of Redding, School Parcels: Shasta County
Created by: pheel

Table 7 *Multimodal Infrastructure Summary*

Segment:	1	2	3	4	5	6	7	8	9	10
Sidewalk Width directly adjacent to SR 273	5	5 to 12	5 to 12	6	None	None	None	None	None	None
Sidewalk Connectivity	Minimal	Good	High	Good	None	None	None	None	Fair	Minimal
Bike Facilities (Type)	Class II, south of Lake Boulevard	Class II	Class II	Class II	Class II	Class III	Class III	Class III	Class III	Class III
Transit Stops	Not directly on SR 273; located on adjacent streets	Yes, and on adjacent streets	Not directly on SR 273; located on adjacent streets	Yes, and on adjacent streets	Not directly on SR 273; located on adjacent streets	Yes, and on adjacent streets	Yes	Yes, and on adjacent streets	Yes, and on adjacent streets	Yes, and on adjacent streets
Transit Stop Conditions	Poor	Fair	Fair	Fair	Poor	Fair	Fair	Poor	Poor	Fair
Presence of Amenities (Shelter or Bench) at Transit Stop?	Typically no bench/shelter	Typically no bench/shelter	Typically no bench/shelter	Some with bench	Typically no bench/shelter	Some with bench/shelter	Some with bench/shelter	No bench/shelter	Some with bench	Some with bench/shelter

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4 CORRIDOR SAFETY

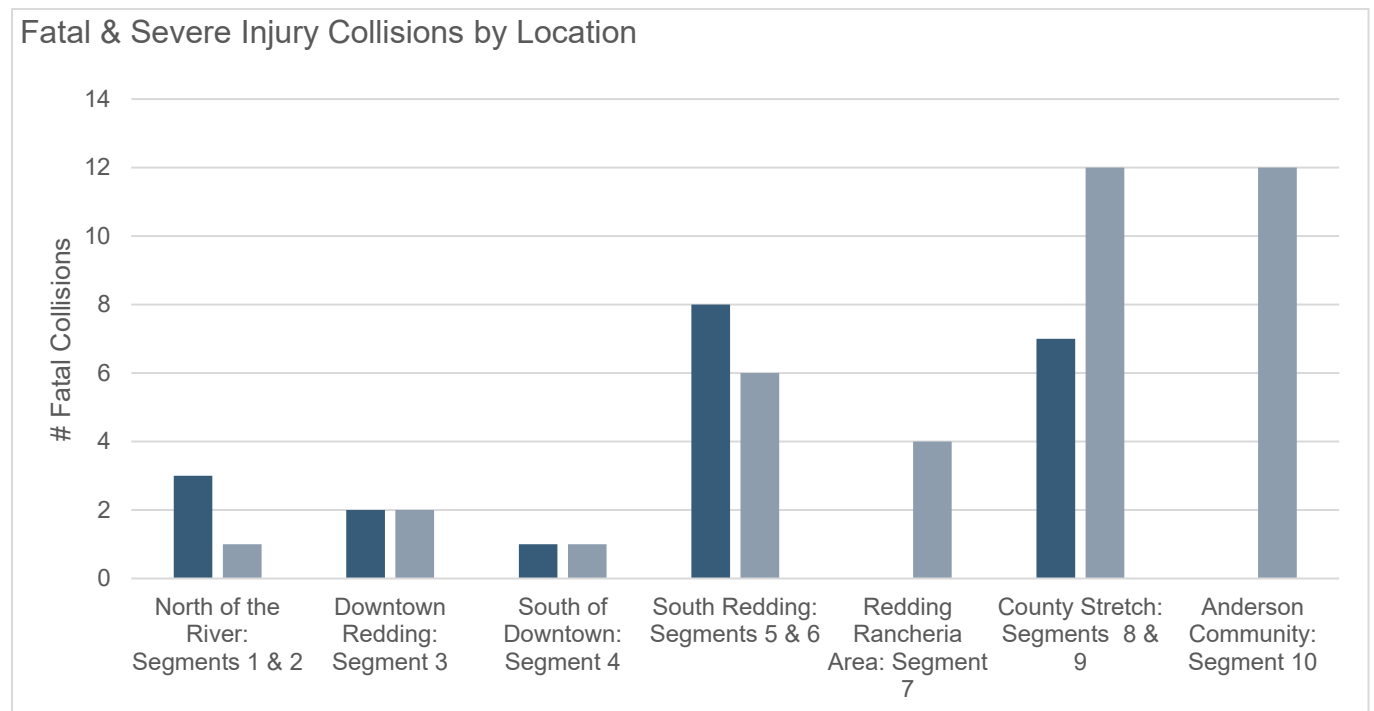
Collision analysis for Envision 273 Plan was conducted based on historical collision data within the project limits for the most recent and complete 5 years (January 1, 2018, to December 31, 2022). This data was collected from the California Highway Patrol's Statewide Integrated Traffic Records System (SWITRS). During this period, a total of 512 collisions were reported within the project study area. The limits for collision analysis on this project include State Route (SR) 273 from its northernly terminus at Interstate 5 (I-5) in Redding to its southernly terminus at I-5 in Anderson. All collisions were classified location, severity, collision type, primary collision factor violation category, and pedestrian and bicycle collisions. A comprehensive summary of corridor collisions within the analysis period is provided in the Appendix.

Overview

Over the five-year period, approximately 44 percent of all collisions did not result in any injury (collisions identified as property damage only). Of the injury collisions, there were 21 fatalities (4-percent of all collisions) and 38 severe injuries (8-percent of all collisions). Table 8 summarizes the five-year collision history for the study corridor between 2018 and 2022. Figure 17 presents a heat map of total collisions and the locations of fatal or severe injury collisions for the study area.

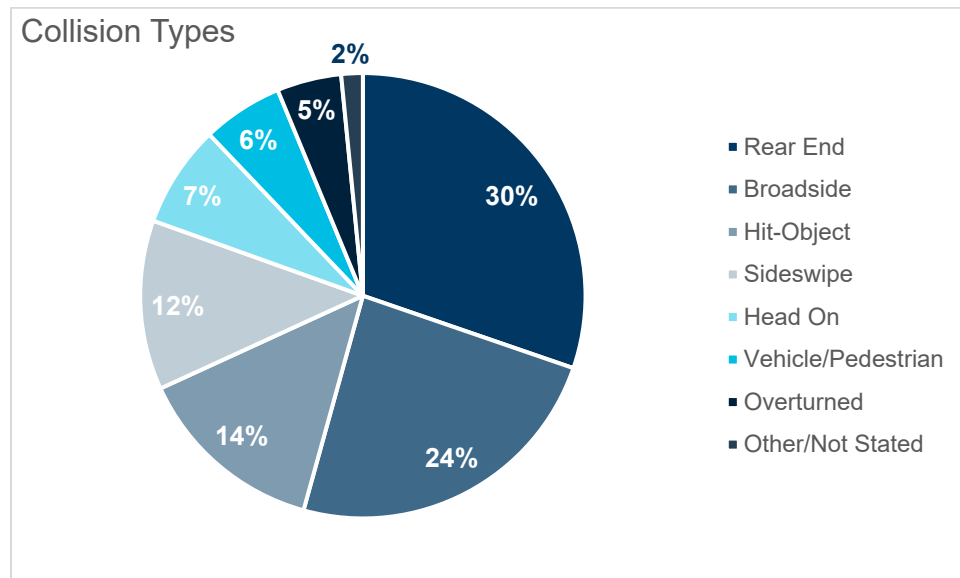
Fatal & Severe Injury Collisions

The highest number of fatal collisions occurred between Downtown Redding and the City of Anderson, where the speed limits are higher, and the total roadway cross-section is wider, than other locations along the corridor. Severe injury collisions are concentrated in the southern portions of the corridor study area.



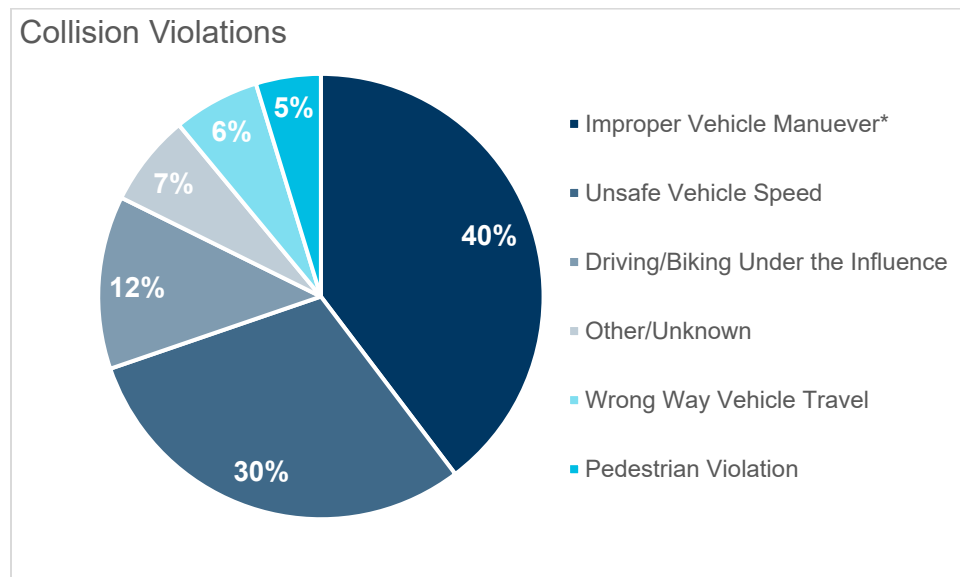
Collision Types

Rear ends and broadside collisions were the most common collision types, representing over half of the collisions reported.



Collision Violations

The top violation categories of the reported collisions were unsafe speed and improper vehicle maneuvers (*including improper turning, passing, and starting/backing, among others).



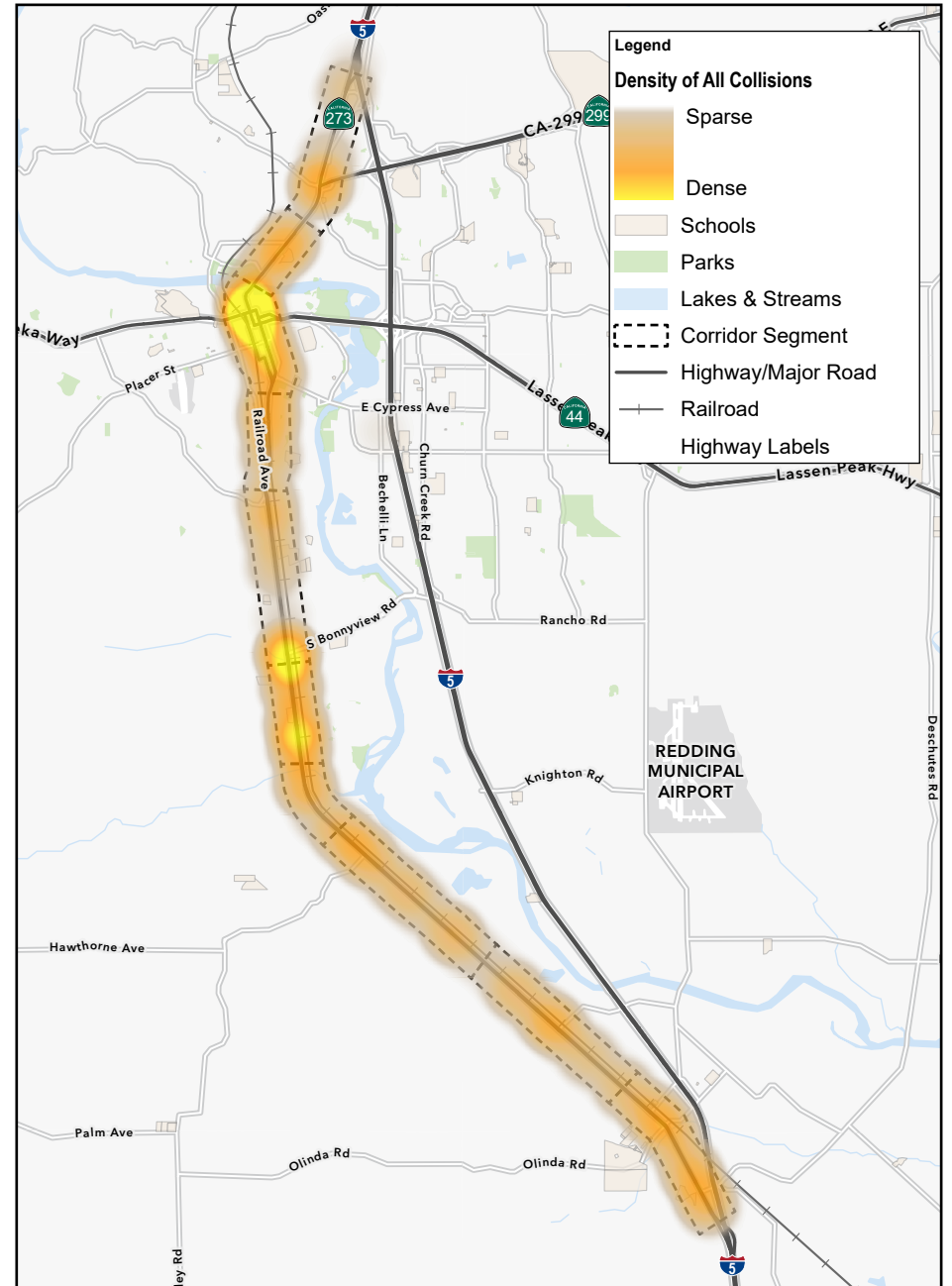
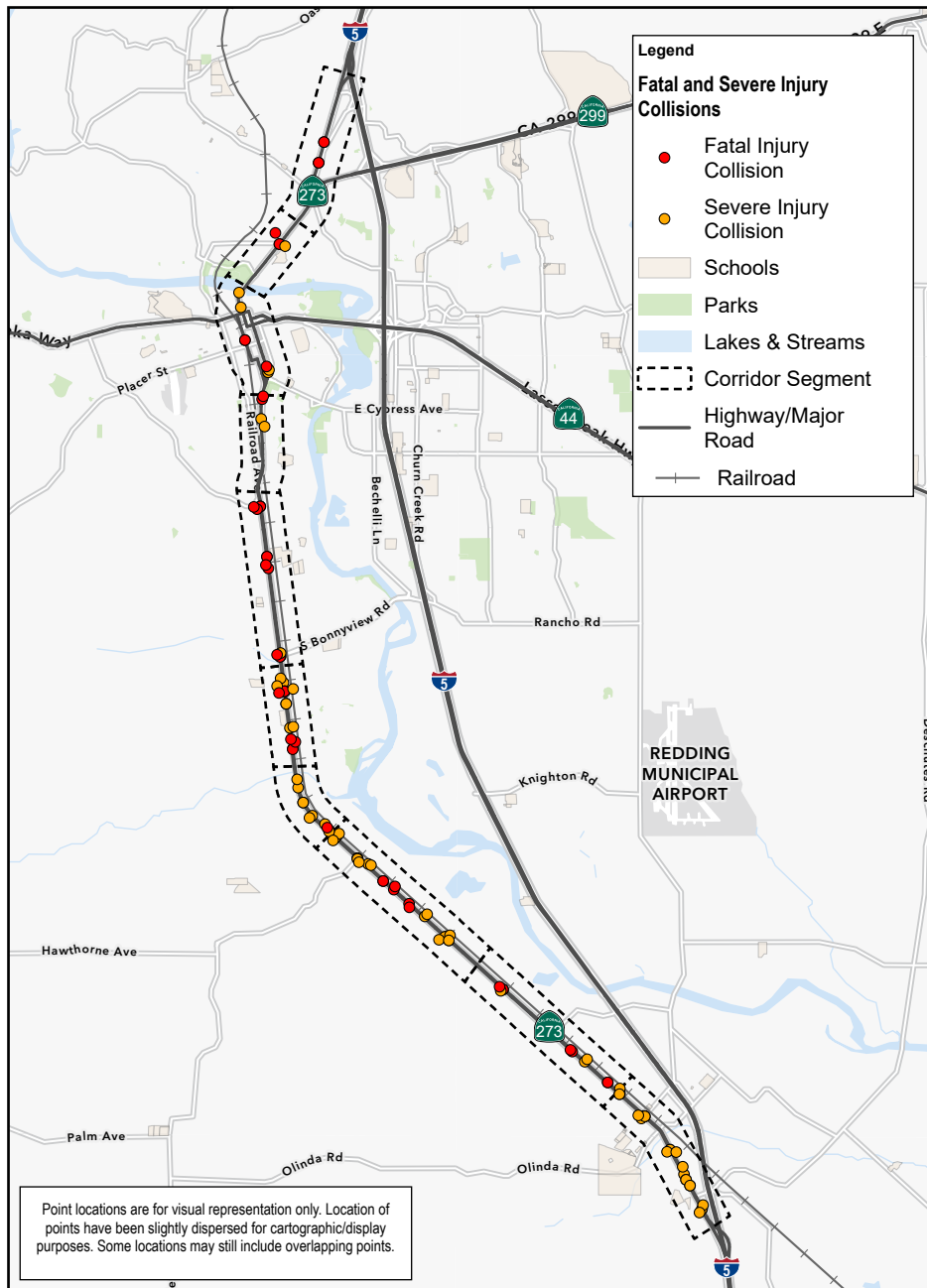
Ongoing Trends – 2023 Fatalities

The decrease in total collisions in 2022 shown in the collision data summary table could be attributed to a variety of factors. However, this data does not suggest that safety is not a primary concern along the corridor, as severe and fatal collisions continue to occur along the corridor. Just within the month of September 2023, two pedestrian fatalities occurred on SR 273.

One of these fatal collisions occurred on a Thursday around 8:20 PM, when a driver traveling southbound on SR 273 hit a pedestrian just north of the intersection with Redding Rancheria Road. There is no crosswalk at the southbound approach to this intersection. The second fatal collision occurred just the following morning (Friday) around 6:16 AM, when a driver traveling northbound on SR 273 hit a pedestrian just south of the intersection with Girvan Road. There is a crosswalk at the northbound approach to this intersection.

Table 8 5-Year Collision Summary by Segment

ID	Segment Extent (Approximate)	By Severity					By Type							Violation							By Year				
		Fatal	Severe Injury	Injury (Other Visible)	Injury (Complaint of Pain)	Property Damage Only	Head-On	Sideswipe	Rear End	Broadside	Hit Object	Vehicle/Pedestrian	Other	Unsafe Speed	Vehicle Driver Error	Wrong Way	Pedestrian	Traffic Signal and Sign	DUI/BUI	Other	2018	2019	2020	2021	2022
1	I-5 Ramps to south of Lake Blvd	2		7	10	10	3	1	9	12	3			10	7	2	1	6	2	1	10	5	2	9	3
2	South of Lake Blvd to Sacramento River	1	1	7	12	12	1	4	13	2	9	1	1	15	6	6	1	2	2	1	5	8	8	10	2
3	Sacramento River to south of Cypress Ave	2	2	26	22	48	10	16	24	26	12	4		29	28	8	6	14	9	6	18	20	22	30	10
4	South of Cypress Ave to north of Buenaventura Blvd	1	1	6	10	12	2	4	6	10	4	1		5	7	3	2	6	5	2	5	7	5	8	5
5	North of Buenaventura Blvd to south of S Bonnyview Rd	5	1	18	10	25	4	11	20	10	7	2	1	20	9	4	3	7	11	5	11	13	18	10	7
6	South of S Bonnyview Rd to south of Girvan Rd	3	5	13	11	23	4	4	32	9	2	2		28	9	2	2	8	5	1	11	15	12	12	5
7	South of Girvan Rd to Metz Rd		4	6	6	8	2	2	7	5	2	3		4	7		3		4	6	3	4	4	11	2
8	Metz Rd to south of Latona Rd	4	10	11	10	26	2	7	9	20	9	8	2	13	27	2	3	2	9	5	5	15	15	12	14
9	South of Latona Rd to north of Briggs St	3	2	7	12	23	3	6	14	6	12	3	1	13	20		1	4	5	4	6	10	8	15	8
10	North of Briggs St to I-5 Ramps		12	12	11	36	7	6	21	23	10		2	16	22	5	2	9	11	6	9	8	18	19	17



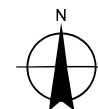
Envision 273: SR 273 Multimodal Corridor Plan

STUDY AREA COLLISION OVERVIEW (ALL CRASHES, 2018 TO 2022)

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Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet



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FIGURE 17

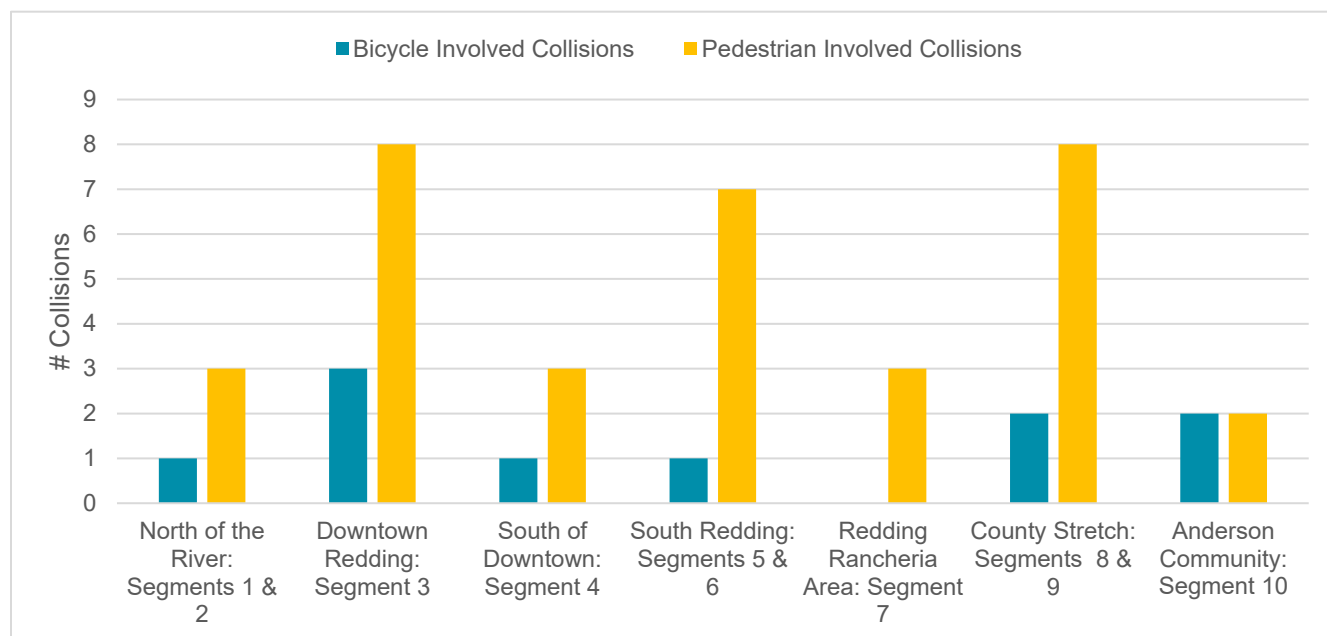
Bicycle & Pedestrian Collisions

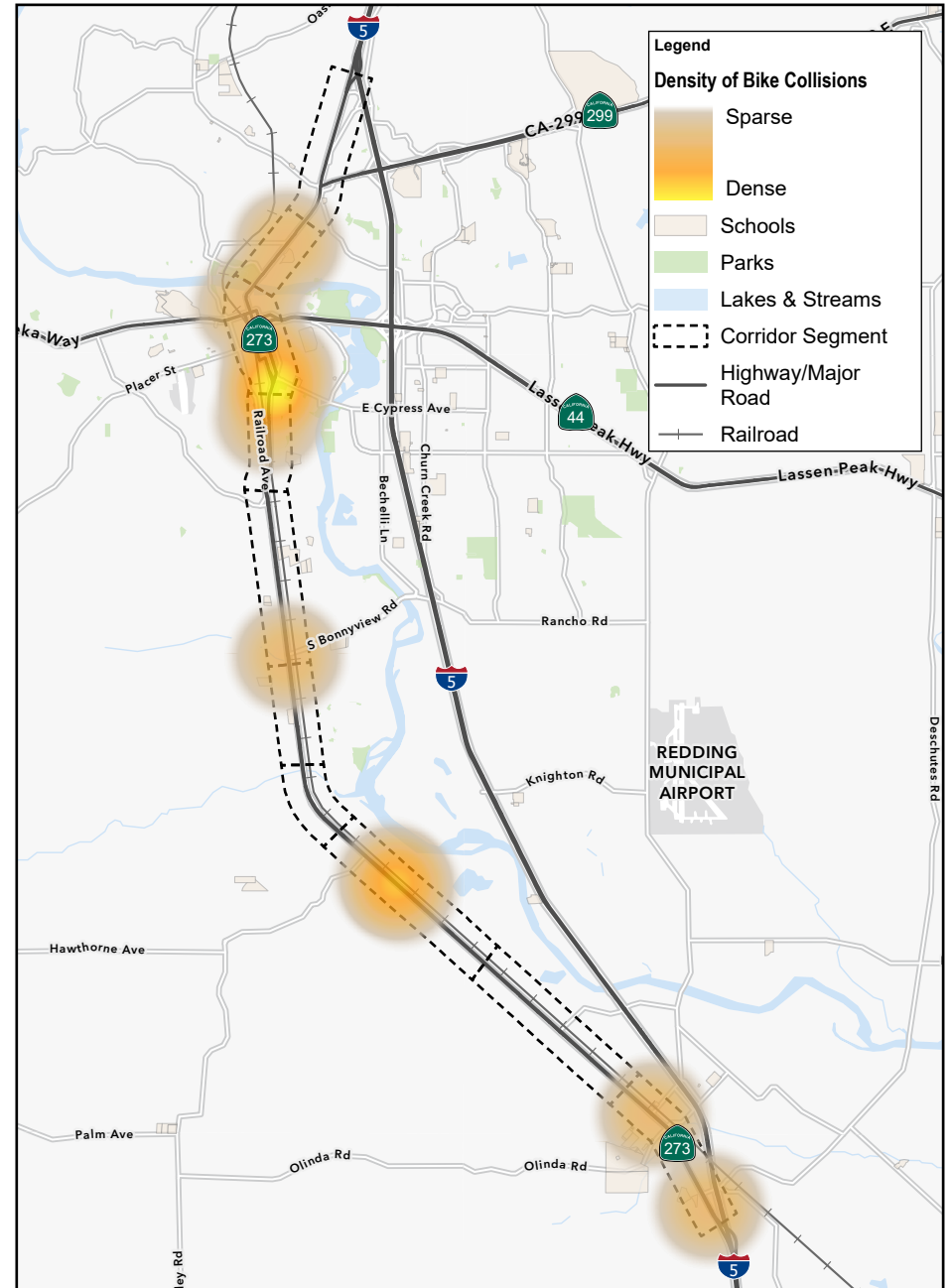
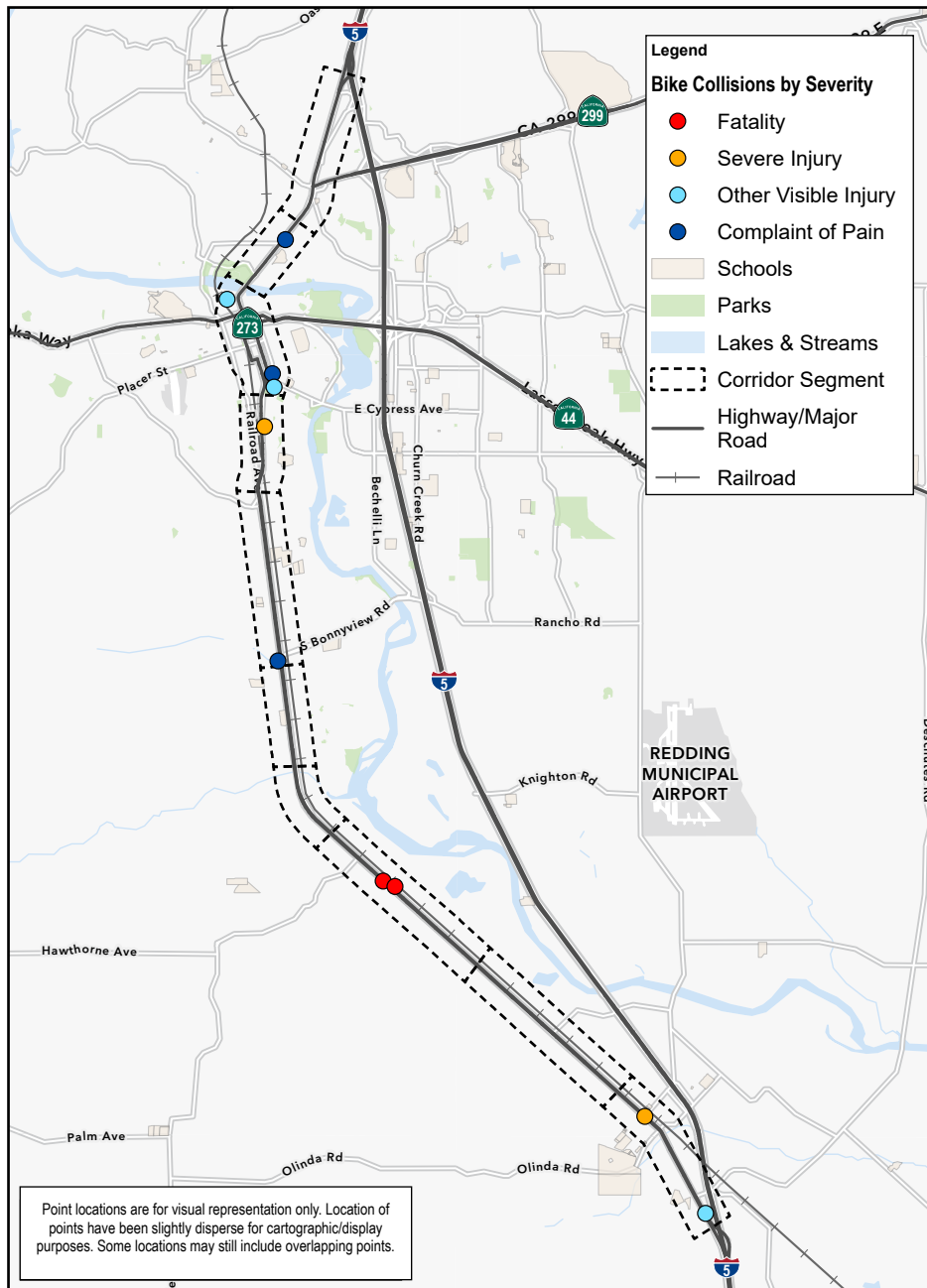
Within the five-year analysis period, there were 10 collisions that involved a bicyclist and 34 collisions that involved a pedestrian. Of those, two resulted in bicyclist fatalities and 12 resulted in pedestrian fatalities. Both bicycle and pedestrian collision hotspots are in Downtown Redding. Table 9 presents a summary of bicycle and pedestrian collisions per segment. Figure 18 and Figure 19 present the collision locations and hot spots of bicycle and pedestrian collisions, respectively.

As shown, bicycle crashes are concentrated in the southern portion of Downtown Redding near Cypress Avenue, while pedestrian crashes are concentrated in the central and northern portions of Downtown Redding. However, the two bicyclist fatalities were located within Segment 8, both occurring at or near Thomas Road, and the highest number of pedestrian fatalities (four) occurred within Segment 5. *Note: Additional bicycle or pedestrian fatalities occurring after 2022 are not included in this analysis. However, as described above in “Ongoing Trends – 2023 Events”, these types of collisions continue to occur.*

Table 9 *Bicycle & Pedestrian Collisions by Segment*

ID	Segment Extent (Approximate)	Bicycle Involved	Bicyclists Fatalities	Pedestrian Involved	Pedestrian Fatalities
1	I-5 Ramps to south of Lake Blvd			1	1
2	South of Lake Blvd to Sacramento River	1		2	
3	Sacramento River to south of Cypress Ave	3		8	1
4	South of Cypress Ave to north of Buenaventura Blvd	1		3	1
5	North of Buenaventura Blvd to south of S Bonnyview Rd	1		5	4
6	South of S Bonnyview Rd to south of Girvan Rd			2	1
7	South of Girvan Rd to Metz Rd			3	
8	Metz Rd to south of Latona Rd	2	2	5	2
9	South of Latona Rd to north of Briggs St			3	2
10	North of Briggs St to I-5 Ramps	2		2	

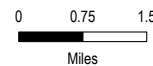




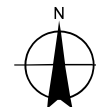
Envision 273: SR 273 Multimodal Corridor Plan

STUDY AREA COLLISION OVERVIEW (BIKE CRASHES, 2018 TO 2022)

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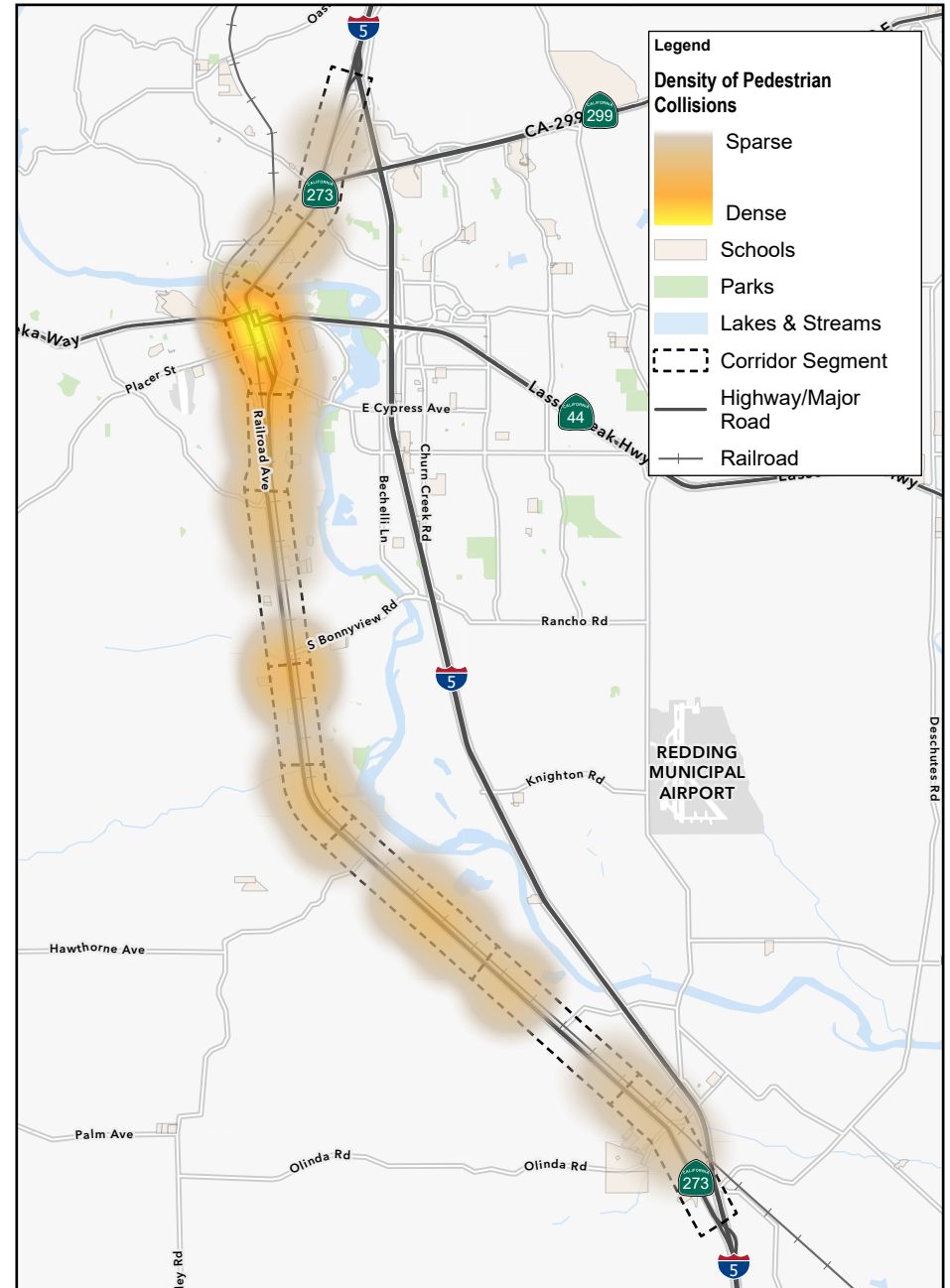
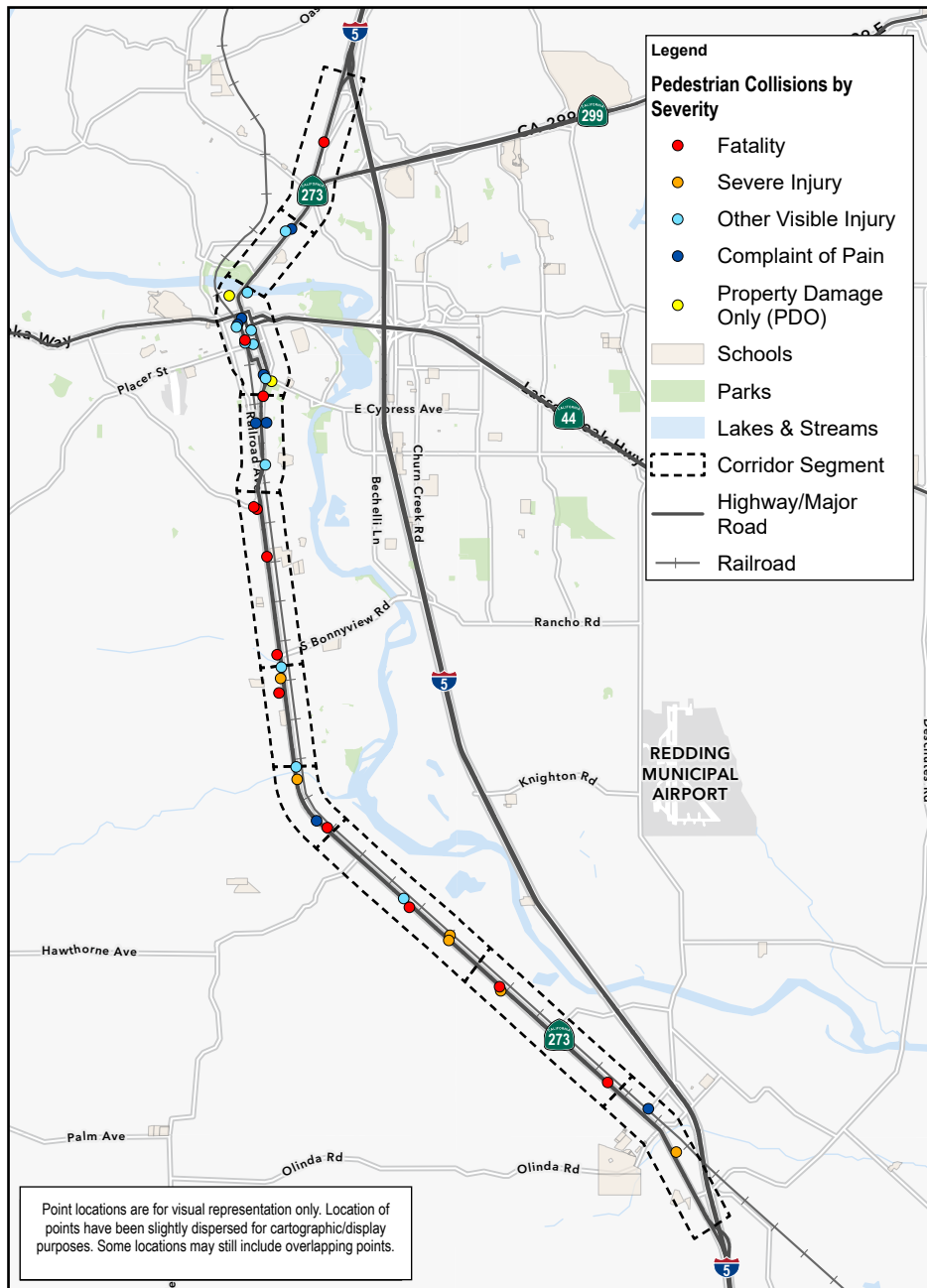


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Project No. 12560002
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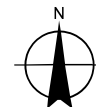
FIGURE 18



Envision 273: SR 273 Multimodal Corridor Plan

STUDY AREA COLLISION OVERVIEW (PEDESTRIAN CRASHES, 2018 TO 2022)

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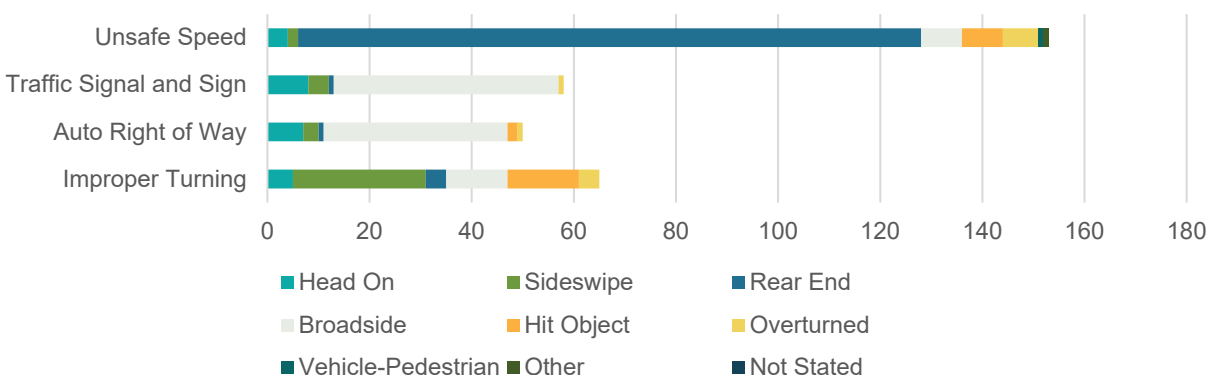
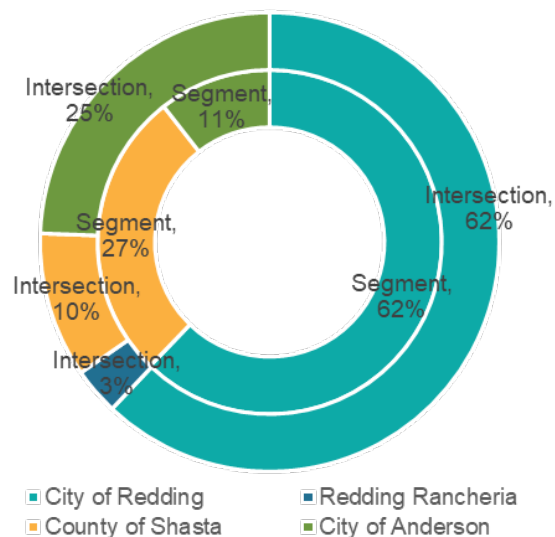
Project No. 12560002
Revision No. -
Date September 2023

FIGURE 19

Collisions at Intersections

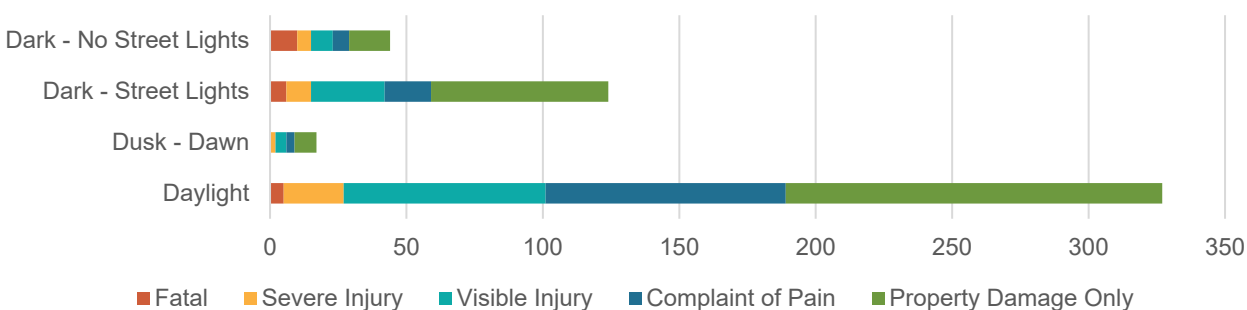
Of the 512 collisions on SR 273 between 2018 and 2022, around 65-percent were at intersections. For this analysis, an intersection collision was identified as any collision within 50 feet of an intersection or a multi-vehicle, rear-end collision within 150 feet of an intersection. The graphic to the right shows the collisions by location along the SR 273 corridor. As displayed, most of the collisions along the corridor occurred in the City of Redding.

The graphic below shows the breakdown of collision types by violation categories for collisions that occurred at an intersection along the study corridor.



Non-Daylight Collisions

Within the five-year analysis period, most collisions occurred during daylight hours. However, more fatal collisions occurred during non-daylight hours (i.e., during dusk, dawn, or dark conditions). Of 21 total fatalities, six occurred during dark conditions where streetlights were recorded to be present, and 10 occurred during dark conditions where streetlights were not recorded to be present. The following graphic shows the breakdown of collision severities by lighting conditions.



The following tables summarize collision severity and location (by segment) of collisions that occurred during non-daylight conditions. As shown, most non-daylight collisions occurred within the segments south of South Bonnyview Road towards the southern portion of the City of Redding and through the County segments north of Anderson.

Table 10 Collision Severity by Lighting Conditions

	Fatal	Severe Injury	Visible Injury	Complaint of Pain	Property Damage Only
Daylight	24%	58%	65%	77%	61%
Dusk or Dawn	0%	5%	4%	3%	4%
Dark - Street Lights	29%	24%	24%	15%	29%
Dark - No Street Lights	48%	13%	7%	5%	7%

Table 11 Non-Daylight Collisions by Segment

Segment	Segment Extent (Approximate)	% Occurred during Non-Daylight Conditions	Total Collisions (2018-2022)
1	I-5 Ramps to south of Lake Blvd	31%	29
2	South of Lake Blvd to Sacramento River	21%	33
3	Sacramento River to south of Cypress Ave	30%	100
4	South of Cypress Ave to north of Buenaventura Blvd	33%	30
5	North of Buenaventura Blvd to south of S Bonnyview Rd	34%	59
6	South of S Bonnyview Rd to south of Girvan Rd	47%	55
7	South of Girvan Rd to Metz Rd	46%	24
8	Metz Rd to south of Latona Rd	43%	61
9	South of Latona Rd to north of Briggs St	30%	47
10	North of Briggs St to I-5 Ramps	44%	71

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5 MOBILITY TRENDS

This chapter highlights existing mobility trends for all travel modes within the corridor study area. Mobility trend data for vehicle, bicycle, pedestrian, and freight travel modes are based on Replica estimates for typical weekday (Thursday) conditions during Fall 2022. Replica is a “big data” platform that provides traffic volume estimates based on a variety of sources, including mobile location data. Mobility trend data for these travel modes are presented and summarized based on the overall distribution of trips, rather than actual volumes of trips, within the study area.

Mobility trend data for transit trips is based on ridership survey data for select dates during March and April 2023, provided by RABA. The ridership summary data includes an average of weekday ridership (onboard and offboard) for the routes provided.

Mode Split & Auto Ownership

Mode share is the percentage of travelers or of trips made using available forms of transportation (walking, bicycling, public transportation, private automobile, or freight). Mode share for the percentage of travelers is estimated based on Replica estimates for typical weekday (Thursday) conditions during Fall 2022 for each study segment.

Replica Fall 2022 weekday data was reviewed using two approaches. The first approach examines trips that occurred on SR 273 using a sample set of locations distributed along the study corridor. The second considers trips that occur within the study segment boundaries and represents trips made to destinations on either SR 273. The later approach includes some trips that may not have occurred directly on SR 273, as the study segment boundaries extend for ½ mile on either side of the corridor centerline.

Both approaches are useful in understanding how individuals travel within the study area. While this Plan does not directly make recommendations for improvements beyond SR 273 right-of-way (ROW), the increase in non-auto trips within study segments compared to the highway suggests the presence of locally serving destinations within the vicinity of the study corridor that may currently be inaccessible to additional travellers due to the presence of SR 273. In addition, Replica data shows a high level of non-auto trips using SR 273 frontage roads, including Westside Road and Eastside Road.

The results of the modal split assessment are summarized in the following table. As shown, automobile trips (including both single-occupancy and multiple occupant trips) far outweigh non-auto trips, with approximately 11-times more trips made by a car than by bicycle or foot. However, when evaluating trips occurring within study segment boundaries, the proportion of trips made by foot increase by four-times.

Table 12 Study Area Mode Split (Excluding Transit Trips)

Mode	% Calculated Using	
	SR 273 Network Links ¹	Corridor Segments ²
Auto	88%	80%
Freight	7%	7%
Bike	2%	3%
Walk	2%	8%
Other	0%	2%

¹ Includes trips for a sample set of network links on SR 273, only

² Includes trips on all network links within study segments

The results of the household private vehicle availability assessment is summarized below. As shown, approximately 7-percent of trips made within the corridor study area were made by individuals without household access to a private automobile. Of those trips with origins or destinations within study segments, the majority of trips were made by walking and biking.

Table 13 Private Auto Availability

Private Vehicle Availability	% Calculated Using		Average
	SR 273 Network Links ¹	Corridor Segments ²	
No vehicles	4%	10%	7%
One vehicle	21%	20%	20%
Two vehicles	37%	36%	37%
Three+ vehicles	36%	32%	34%
No data	2%	2%	2%

¹ Includes trips for a sample set of network links on SR 273, only

² Includes trips on all network links within study segments

Table 14 Mode Split for Non-Auto Owners

Mode	Share		
	Origin	Destination	Pass-Through
Walking	37%	37%	8%
Biking	30%	31%	51%
Other	17%	17%	-
Auto passenger	14%	13%	34%
Taxi/TNC	2%	2%	7%

Trip Purposes

Trip purposes were calculated for all trips made to destinations within the study segments. These values include both trips made to destinations directly on SR 273 as well as on parallel streets within the segment boundaries (i.e., not directly located on SR 273), as the study segments include a 1/2 -mile buffer on either side of the study corridor. Trip purposes, as defined by Replica, include:

- Home includes all trips to a person's own home.
- Work includes all trips that ended at a person's workplace (for example, return trips from lunch), not just commute trips.
- Lifestyle trips include the following categories:
 - Eat includes all trips to restaurants.
 - Social includes all trips to visit someone else's home.
 - Shop includes all trips to gas stations, grocery stores, post offices, pharmacies and drug stops, retail shops, among others.
- Commercial includes all trips by medium and heavy trucks for deliveries and other commercial purposes.
- Recreation includes trips to recreational destinations.
- Other trips include trips made to schools, for errands, lodging, among others.

As shown in the following table, most trip purposes for trip destinations within the study segments are for lifestyle purposes (to shop, eat, or run errands), which reflects the presence of retail located along the corridor. Work trips are the second highest across most segments, with most work destinations occurring in Segment 3 (Downtown Redding), Segment 7 (near Redding Rancheria), and Segment 9 (north of Downtown Anderson). Home trips are also relatively high, accounting for portions of the segments that include residential locations.

Table 15 Trips by Purpose to Destinations within Study Segments

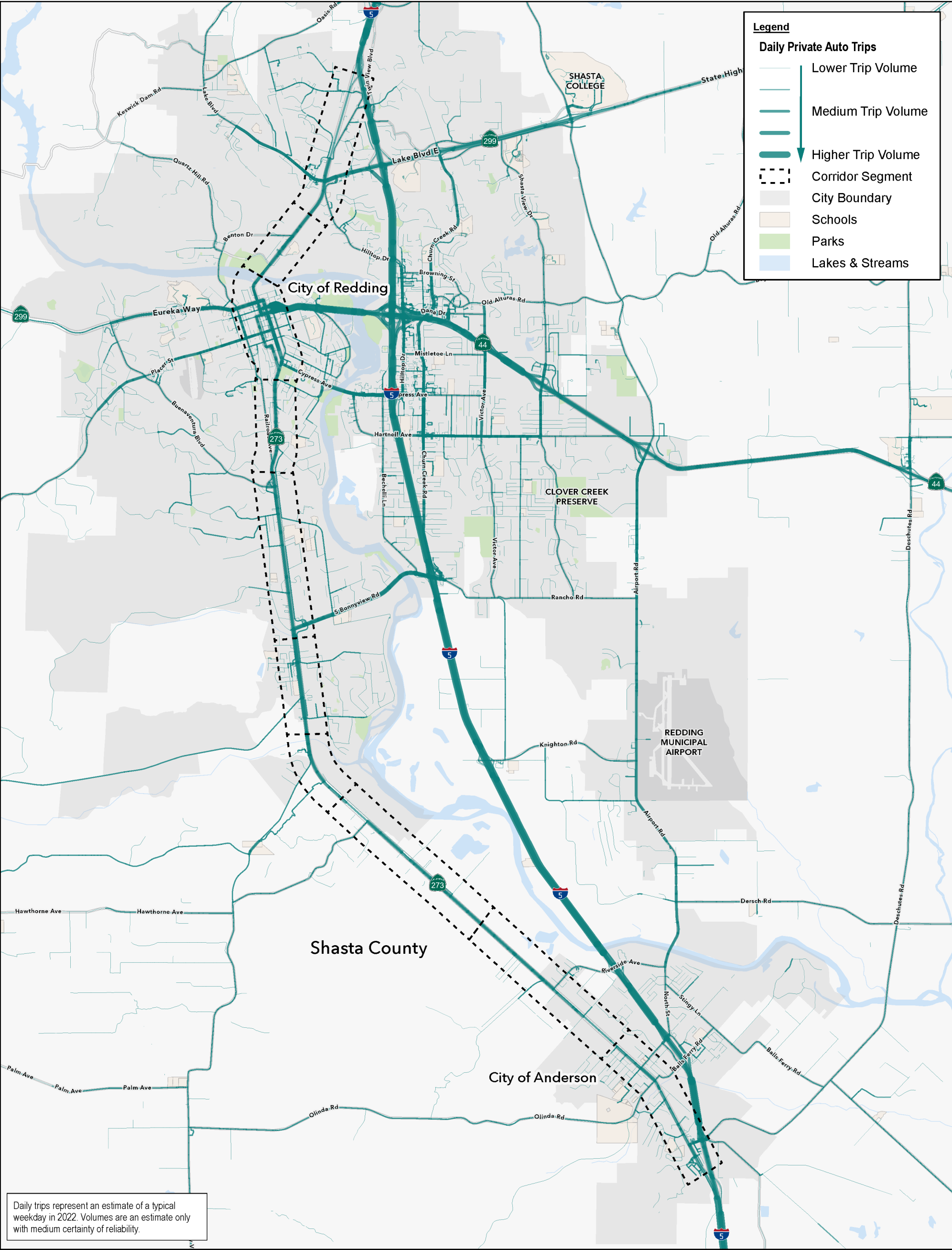
Segment Destination	Home	Work	Lifestyle*	Commercial	Recreation	Other
1	11.7%	9.4%	16.9%	20.5%	8.8%	11.6%
2	6.4%	1.8%	3.0%	3.0%	3.9%	17.0%
3	20.7%	46.5%	31.8%	17.5%	37.8%	14.6%
4	15.6%	9.7%	8.0%	7.7%	7.0%	9.1%
5	8.2%	5.8%	7.9%	9.7%	4.3%	14.8%
6	8.7%	4.2%	5.2%	7.6%	4.5%	9.1%
7	0.6%	2.0%	1.1%	1.2%	13.9%	-3.6%
8	3.0%	2.1%	1.0%	4.9%	1.1%	4.8%
9	5.7%	5.5%	1.5%	15.8%	2.0%	5.1%
10	19.4%	13.0%	23.6%	12.1%	16.7%	17.6%

*Lifestyle includes trips made for shopping, eating, or errand purposes.

Mobility Trends

Mobility trends are summarized below and illustrated in the following figures. Trip distributions are based on estimates and are intended to provide an illustration of the distribution of trips by mode, rather than specific information related to trip volumes.

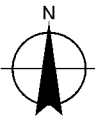
- **Vehicle Mobility Trends:** Vehicle trips are dispersed throughout the study area based on the location and density of residential, retail, and work destinations. Volumes are the highest near Downtown Redding, which provides connections to Interstate 5 via SR 44.
- **Bicycle Mobility Trends:** Bicycle trips are concentrated in Downtown Redding where there is a higher presence of bicycle infrastructure and connections to the trail network and recreational paths. However, bicycle trips occur within each segment along the corridor, regardless of the existence of bicycle infrastructure.
- **Pedestrian Mobility Trends:** Pedestrian trips are concentrated near Downtown Redding and Anderson. South of Downtown Redding and in the County, minimal amounts of trips are made by walking. However, there is a slight increase in trip proportions within Segment 6 between South Bonnyview Road and Girvan Road.
- **Transit Mobility Trends:** Transit trips, based on boarding and alighting 2023 data provided by RABA. Most transit trips start and end in the City of Redding, with the highest concentration occurring within Downtown Redding.
- **Freight Mobility Trends:** Freight trips occur on major roadways classified as truck routes, including SR 273, Interstate 5, SR 44, SR 299, as well as major arterials.



Envision 273: SR 273 Multimodal Corridor Plan

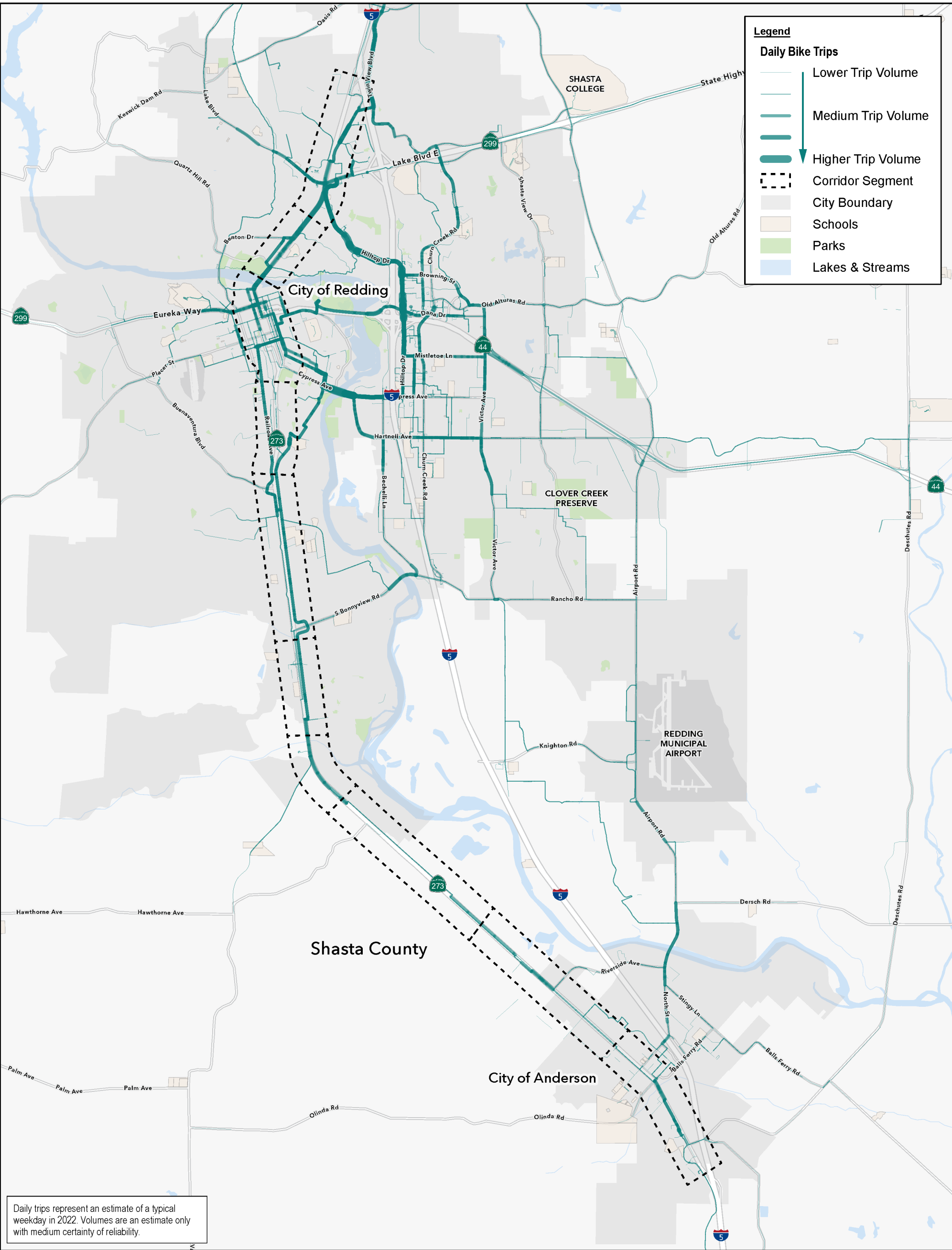
PRIVATE AUTO VEHICLE MOBILITY TRENDS

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US Feet
Map Projection: Lambert Conformal Conic
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Grid: NAD 1983 StatePlane California I FIPS 0401 Feet



Project No. 12560002
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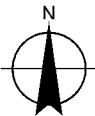
FIGURE 20



Envision 273: SR 273 Multimodal Corridor Plan

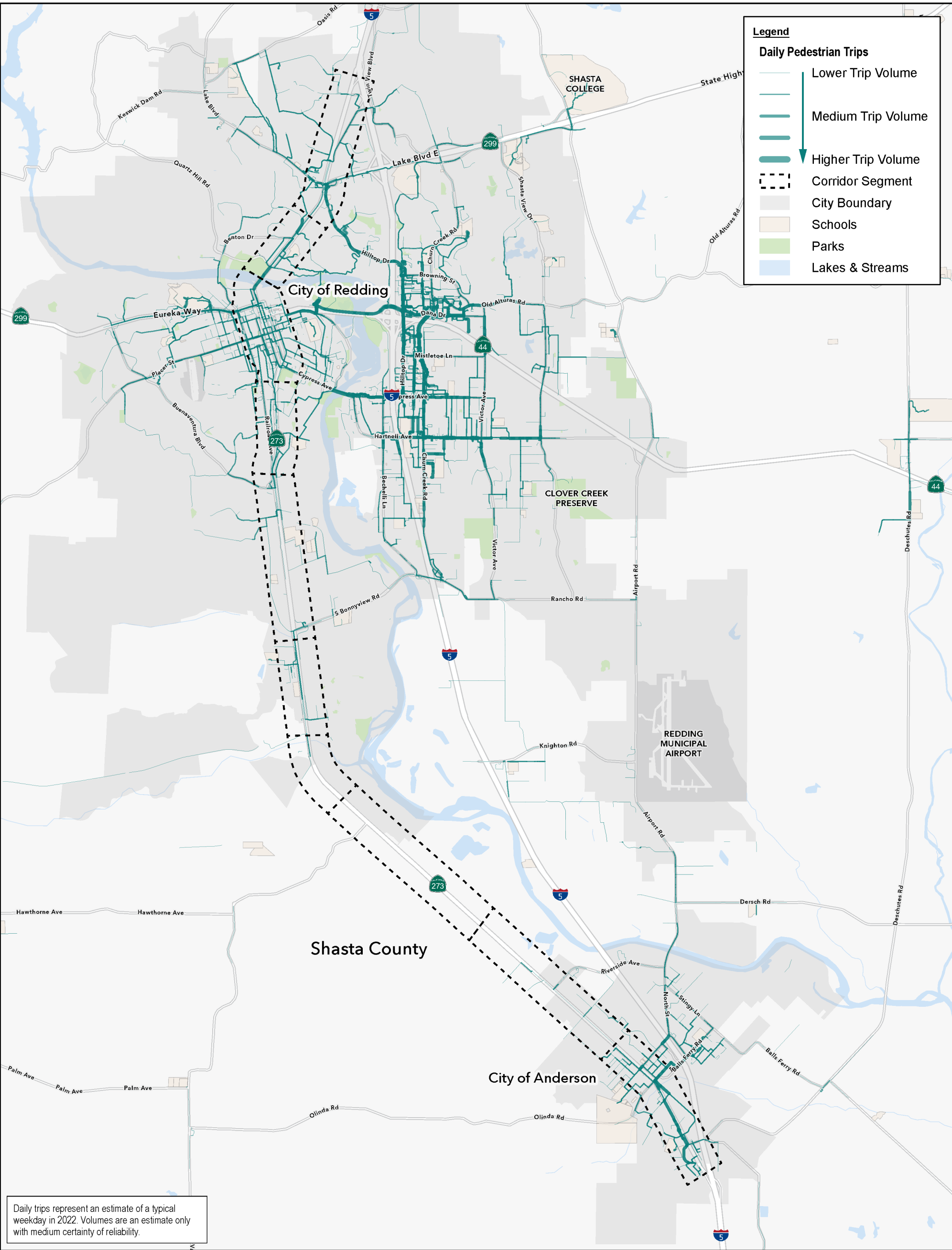
BICYCLE MOBILITY TRENDS

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Revision No. -
Date September 2023

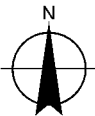
FIGURE 21



Envision 273: SR 273 Multimodal Corridor Plan

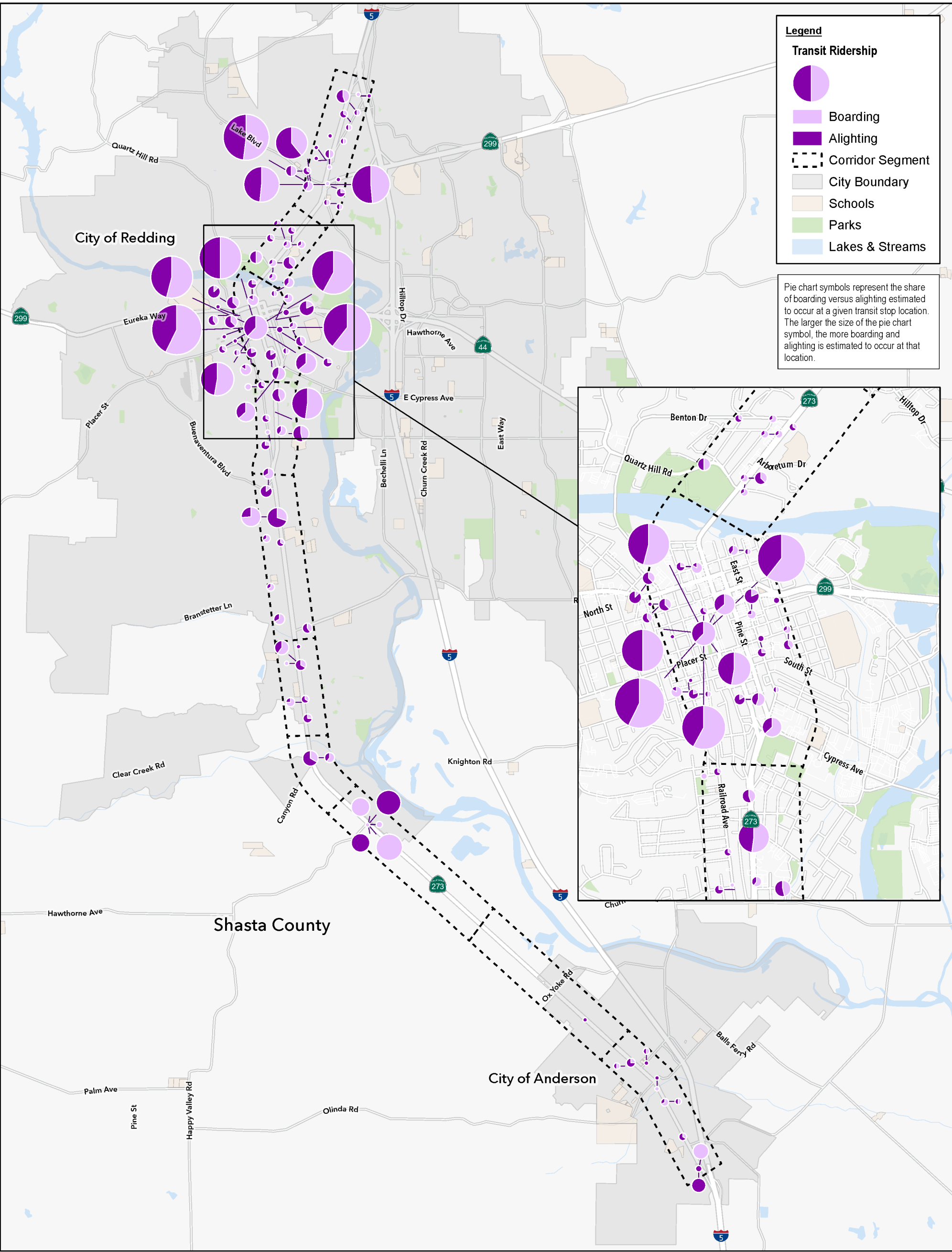
PEDESTRIAN MOBILITY TRENDS

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Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet



Project No. 12560002
Revision No. -
Date September 2023

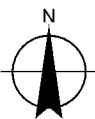
FIGURE 22



Envision 273: SR 273 Multimodal Corridor Plan

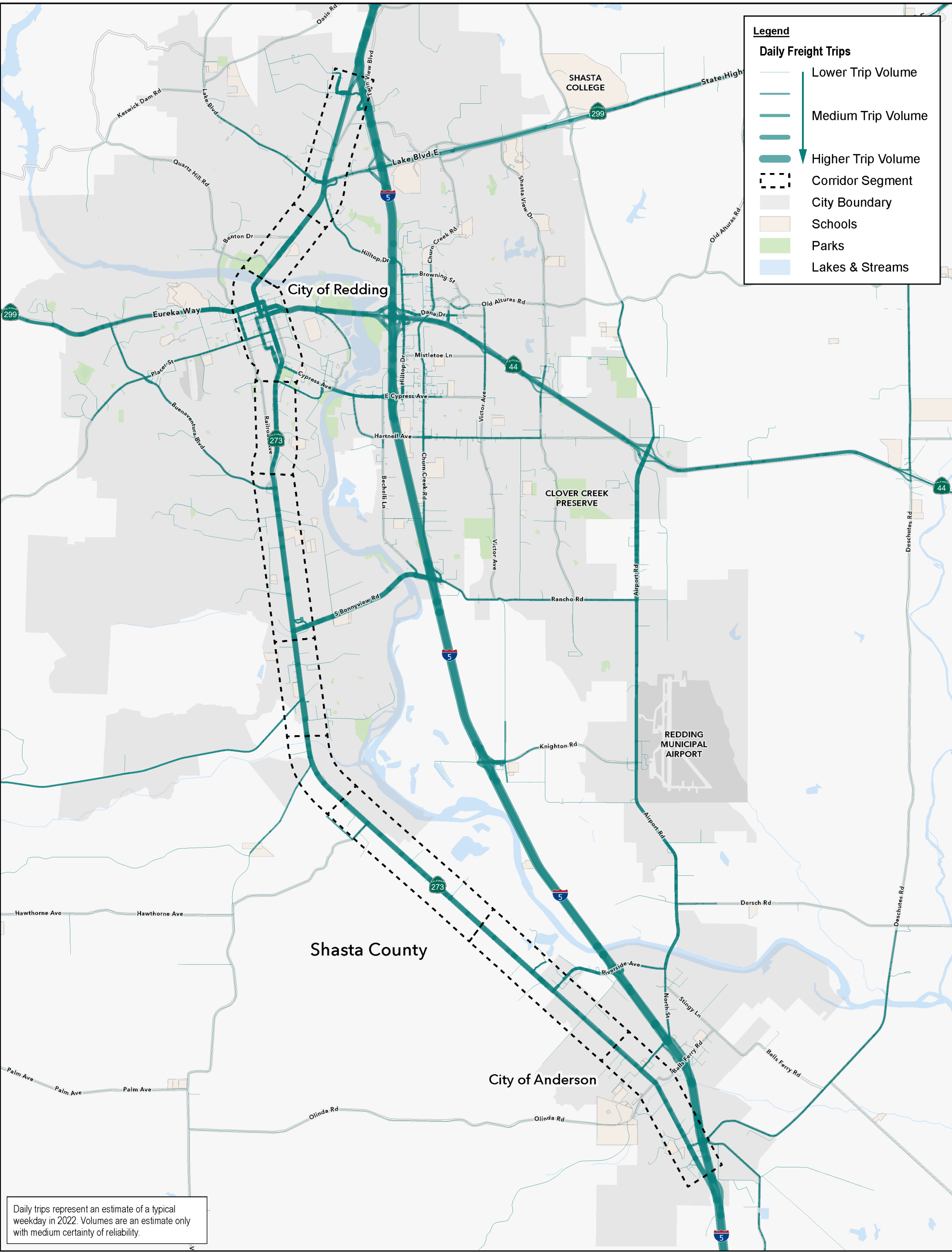
TRANSIT BOARDING & ALIGHTING

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Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet



Project No. 12560002
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Date September 2023

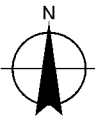
FIGURE 23



Envision 273: SR 273 Multimodal Corridor Plan

FREIGHT VEHICLE MOBILITY TRENDS

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US Feet
Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet



Project No. 12560002
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FIGURE 24

6 CORRIDOR PERFORMANCE

This Existing Conditions Technical Report provides a summary of existing corridor performance based on existing data and infrastructure. The performance assessment will establish a baseline against which improvement recommendations may be measured, ensuring the resulting improvement recommendations provide a balanced, sustainable, and multimodal assessment of current and future corridor conditions.

Guiding Framework

The performance metrics selected to evaluate this Plan are coordinated with goals, objectives, and performance measures outlined in the guiding documents described below. These documents include guidelines for performance assessments within multimodal corridor plans that aim to address safety issues and active transportation infrastructure deficiencies while improving corridor performance for all travel modes, including walking, biking, private vehicle, freight/truck, transit, and rail, with specific emphasis and prioritization on improving conditions for disadvantaged communities (DACs).

Caltrans' Corridor Planning Process Guide, 2020

This guide establishes a comprehensive planning approach through desired protocols and procedures to identify and implement multimodal transportation needs. A key component of this guide is the emphasis on conducting a baseline performance assessment of the corridor to highlight the relationship between identified issues and their causes. Improvement strategies are also evaluated to determine the potential benefits to the corridor, in terms of corridor performance.

The key components of successful multimodal corridor plans include:

- **Corridor Performance Assessment:** Including assessment of the roadway network for private vehicles and freight trucks related to vehicle miles traveled (VMT), traffic bottlenecks, travel time reliability, safety, and pavement conditions, for example.
- **Transit and Rail Network Assessment:** Assess the type and frequency of transit services within the corridor, as well as availability and accessibility of transit modes.
- **Complete Streets/Active Transportation Assessment:** Assess active transportation mobility regarding demand (mode split), accessibility, safety, and comfort.

Goals and objectives within this guide include:

- Improve travel safety: Reduce accident rate for collisions, injuries, and fatalities.
- Improve mobility/system efficiency: Reduce recurrent congestion and hours of peak hour excessive delay.
- Improve mobility/system reliability: Reduce non-recurrent congestion, improve travel time reliability, and reduce non-recurrent person hours delay.
- Reduce greenhouse gas emissions and pollutant emissions in support of State goals and standards.
- Improve Multimodal Access:
 - Reduce Single Occupancy Vehicle travel demand in peak period / Increase alternative mode share.
 - Improved access to multimodal choices system connectivity, or gap closure.
 - Improved transit service frequency and decrease average wait time for transit service.
- Support Economic Opportunity: Improve freight travel time reliability and increase access to jobs.

Caltrans' Smart Mobility 2010: A Call to Action for the New Decade, 2010

The fundamental premise of the Smart Mobility Framework is to ensure that planning or programming decisions for transportation improvements are performance based, transparent, and address sustainable outcomes and objectives. The performance metrics selected for the Envision 273 Plan are consistent with Smart Mobility Framework objectives to ensure that the resulting improvement recommendations provide a balanced, sustainable, and multimodal assessment of current and forecast corridor conditions.

The Smart Mobility Framework is premised on six key objectives:

- Location Efficiency
- Reliable Mobility
- Health and Safety
- Environmental Stewardship
- Social Equity
- Robust Economy

These six objectives are informed through the application of seventeen performance measures, including mode share, accessibility and connectivity, safety, travel reliability, and emissions reductions.

Regional Transportation Plan & Sustainable Communities Strategy (RTP/SCS) for the Shasta Region, 2018 (2022, Pending Adoption)

SRTA has developed regionally specific performance measures that are tied to specific goals and strategies as part of the RTP/SCS, which include:

- Increase travel mode share for carpooling, biking, walking, and public transit;
- Increase (in miles) the non-motorized transportation network;
- Reduce average travel time (in minutes);
- Reduce number of miles of roadways at level of service (LOS) D, E, and F;
- Increase number of jobs and housing within ½ mile of transit stops;
- Reduce vehicle air pollutants (Nox, PM-2.5/PM-10, Ozone) and greenhouse gas (GHG) emissions;
- Reduce vehicle miles traveled (VMT);
- Increase the number (in acres) of agricultural and environmentally-sensitive lands saved from development.

SR 273 Performance Measures

The performance measures chosen to evaluate existing (baseline) corridor conditions are organized within the following categories:

1. Operations & Reliability
2. Mobility & Connectivity
3. Safety
4. Social Equity
5. Sustainability

The performance measures are summarized in the following table. Methodologies for evaluating each performance measure are provided in the following section.

Table 16 *Envision 273 Plan Performance Measures*

Performance Measure	Description
Operations & Reliability	
Vehicle Miles Travelled (VMT)	Quantification of total VMT for all vehicle trips on the study corridor.
Travel Time Reliability (TTR)	Day-to-day variability of travel times between representative origins and destinations by mode, aggregated over corridor or region.
Vehicular Congestion	Identification of "bottlenecks" along the corridor.
Person Throughput	Quantification of total person throughput (all person trips for all travel modes) on the study corridor.
Person Hours Delay	Quantification of total person hours of delay on the study corridor.
Intersection Level of Service	Intersection peak hour level of service (LOS).
Transit Performance	Summary of route-based performance based on transit frequency, reliability, and ridership for stops along the study corridor.
Mobility & Connectivity	
Transit Stop Quality	Presence of amenities at transit stops, including sidewalk, bench, or shelter.
Bicycle Origin-Destination Connectivity	Quantify connectivity between nodes (specified POIs) that can be travelled to within the entire or low-stress bicycle network.
Bicycle Level of Traffic Stress (LTS)	Assessment of comfort level for bicycle facilities within the study area.
Sidewalk Coverage	Identify gaps in the pedestrian network.
Mode Share	Percentage of trips within the study corridor occurring by transit, bicycle, or pedestrian travel modes.
Safety	
Total Collisions	Identification of collision hotspots along the study corridor and a comparison between corridor segments for all collisions, fatal collisions, severe injury collisions, and bicycle or pedestrian collisions.
Total Fatal Collisions	
Total Severe Collisions	
Total Bicycle or Pedestrian Collisions	
Collision Rate	Collision rate and severity by travel mode and facility, compared to statewide averages for each user group and facility type.
Sustainability	
Air Quality & Emissions	Estimates of GHG emissions based on metrics related to VMT, mode split, and vehicular congestion.
Emergency Evacuation	Corridor infrastructure and operations that facilitates emergency evacuations during extreme weather events.
Social Equity	Disadvantaged Community (DAC) Status

Methodology

Vehicle Miles Traveled (VMT)

Daily vehicle miles traveled (VMT) for existing conditions was generated utilizing daily roadway volumes multiplied by the total length (miles) of the study corridor. *VMT calculations are forthcoming pending traffic data collection.*

Travel Time Reliability (TTR)

Travel time reliability is defined as the variation in travel time for the same trip from day to day (“same trip” implies a trip made with the same purpose, from the same origin, to the same destination, at the same time of the day, using the same mode, and by the same route). If variability is large, the travel time is considered to be unreliable, because it is difficult to generate consistent and accurate estimates for it. If there is little or no variation in the travel time for the same trip, the travel time is considered to be reliable.

NPMRDS speed data was used for baseline travel time reliability analysis. The following performance metrics for passenger vehicles were generated:

- Buffer time: the additional time a motorist needs to budget to ensure they arrive at their destination at the expected time 95 percent of the time.
- Buffer time index (BTI): normalized buffer time for distance and is expressed as a ratio.

Vehicular Congestion

The Federal National Performance Rule Congestion Threshold performance measure was used to determine the performance of roadway segment operating conditions within the study corridor: Uncongested ($\geq 60\%$ of free-flow) vs. Congested ($< 60\%$ of free-flow). Under the federal definition, a roadway is considered congested if peak period travel speeds fall below 60% of free flow speeds. This includes delays experienced at intersections. The analysis is based on NPMRDS speed data collected over a one-year period and reflects the AM/PM peak hours.

Intersection Level of Service (LOS)

Traffic Data Collection

Intersection operations are based on existing traffic data collected at 37 study intersections. study intersection peak hour volumes, lane geometries and traffic control are shown in Figure 25 for study intersections 1 through 59 and in Figure 26 for intersections 60 through 79. Note that while most of the key corridor intersection locations shown in Figure 3 are also displayed in Figure 26 and Figure 27 and were assessed for LOS, there are some differences. Some intersection locations were added as they were identified as necessary, while some were removed due to data reliability. Traffic data at some intersection locations were not reliable enough to include in the LOS analysis; however, were used as volume balancing nodes in the review of collected traffic data.

Intersection Level of Service

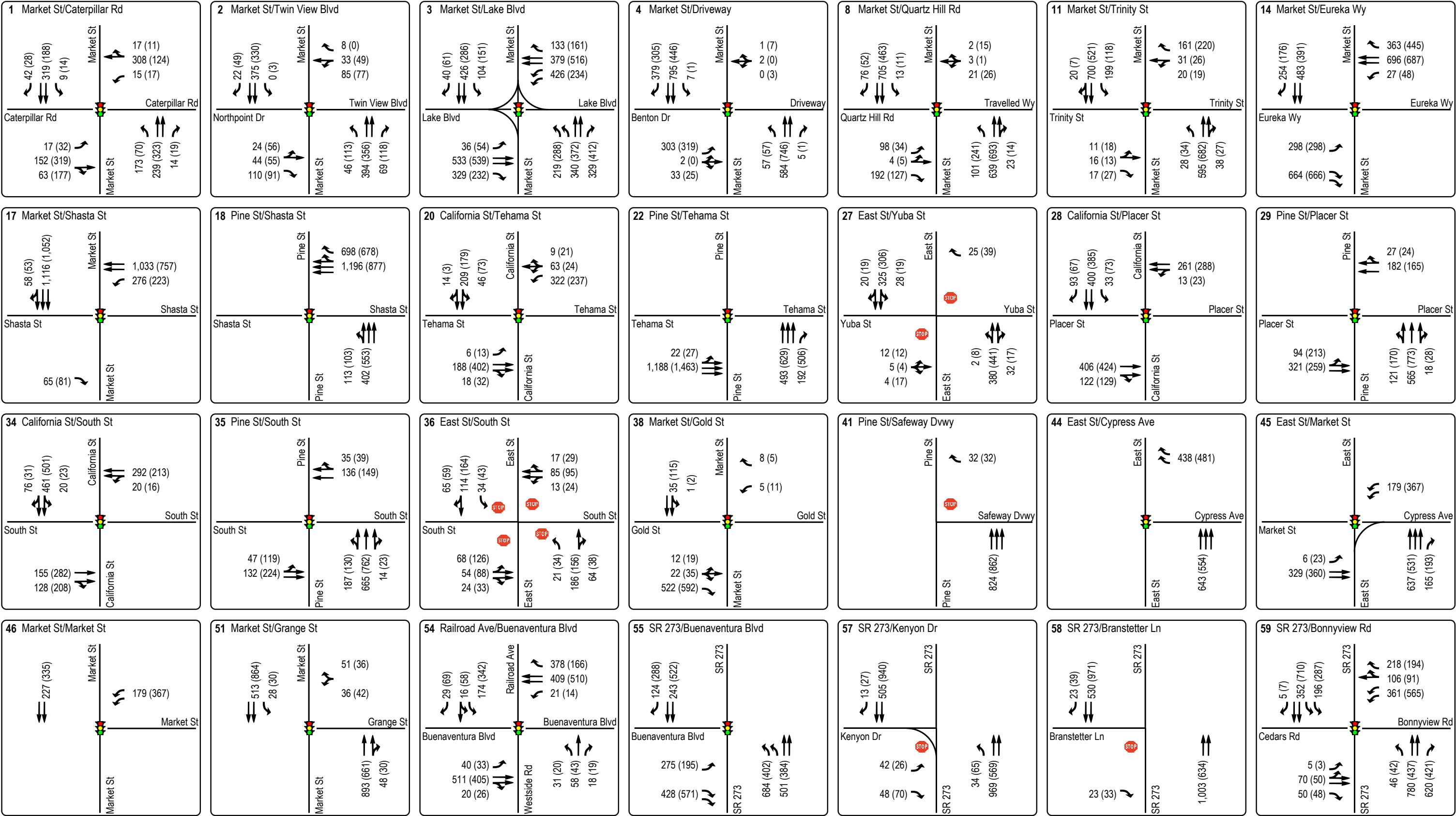
Intersection operations were quantified using Synchro software through the determination of Level of Service (LOS) at key intersections. The methodologies used to determine LOS (i.e. delay, speed, density) were based on the Highway Capacity Manual (HCM) 2000. While updated HCM methods exist, the methodology requires standard NEMA phasing to provide a LOS result. Because many of the intersections

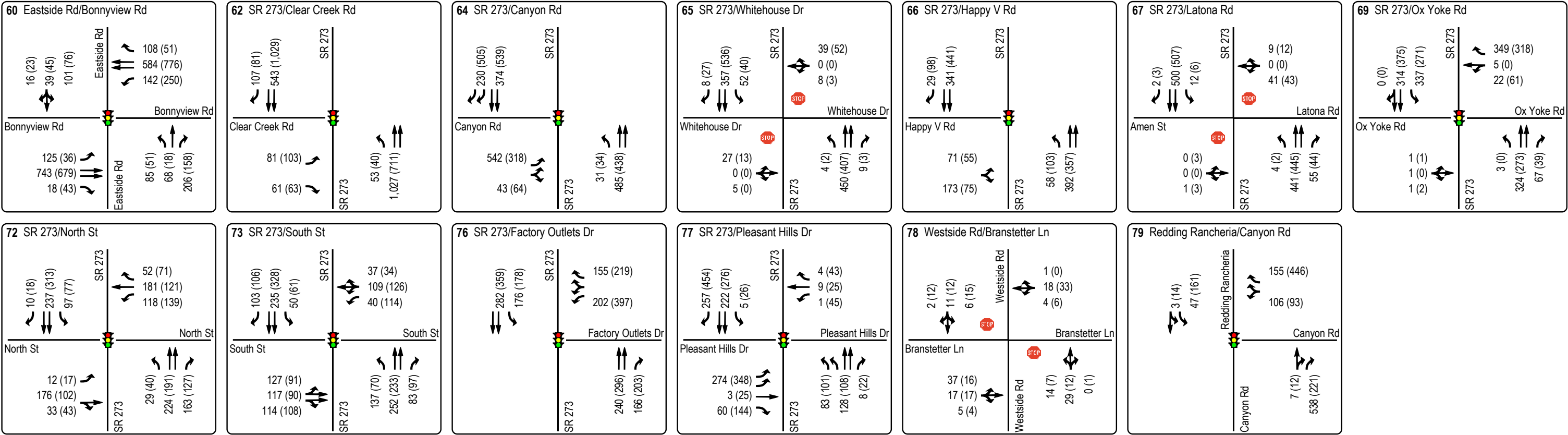
in the corridor study area have non-NEMA or custom phasing, the LOS results reported herein are based on HCM 2000, which can provide results for non-NEMA or custom phasing.

Traffic operations are measured by Intersection LOS, a qualitative metric for traffic conditions that describes the experience of motorists. Grades A through F are assigned to intersections and represent progressively worsening traffic conditions, with A being free-flowing traffic with little to no congestion and F being highly congested.

LOS criteria are established to determine whether a given roadway facility is providing the desired quality of service. Because the SR 273 corridor spans multiple jurisdictions, multiple guidelines for assessing LOS are considered, dependent upon study intersection location, as noted in Table 18. For intersections within the Cities of Redding and Anderson, a threshold of LOS D is considered the minimum for acceptable conditions, while a threshold of LOS C is considered acceptable in Shasta County. Along the SR 273 corridor:

- LOS A, B or C indicate acceptable operations with minor delays, if any.
- LOS D indicates tolerable operations, with noticeable delays.
- LOS E indicates concerning levels of congestions, and drivers may experience long delays.
- LOS F indicates extensive congestion and intersections that are over capacity.





Legend

XX (YY) AM (PM) Peak Hour Volumes

Turn Lane Stop Sign

Traffic Signal Roundabout



Shasta Regional Transportation Agency
SR 273 Multimodal Corridor Plan

Existing Conditions
Peak Hour Traffic Volumes,
Lane Geometries & Traffic Control

Project No. 12560002
Report No. 001
Date 2/22/24

FIGURE 26

Transit Performance

Google's GTFS (General Transit Feed Specification) specification for transit data was utilized to evaluate corridor transit performance. GTFS data consists of static and real-time formats. GTFS static data defines a common format for transit schedules with associated geographic data; while GTFS real-time data provides real-time information, such as vehicle positions, service alerts, and trip updates.

GTFS static data, available on Redding Area Bus Authority's (RABA) website², along with scheduled and observed arrival time for the duration of January 1st 2023 to June 26th 2023 provided by RABA in excel format for the following routes: *1, 2E, 2W, 3, 4, 5, 6N, 6S, 7, 9, 11, 14, School Express, Anderson Commuter, Crosstown Express*, were used in python language, including the pandas library and SQL queries, to calculate schedule adherence and frequency of the transit routes at each stop.

It should be noted that schedule adherence was assumed to have been met if the transit arrived within 5 minutes of scheduled time using an average for the months between January and May. Frequency was calculated for both AM (6:00 AM – 9:00 AM) and PM (15:00 – 18:00) peak periods.

Ridership survey data for select dates during March and April 2023 were also provided by RABA. The ridership summary data includes an average of weekday ridership (onboard and offboard) for the routes provided.

Transit Stop Quality

Transit stop quality was evaluated based on the presence of amenities at the transit stop, including sidewalk, bench, or shelter. This data was based on available geographic information system (GIS) data via City of Redding or Shasta County and confirmed using Google Earth.

Bicycle Origin-Destination Connectivity

Bicycle origin-destination connectivity analysis is conducted by identifying key points of interest (referred to here as key nodes) and an equity focused review to identify disadvantaged areas along the SR 273 corridor study area. Key nodes include both residential and non-residential key nodes, as well as the identification of those nodes that are located within DACs as defined within this Plan. A comprehensive methodology for the bicycle origin-destination connectivity assessment is provided in the Appendix. An overview of the methodology is provided below.

Connectivity Analysis

The residential and non-residential POIs drove a “percent connected” analysis using the results of the bicycle Level of Traffic Stress (LTS) analysis, which is summarized in detail in the existing conditions report. The components comprising the connectivity assessment are described in further detail below.

Full Network

The “full network” comprises the complete bicycling network, regardless of the LTS score assigned to the bicycle network link. This serves as the baseline against which to compare the connectivity of the low stress network, and calculate the percent connected of the low-stress bicycling network.

Low-Stress Network

The low-stress network includes bicycle network links that were assigned LTS scores of 1-2, which is a level of traffic stress that most of the population (estimated to be approximately 60% of the population) is

² <https://www.cityofredding.org/departments/redding-area-bus-authority/contact-raba>

willing and able to tolerate while biking. Network links with LTS scores of 3-4 are considered high-stress and included as part of the “full network.”

Percent Connected

The percent connected analysis assesses the low-stress connectivity of the bicycling network utilizing the shortest path connections between key nodes via the full bicycling network and the connections of the low stress bicycling network. To calculate the percent connected, the number of connections accessible via the low-stress network is divided by the number of connections via the full bicycling network.

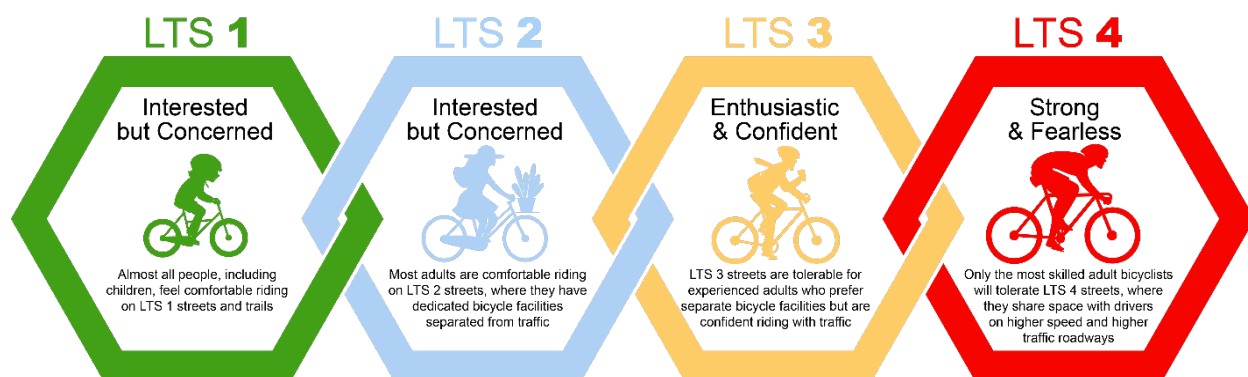
To estimate the effect of bicycle trip length on connectivity, the shortest path bicycle trip distance between key node locations was calculated at a maximum bicycle trip distance of 1.5 miles. Based on the shortest path matrix, the amount of undue detour required to connect an origin destination pair via the low stress network was calculated. If the detour travel distance for any given pair is greater than 25 percent, it is considered “undue” and considered disconnected.

Bicycle Level of Traffic Stress (BLTS)

A comprehensive methodology for the bicycle level of traffic stress (BLTS) methodology is provided in the Appendix. An overview of the methodology is provided below.

Level of Traffic Stress (LTS) are calculated for roadway segments and intersections using the methods documented in the paper, *Low Stress Bicycling and Network Connectivity*, Mineta Transportation Institute, Report 11-19, May 2012. Bicycle LTS quantifies the stress level of a given roadway segment by considering a variety of criteria, including street width (number of lanes), speed limit or prevailing speed, presence and width of bike lanes, and the presence and width of parking lanes. Bicycle LTS is a suitability rating system of the safety, comfort, and convenience of transportation facilities from the perspective of the user. Moreover, the methodology allows planning practitioners to assess gaps in connectivity that may discourage active users from traversing roadways.

Bicycle LTS scores roadway facilities into one of four classifications or ratings for measuring the effects of traffic-based stress on bicycle riders, with 1 being the lowest stress or most comfortable, and 4 being the highest stress or least comfortable. Generally, LTS score of 1 indicates the facility provides a traffic stress tolerable by most children and less experienced riders, such as multi-use paths that are separated from motorized traffic. An LTS score of 4 indicates a stress level tolerable by only the most experienced cyclists who are comfortable with high-volume and high-speed, mixed traffic environments. LTS 3 and 4 represent high stress conditions for bicyclists and reflect the need for visibility and safety improvements. The figure below presents the four scoring classifications, subsequent tables show the criteria associated with determining the LTS score.



Sidewalk Coverage

Sidewalk coverage is based on the proportion of the corridor with sidewalk infrastructure. This data was based on available geographic information system (GIS) data via City of Redding or Shasta County and confirmed using Google Earth.

Mode Share

Mode share is the percentage of travelers or of trips made using available forms of transportation (walking, bicycling, public transportation, private automobile, or freight). Mode share for the percentage of travelers is estimated based on Replica estimates for typical weekday (Thursday) conditions during Fall 2022 for each study segment.

Replica Fall 2022 weekday data was reviewed using two approaches. The first approach examines trips that occurred on SR 273 using a sample set of network links distributed along the study corridor. The second considers trips that occur within the study segment boundaries and represents trips made to destinations on either SR 273, which includes some trips that may not have occurred directly on SR 273.

Both approaches are useful in understanding how individuals travel within the study area. While this Plan does not directly make recommendations for improvements beyond SR 273 right-of-way (ROW), the increase in non-auto trips within study segments compared to the highway suggests the presence of locally serving destinations within the vicinity of the study corridor that may currently be inaccessible to additional travelers due to the presence of SR 273. In addition, Replica data shows a high level of non-auto trips using SR 273 frontage roads, including Westside Road and Eastside Road.

Safety

Collision analysis was conducted based on historical collision data within the project limits. The limits for collision analysis on this project include State Route (SR) 273 from its northerly terminus at Interstate 5 (I-5) in Redding to its southerly terminus at I-5 in Anderson.

Historical data for the most recent and complete 5 years (January 1, 2018, to December 31, 2022) was collected from the California Highway Patrol's Statewide Integrated Traffic Records System (SWITRS).

Additionally, collision rates were calculated for segments where annual average daily traffic volumes (AADT) were provided by Caltrans (2020 AADT, Caltrans). These collision rates were compared against California's average collision rate for similar highway facilities (per million entering vehicles).

Social Equity

Impacts of construction and benefit of use should be shared across the community regardless of ethnicity, economic situation, or physical ability because improvements developed with public funds are for everyone. Projects that could potentially impact minority or low-income communities, or that will provide benefits that favor wealthier communities, need to be offset by mitigating activities, or another less impactful solution should be pursued. The methodology and approach to evaluating the Plan's impact from an equity perspective is described in the following section: Equity Framework.

Sustainability

Air Quality & Emissions

Health-based criteria pollutants and greenhouse gases are quantified based on the on-road vehicle activity of the study corridor. These calculations are forthcoming pending collection of traffic count data.

Extreme Weather

The potential for corridor improvements to support evacuations during extreme weather events will be evaluated during the concept development phase of the Plan.

Equity Framework

The following provides an overview of the approach for equity needs assessment and project prioritization.

Equity Approach

The Envision 273 Plan approach to understanding corridor performance from an equity perspective includes the following steps:

1. Describing the social equity context,
2. Community engagement and understanding community values, and
3. Identification of project-specific social equity performance measures and evaluation of potential impacts.

The social equity context is based on the classifications of census areas as disadvantaged, referred to as DACs. Community engagement will supplement the social equity context and will help to develop priorities for project implementation towards the end of the planning process. Finally, performance measures will be developed to establish an equity baseline and to evaluate how improvement recommendations perform from an equity approach.

Social Equity Context

DACs can be determined in a variety of ways. Existing data sets and standardized indicators can provide a basis for initial social equity screening. Applying US Federal definitions for disadvantaged, historically overburdened, and environmental justice communities, geographic locations may be screened for relevant vulnerability and susceptibility factors including income, race and ethnicity, age, environmental exposures, current and historical economic marginalization, climate vulnerability, historical pollution, and federally-defined environmental justice indices. These factors, as outlined in US Executive Orders 13898, 14008, 13895, and 14096, are represented through US Census data, including American Community Survey (ACS) data, the Center for Disease Control/Agency for Toxic Substances and Disease Registry Environmental Justice Index Indicators Social, Environmental and Health Burden Modules, and public tools, such as the Justice40 Climate and Economic Justice Screening Tool and the US EPA's Environmental Justice Screening and Mapping Tool. These tools provide a compendium of potential indicators for areas of environmental, social, and health-related areas of concern and potential inequity. Additional indicators are selected in accordance with the type of infrastructure and the activities being conducted and services being provided. Relevant draft indicators are selected, analyzed for statistical relevance, and geospatially depicted to provide a visualization of geographic clustering of potentially vulnerable communities to support an understanding of underserved, underrepresented, and overburdened populations in specific geographies.

For the purposes of this Envision 273 Plan, DAC status is determined using the criteria presented in SRTA's DAC analysis used within the 2018 Regional Transportation Plan/Sustainable Community Strategy (RTP/SCS) as well as the U.S. Department of Transportation's RAISE Areas of Persistent Poverty. These criteria will be used to evaluate potential project benefits to DACs.

The RTP defines 'disadvantaged communities' as areas that, according to statistical data, have a markedly higher share of individuals challenged by the cumulative impact of:

- Poverty and unemployment
- Lack of mobility options, including access to automobile, active transportation, and public transportation
- Housing and transportation cost burden
- Single parent households

- Young and elderly
- Educational attainment
- Linguistic isolation
- Minority status

Community Values

Forthcoming: Through the next phases of the planning process, GHD will provide additional information related to the needs assessment based on input from stakeholder engagement and public input.

Equity-Based Performance Assessment

The purpose of the equity assessment is to determine how the corridor and its sub-segments are performing from an equity standpoint. Following additional community engagement and the development of project-specific improvement recommendations for the corridor, an equity-based project performance assessment will be conducted to assist in the screening and prioritization of projects. These two assessments are described below.

Baseline Performance Assessment

The baseline performance assessment provided in this report will determine how the study area is performing from an equity and safety standpoint. This process will help to identify potential gaps and inequalities in access and quality along with adverse impacts, barriers to equity, and actions required to overcome barriers. This process will help to identify the specific transportation needs in the study area and will inform improvement project recommendations.

Project Performance Assessment

Following the development of project-specific improvement recommendations for the corridor, an equity-based project performance assessment will be conducted to assist in the screening and prioritization of projects. The goal of this assessment is to improve equitable outcomes and intersectional impacts over time and to facilitate solutions that embody community values and concerns and address the needs of underrepresented and underserved populations.

Indicators identified to evaluate project-specific impacts are consistent with the Center for Transportation Equity, Decisions & Dollars (CTEDD) Transportation Equity Scorecard³ to screen and prioritize projects within the Envision 273 Plan that advance equity and safety based on the following six categories:

- Access to Opportunity
- Health and Environment
- Safety and Emergency Evacuation
- Affordability
- Mobility
- Burdens

Project Scores

Projects will be evaluated and allocated scores from zero to two based on the potential for the project to serve DACs, as follows:

³ *Transportation Equity Toolkit: Transportation Equity Needs Assessment & Project Prioritization*, CTEDD, 2021.

- Score of zero (0) = Project does not serve DACs
- Score of one (+1) = Project serves low to moderate concentrations of DACs
- Score of two (+2) = Project serves high concentrations of DACs

If a project is anticipated to adversely impact DACs, a score of negative ten (-10) will be allocated within the “burdens” category. In addition, the projects may be allocated additional points if it is anticipated to significantly improve safe and affordable travel options within DACs. Project scores will be summed and used to compare relative benefits between other projects included within the plan.

The equity scorecard is provided in the following table. *Note: Project evaluation will occur at a later stage in the planning process once alternative improvement recommendations have been developed.*

Table 17 Equity Scorecard Categories & Points

Category	Factor	Criteria	Points	COCs*Impact
ACCESS TO OPPORTUNITY	Employment	Project improves access to employment opportunities.	0, +1, or +2	(0, +1, or +2)*(+2)
	Education	Project improves access to educational opportunities (e.g., higher education, job training, schools, daycare, after school programs).	0, +1, or +2	(0, +1, or +2)*(+2)
	Community Services and Shopping	Project improves access to community services and shopping areas.	0, +1, or +2	(0, +1, or +2)*(+2)
HEALTH AND ENVIRONMENT	Health Care	Project improves access to health care services.	0, +1, or +2	(0, +1, or +2)*(+2)
	Healthy Food	Project connects to grocery stores or markets that provide healthy and fresh food at affordable prices.	0, +1, or +2	(0, +1, or +2)*(+2)
	Environment	Project increases livability (e.g., community cohesion, streetscaping, green infrastructure, etc.) through design and/or mitigation measures.	0, +1, or +2	(0, +1, or +2)*(+2)
SAFETY & EMERGENCY EVACUATION	Safety	Project improves safety for pedestrians and bicyclists at high-crash locations.	0, +1, or +2	(0, +1, or +2)*(+2)
		Project improves safety at other (non-high crash) locations.	0, +1, or +2	(0, +1, or +2)*(+2)
	Emergency Evacuation	Project improves emergency evacuation (e.g., transit coordination, connections to shelters, etc.).	0, +1, or +2	(0, +1, or +2)*(+2)
AFFORDABILITY	Housing	Project improves access to and from affordable housing.	0, +1, or +2	(0, +1, or +2)*(+2)
	Transportation	Project increases availability of affordable transportation options.	0, +1, or +2	(0, +1, or +2)*(+2)
	Housing and Transportation Costs	Project decreases the share of household income consumed by transportation and housing.	0, +1, or +2	(0, +1, or +2)*(+2)
MOBILITY	Active Transportation*	Project includes construction or improvement of sidewalks, trails, bike lanes, or other active transportation options.	0, +1, or +2	(0, +1, or +2)*(+2)
	Transit Access and Service	Project improves transit service and/or access, including first and last mile access.	0, +1, or +2	(0, +1, or +2)*(+2)
	Americans with Disabilities Act (ADA)	Project improves accessibility for persons with disabilities (e.g., transit stops, ADA curb ramps, audio-visual signals, driveway grade, etc.).	0, +1, or +2	(0, +1, or +2)*(+2)
BURDENS	Adverse Impacts	Project has adverse impacts (e.g., cumulative or disproportionate impacts, creates a barrier, increases noise or emissions, increases displacement/gentrification etc.)	-10 or 0	(-10, 0)*(+2)
* also advances health and environment		Total	30	60

Performance results

Performance measure results are presented below. Some performance measures are applicable to the entire study corridor (i.e., VMT and person throughput), while some were best evaluated from a segment-based approach. Results are summarized by segment in

Operations & Reliability

The Operations & Reliability performance measure results are summarized below and presented by segment in Table 22.

Vehicle Miles Traveled (VMT) Results

[Results forthcoming.]

Travel Time Reliability (TTR) and Congestion

[Results forthcoming.]

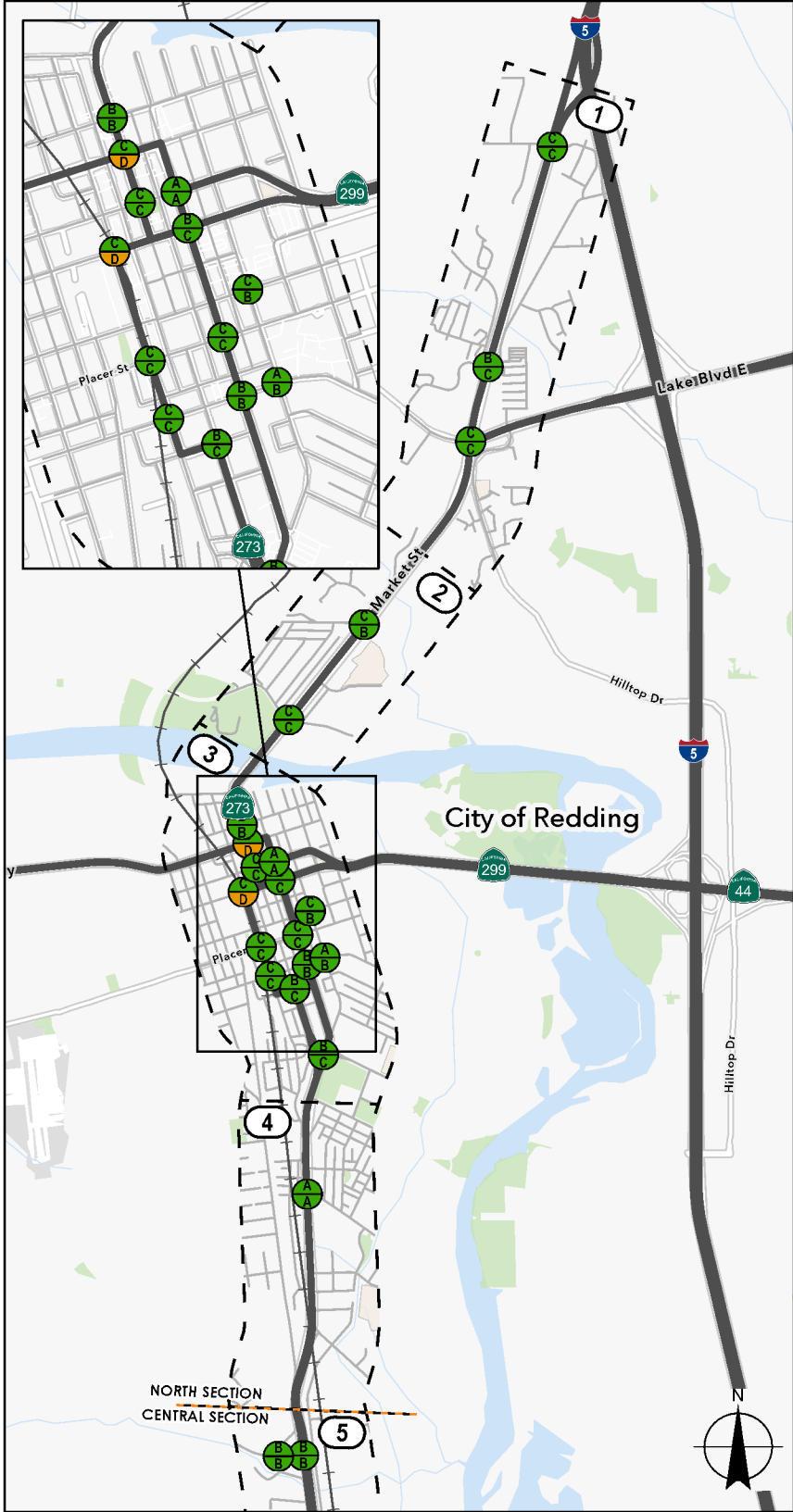
Person Throughput/Person Hours of Delay

[Results forthcoming.]

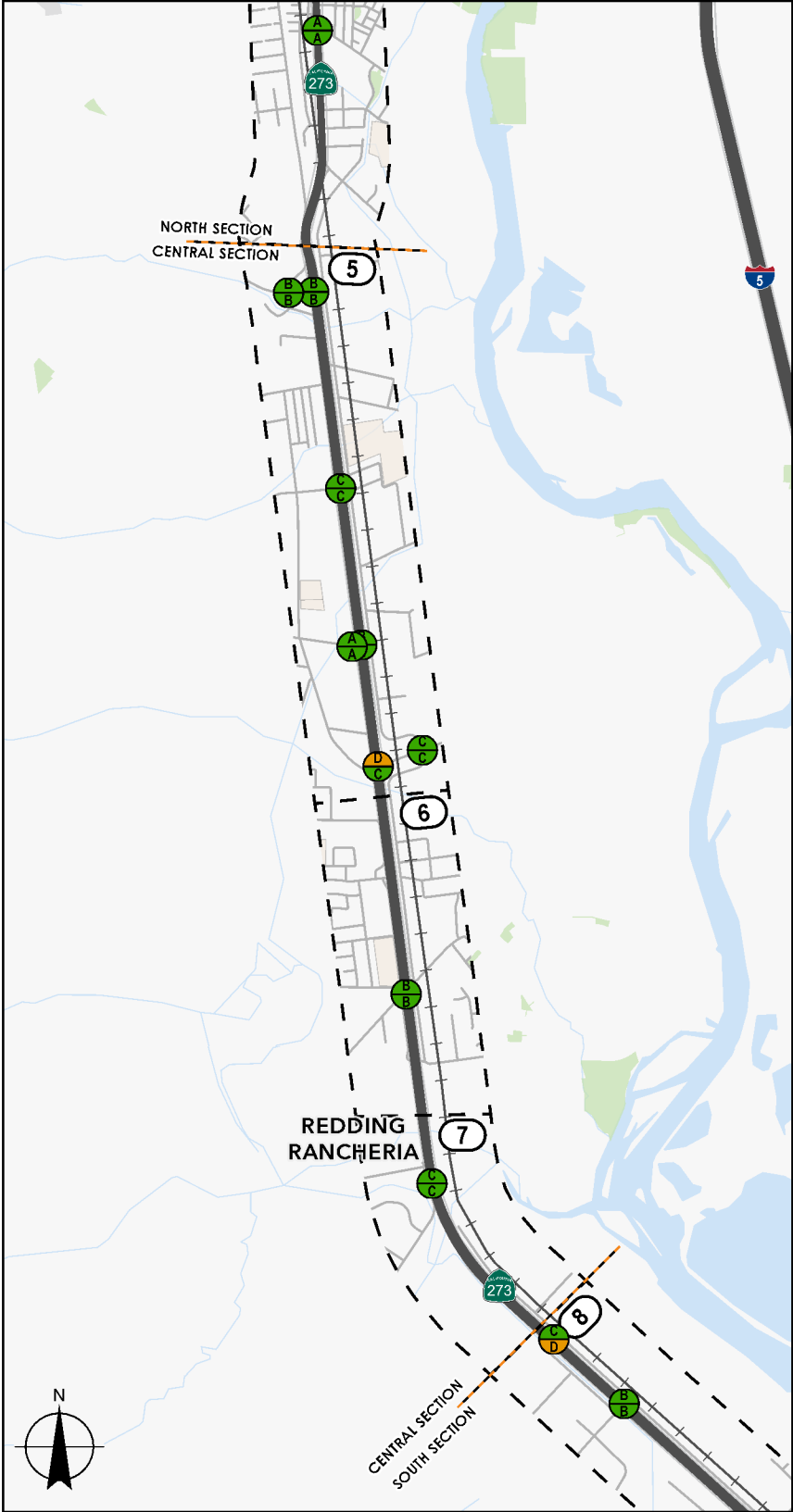
Intersection Level of Service (LOS)

The LOS results for the AM and PM peak periods for the study intersections along the corridor are presented in Figure 28. The target LOS thresholds applicable to each intersection, as well as associated delay is reported in Table 18. As shown, most of the study intersections along the corridor operate at LOS A, B, or C in both the AM and PM peak periods, indicating acceptable vehicular traffic conditions. While a few intersections are operating at LOS D in the AM or PM peak period, none of the study intersections were found to operate below the identified thresholds for acceptable conditions.

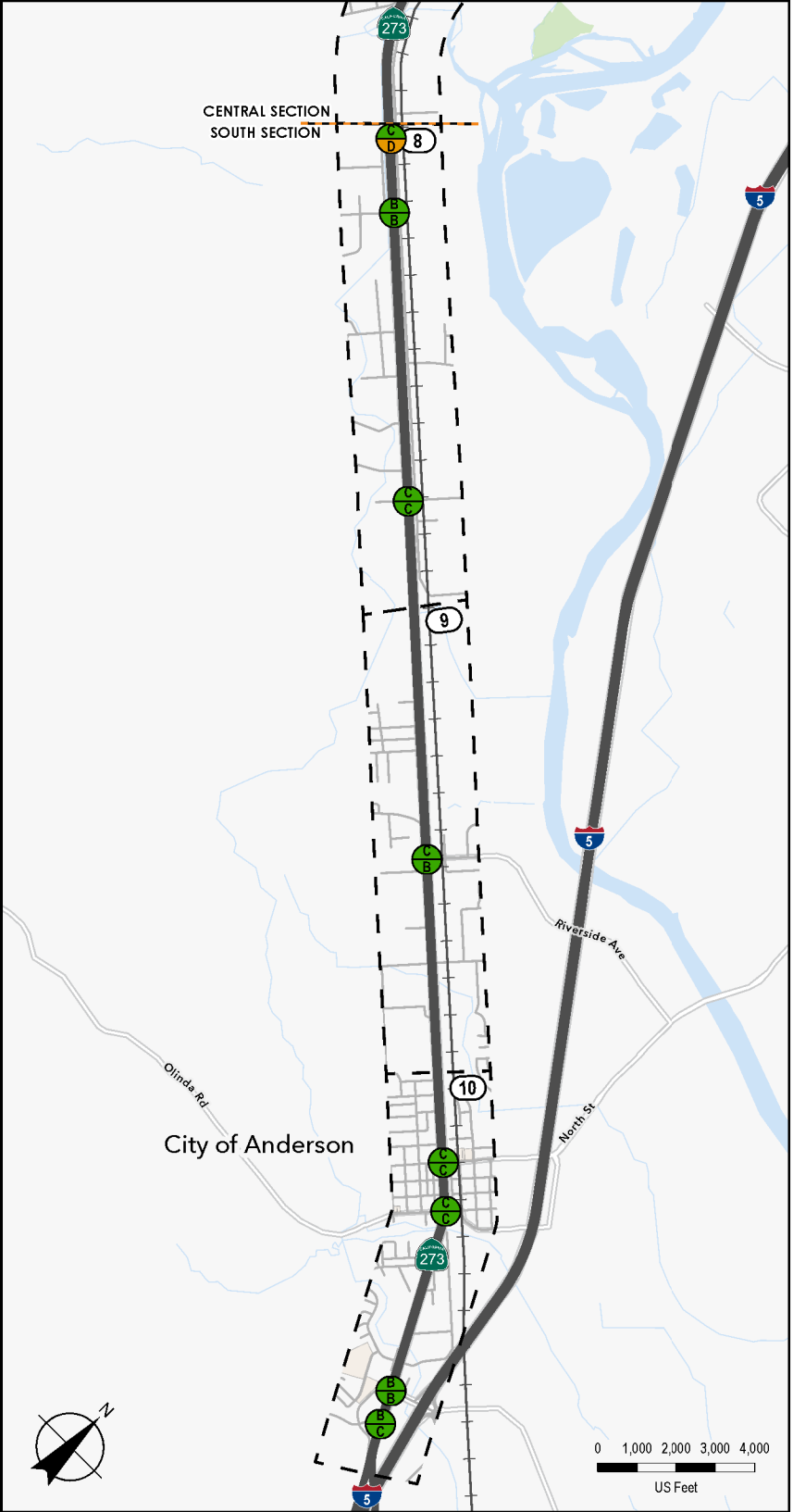
NORTH SECTION



CENTRAL SECTION



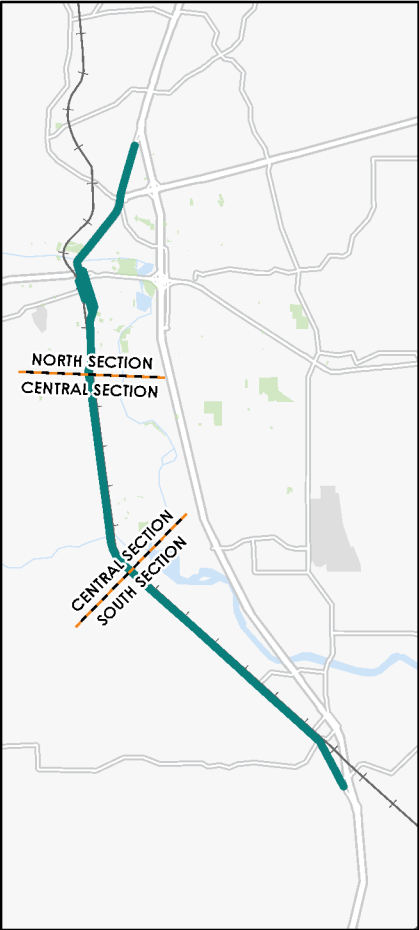
SOUTH SECTION



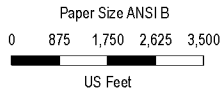
Legend

- AM PM Level of Service
- LOS A, B or C
- LOS D
- LOS E
- LOS F
- Highway/Major Road
- Project Roads
- Railroad
- Corridor Segment
- Schools
- Parks
- Lakes & Streams

LOCATOR MAP



Envision 273: SR 273 Multimodal Corridor Plan
EXISTING INTERSECTION LEVEL OF SERVICE



Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

C:\Users\pfeil\Temp\ProjectFiles\Temp_SRTA_SR273\GIS\MapDeliverables\12560002_ExistingConditions\12560002_ExistingConditions.aprx - 12560002_028_Intersection LOS
Print date: 23 Feb 2024 - 11:48



Project No. 12560002
Revision No. -
Date February 2024

FIGURE 28

Data source: City of Redding GIS, California State Parks, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc., METANASA, USGS, Bureau of Land Management, EPA, NPS, USDA, USFWS, California State Parks, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc., METANASA, USGS, Bureau of Land Management, EPA, NPS, USDA, USFWS, City of Redding GIS, California State Parks, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc., METANASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA, USFWS, City of Redding GIS, California State Parks, Esri, TomTom, Garmin, SafeGraph, METANASA, USGS, Bureau of Land Management, EPA, NPS, USDA, USFWS. Created by: pfeil

Table 18 Study Intersection LOS Results

Study Intersection ID	Intersection Location	Local Jurisdiction / LOS Threshold	Traffic Control	AM Peak Hour		PM Peak Hour	
				Delay	LOS	Delay	LOS
1	Market St & Caterpillar Rd	City of Redding / D	Signal	27	C	26	C
2	Market St & Northpoint Dr/Twin View Blvd	City of Redding / D	Signal	18	B	24	C
3	Market St & Lake Blvd	City of Redding / D	Signal	29	C	30	C
4	Market St & Benton Dr	City of Redding / D	Signal	21	C	19	B
8	Market St & Quartz Hill Rd/Travelled Wy	City of Redding / D	Signal	27	C	25	C
11	Market St & Trinity St	City of Redding / D	Signal	18	B	17	B
14	Market St & Eureka Wy	City of Redding / D	Signal	30	C	36	D
17	Market St & Shasta St	City of Redding / D	Signal	22	C	22	C
18	Shasta St & Pine St	City of Redding / D	Signal	7	A	10	A
20	California St & Tehama St	City of Redding / D	Signal	28	C	36	D
22	Pine St & Tehama St	City of Redding / D	Signal	16	B	25	C
27	Yuba St & East St	City of Redding / D	Side-Street Stop	15	C	14	B
28	California St & Placer St	City of Redding / D	Signal	27	C	28	C
29	Pine St & Placer St	City of Redding / D	Signal	23	C	21	C
34	California St & South St	City of Redding / D	Signal	25	C	27	C
35	Pine St & South St	City of Redding / D	Signal	16	B	20	B
36	East St & South St	City of Redding / D	All-Way Stop	10	A	11	B
38	Gold St & Market St	City of Redding / D	Signal	17	B	22	C
45	East St & Market St/Cypress Ave	City of Redding / D	Signal	17	B	21	C
51	Market St & Grange St	City of Redding / D	Signal	9	A	8	A
54	Westside Rd/Railroad Ave & Buenaventura Blvd	City of Redding / D	Signal	18	B	19	B
55	SR 273 & Buenaventura Blvd	City of Redding / D	Signal	16	B	14	B
57	SR 273 & Kenyon Dr	City of Redding / D	Side-Street Stop	24	C	24	C
58	SR 273 & Branstetter Ln	City of Redding / D	Side-Street Stop	11	B	13	B
59	SR 273 & Cedars Rd/Bonnyview Rd	City of Redding / D	Signal	36	D	33	C
60	Eastside Rd & Bonnyview Rd	City of Redding / D	Signal	32	C	28	C
62	SR 273 & Clear Creek Rd	City of Redding / D	Signal	11	B	12	B

Study Intersection ID	Intersection Location	Local Jurisdiction / LOS Threshold	Traffic Control	AM Peak Hour		PM Peak Hour	
				Delay	LOS	Delay	LOS
64	SR 273 & Canyon Rd / Redding Rancheria	City of Redding / D	Signal	21	C	21	C
65	SR 273 & Whitehouse Dr	City of Redding / D	Side-Street Stop	20	C	26	D
66	SR 273 & Happy Valley Rd	Shasta County / C	Signal	12	B	11	B
67	SR 273 & Amen St/Latona Rd	Shasta County / C	Side-Street Stop	20	C	18	C
69	SR 273 & Ox Yoke Rd	City of Anderson / D	Signal	24	C	18	B
72	SR 273 & North St	City of Anderson / D	Signal	29	C	24	C
73	SR 273 & South St	City of Anderson / D	Signal	30	C	26	C
76	SR 273 & Factory Outlets Dr	City of Anderson / D	Signal	13	B	15	B
77	SR 273 & Pleasant Hills Dr	City of Anderson / D	Signal	18	B	23	C
78	Branstetter Ln & Westside Rd	City of Redding / D	Side-Street Stop	10	A	10	A

Note: LOS results based on 2000 *Highway Capacity Manual* .

Transit Performance

Transit performance was evaluated for the transit routes that provide service along the corridor. Performance was based on schedule adherence and frequency of the transit routes at each stop. The table below presents the average schedule adherence for each route within the study area. As shown, most routes have a schedule adherence of greater than 80-percent. The routes with lower schedule adherence include Route 1, Route 2E, Route 3, Route 4, Route 5, and Route 11.

Table 19 Transit Route Schedule Adherence

Route	Average Schedule Adherence
Route 1	68%
Route 2W	82%
Route 2E	74%
Route 3	62%
Route 4	73%
Route 5	68%
Route 6N	85%
Route 6S	80%
Route 7	89%
Route 9	87%
Route 11	76%
Route 14	80%
Route AC	94%
Route CTE	89%
Route SE	93%

Note: Service is considered "on-time" for stop arrivals within 5 minutes of scheduled time.

The Appendix provides maps showing transit route performance based on peak hour on-time arrival percentages, representing schedule adherence. Generally, the segments with the highest average schedule adherence are south of the City of Redding (Segments 8 – 10). Schedule adherence is poor within Segment 5, with several stops for Route 3 at or below 25-percent schedule adherence. Generally, schedule adherence within the remaining segments is fair.

Mobility & Connectivity

The Mobility & Connectivity performance measure results are summarized below and presented by segment in Table 22.

Transit Stop Quality

Most transit stops located directly on SR 273 lack benches or shelters. The segments with the most transit amenities for stop locations within the segment boundaries are Segment 2, Segment 3 (Downtown Redding), Segment 6, and Segment 10 (Anderson).

Bicycle Level of Traffic Stress (BLTS)

Most of the study corridor is high stress (LTS 4). Low stress (LTS 1 or 2) routes found in pockets along the corridor, often separated by barriers like SR 273 and the railroad tracks. Low stress connections within the study area are supplemented by the Class I shared use paths concentrated near the Sacramento River in Downtown Redding, along South Bonnyview Road between Segments 5 and 6, and within the City of Anderson. Where low stress connectivity is achieved along the corridor, it can often require out of direction travel when the shortest path involves high stress routes of crossings. These results are summarized in the Appendix.

Bicycle Origin-Destination (O-D) Connectivity

Analysis of bicycle O-D connectivity was prepared for both total residential origins and residential origins within DACs. The results highlight the differences in safe and comfortable connectivity between residential origins with differing levels of affordability and demographic characteristics. These results are summarized in the Appendix. The analysis finds that DACs are not disproportionately affected by poor LTS connectivity. However, this finding does not account for the fact that DACs are disproportionately dependent on transit and non-motorized travel for essential trips.

Sidewalk Coverage

Pedestrian facilities throughout the study corridor include a discontinuous network of sidewalk, crosswalks, and multi-use trail connections. This network includes gaps, narrow sections and vegetation overgrowth in many locations. Most locations with sidewalk vary in width between four and six feet. However, there are some locations that also feature a landscaped area with sidewalk that are as wide as 15 feet. Sidewalk gaps are most prevalent between Downtown Redding and Anderson, within Segments 6 – 9.

Mode Share

The results of the modal split assessment are summarized in the following table. As shown, automobile trips (including both single-occupancy and multiple occupant trips) far outweigh non-auto trips, with approximately 11-times more trips made by a car than by bicycle or foot.

Table 20 Study Area Mode Split (Excluding Transit Trips)

Mode	% Calculated Using	
	SR 273 Network Links ¹	Corridor Segments ²
Auto	88%	80%
Freight	7%	7%
Bike	2%	3%
Walk	2%	8%
Other	0%	2%

¹ Includes trips for a sample set of network links on SR 273, only

² Includes trips on all network links within study segments

Safety

Collision data was presented in Chapter 4. Additionally, collision rates were calculated for segments using the Federal Highway Administration (FHWA) collision rate⁴ for both total and fatal + injury collisions. The. These collision rates were compared against California's average collision rate for similar highway facilities (per million entering vehicles). Collision rates for Segments 2 and Segments 4 – 10 exceed the statewide average collision rate. Table 21 presents the results of this assessment. Table 22 provides a summary of the safety performance measure assessment.

Equity

The corridor study segments are partially or fully within DACs based on the four criteria categories. The disadvantaged community status of each segment is presented in Table 22.

Sustainability

[Results forthcoming.]

⁴ https://safety.fhwa.dot.gov/local_rural/training/fhwasa1109/app_c.cfm

Table 21 *Collision Rates by Segment*

ID	Segment Extent (Approximate)	Approx. Length (mi)	Highway Type (Typical)	Area Type (Typical)	Total Collisions (2018-2022)	Total FSI Collisions (2018-2022)	AADT (Caltrans 2020)	Collision Rate (Per Million Entering Vehicles)	CA Average Collision Rate (Per Million Entering Vehicles)	Higher than state avg?
1	I-5 Ramps to south of Lake Blvd	1.8	Divided 4 Lanes	Suburban	29	2	9,900	0.89	0.94	
2	South of Lake Blvd to Sacramento River	1.0	Divided 4 Lanes	Suburban	33	2	17,800	1.02	0.94	Yes
3	Sacramento River to south of Cypress Ave	2.5*	Conventional 3 Lanes	Urban	100	4	16,200	1.35	1.61	
4	South of Cypress Ave to north of Buenaventura Blvd	1.2	Divided 4 Lanes	Suburban	30	2	14,100	0.97	0.94	Yes
5	North of Buenaventura Blvd to south of S Bonnyview Rd	2.0	Divided 4 Lanes	Suburban	59	6	15,600	1.04	0.94	Yes
6	South of S Bonnyview Rd to south of Girvan Rd	1.2	Divided 4 Lanes	Suburban	55	8	18,600	1.35	0.94	Yes
7	South of Girvan Rd to Metz Rd	0.9	Divided 4 Lanes	Suburban	24	4	10,700	1.37	0.94	Yes
8	Metz Rd to south of Latona Rd	2.3	Divided 4 Lanes	Rural	61	14	10,300	1.41	0.18	Yes
9	South of Latona Rd to north of Briggs St	2.2	Divided 4 Lanes	Suburban	47	5	9,900	1.18	0.94	Yes
10	North of Briggs St to I-5 Ramps	2.2	Divided 4 Lanes	Suburban	71	12	9,200	1.92	0.94	Yes

**Includes both southbound and northbound couplets.*

Note: FSI = Fatal or Severe Injury

Table 22 Performance Measure Results by Segment

SEGMENT PERFORMANCE	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8	Segment 9	Segment 10
	I-5 Ramps to south of Lake Blvd	South of Lake Blvd to Sacramento River	Sacramento River to south of Cypress Ave	South of Cypress Ave to north of Buenaventura Blvd	North of Buenaventura Blvd to south of S Bonnyview Rd	South of S Bonnyview Rd to south of Girvan Rd	South of Girvan Rd to Metz Rd	Metz Rd to south of Latona Rd	South of Latona Rd to north of Briggs St	North of Briggs St to I-5 Ramps
MOBILITY										
Transit Stop Conditions	Poor	Fair	Fair	Fair	Poor	Fair	Fair	Poor	Poor	Fair
Presence of Amenities (Shelter or Bench) at Transit Stop?	Typically no bench/shelter	Typically no bench/shelter	Typically no bench/shelter	Some with bench	Typically no bench/shelter	Some with bench/shelter	Some with bench/shelter	No bench/shelter	Some with bench	Some with bench/shelter
Sidewalk Connection to Transit Stop? (On SR 273, only)	No stops on SR 273	Yes, sidewalk at SR 273 stops	Yes, sidewalk at SR 273 stops	Some sidewalk at SR 273 stops	No stops on SR 273	Yes, sidewalk at SR 273 stops	Some sidewalk at SR 273 stops	No stops on SR 273	Some sidewalk at SR 273 stops	Some sidewalk at SR 273 stops
Sidewalk Coverage	Minimal; Connectivity near developed area	Minimal; Connectivity near developed area	High	Partially connected	Minimal to None	Minimal to None	Minimal to None	None	None	Medium to High
Bicycle Level of Traffic Stress (LTS)	High Stress	High Stress	High Stress	High Stress	High Stress	High Stress	High Stress	High Stress	High Stress	High Stress
Bicycle Connectivity via Low Stress Network to Destination Types:	Results shown as # Destinations ¹ (% Connected ²)									
Employment Destinations	3 (0%)	0 (0%)	8 (8%)	1 (0%)	1 (0%)	0 (0%)	1 (6%)	0 (0%)	2 (0%)	3 (27%)
Education Destinations	1 (1%)	1 (18%)	9 (14%)	2 (14%)	6 (4%)	3 (46%)	0 (0%)	0 (0%)	1 (12%)	7 (13%)
Community Services and Shopping Destinations	10 (5%)	3 (3%)	71 (13%)	6 (5%)	9 (1%)	4 (17%)	1 (3%)	2 (0%)	1 (36%)	10 (7%)
Health Care Destinations	1 (0%)	0 (0%)	27 (12%)	4 (4%)	1 (0%)	0 (NA)	0 (NA)	0 (NA)	0 (31%)	2 (7%)
Food Access	1 (0%)	0 (0%)	4 (0%)	1 (0%)	0 (7%)	2 (26%)	0 (0%)	0 (0%)	0 (NA)	3 (0%)
Transit Service Destinations (includes Bike Share locations)	41 (9%)	10 (0%)	93 (13%)	20 (3%)	17 (0%)	9 (0%)	3 (0%)	9 (0%)	6 (6%)	27 (0%)
Civic Service Destinations	1 (1%)	0 (0%)	16 (15%)	2 (5%)	0 (0%)	0 (0%)	1 (0%)	0 (0%)	0 (14%)	11 (5%)
Parks/Open Space & Recreation Destinations	5 (18%)	4 (34%)	4 (3%)	3 (28%)	0 (0%)	2 (74%)	0 (0%)	0 (NA)	0 (0%)	1 (0%)
OPERATIONS & RELIABILITY										
Transit Stop Reliability	Results provided by Route in Table 19.									
Travel Time Reliability (TTR)	Results forthcoming.									
Intersection Level of Service (LOS)	Results provided in Table 18.									
1. The # of destinations reported here are the # of destinations only within the segment. However, low stress connectivity is assessed for connections within and outside of the segment, so long as the location is reachable within a 1.5-mile biking distance. 2. Value of "NA" for the percent connected indicates that there are no connections for that node type in the full stress network within a 1.5-mile biking distance from the residential origins in that segment to compare low-stress connections against.										

SEGMENT PERFORMANCE	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8	Segment 9	Segment 10
	I-5 Ramps to south of Lake Blvd	South of Lake Blvd to Sacramento River	Sacramento River to south of Cypress Ave	South of Cypress Ave to north of Buenaventura Blvd	North of Buenaventura Blvd to south of S Bonnyview Rd	South of S Bonnyview Rd to south of Girvan Rd	South of Girvan Rd to Metz Rd	Metz Rd to south of Latona Rd	South of Latona Rd to north of Briggs St	North of Briggs St to I-5 Ramps
SAFETY										
Total Crashes	29	33	100	30	59	55	24	61	47	71
Total Fatal Crashes	2	1	2	1	5	3		4	3	
Total Severe Crashes		1	2	1	1	5	4	10	2	12
Total Crashes Involving a Pedestrian	1	2	8	3	5	2	3	5	3	2
Total Pedestrian Fatalities	1		1	1	4	1		2	2	
Total Crashes Involving a Bicyclist		1	3	1	1			2		2
Total Bicyclists Fatalities								2		
% Occurred at Night (Non-Daylight Crashes)	31%	21%	30%	33%	34%	47%	46%	43%	30%	44%
Primary Crash Types	Broadside	Rear End	Broadside & Rear End	Broadside	Rear End	Rear End	Rear End & Broadside	Broadside	Rear End & Hit Object	Broadside & Rear End
Primary Crash Cause	Unsafe Speed & Vehicle Driver Error	Unsafe Speed	Unsafe Speed & Vehicle Driver Error	Vehicle Driver Error & Unsafe Speed	Unsafe Speed	Unsafe Speed	Vehicle Driver Error & Unsafe Speed	Vehicle Driver Error & Unsafe Speed	Vehicle Driver Error & Unsafe Speed	Vehicle Driver Error & Unsafe Speed
Crash Rate (Bold = Exceeds Statewide average)	0.89	1.02	1.35	0.97	1.04	1.35	1.37	1.41	1.18	1.92
Statewide Crash Rate	0.94	0.94	1.61	0.94	0.94	0.94	0.94	0.18	0.94	0.94
DISADVANTAGED COMMUNITY STATUS										
SRTA Regional Transportation Plan (RTP) Criteria	Majority	Partially	Majority	Partially	Majority	No	Majority	Majority	No	Majority
RAISE Areas of Persistent Poverty Criteria	Partially	Partially	Majority	Majority	Majority	Majority	Majority	Fully	Majority	Majority
Climate & Economic Justice Criteria	Fully	Partially	Majority	Partially	No	No	Partially	Fully	Fully	Fully
SB 535 CalEPA Criteria	No	No	No	No	No	Partially	Partially	No	No	No

System Profiles

System profiles were developed for each study segment to help visualize the results of the corridor performance assessment. These profiles are provided in the Appendix. Based on the results of the performance assessment, segments were given an overall assessment result based on the following metrics and criteria. Mobility & Connectivity, Operations & Reliability, and Safety results reflect either poor, fair, or good performance. Equity results reflect high, moderate, or low disadvantaged community (DAC) status, depending on how many DAC criteria were met.



MOBILITY & CONNECTIVITY

- Transit Stop Conditions
- Sidewalk Coverage
- Bicycle Level of Traffic Stress (LTS)
- Bicycle Connectivity via Low Stress Network to Destination Types



OPERATIONS & RELIABILITY

- Transit Stop Reliability
- Travel Time Reliability (TTR)
- Intersection Level of Service (LOS)



SAFETY

- Total Crashes
- Total Fatal Crashes
- Total Severe Crashes
- Total Crashes/Fatalities Involving a Pedestrian
- Total Crashes/Fatalities Involving a Bicyclist
- % Occurred at Night (Non-Daylight Crashes)
- Crash Rate compared to Statewide Average Crash Rate



EQUITY (DAC Status)

- SRTA RTP Criteria
- RAISE Areas of Persistent Poverty Criteria
- Climate & Economic Justice Criteria
- SB 535 CalEPA Criteria

The overall assessment results are presented in Table 23. As shown, each segment performs poorly based on the above metrics and criteria. Although some segments have more prevalent multimodal infrastructure and amenities, the low stress (safer and more comfortable) travel routes are limited to pockets along the corridor, often separated by barriers like SR 273 and the railroad tracks. The overall lack of connectivity to destinations along the corridor highlights the need to prioritize low-stress travel options. In addition, the results of the safety assessment reveal that, even for segments with lower crash rates compared to statewide averages, the number and severity of crashes along the corridor results in unsafe travel conditions for all modes, including vehicular travel. Lastly, each segment is either partially or fully within a DAC based on one or all the above DAC status criteria. Therefore, poor corridor performance creates a significant burden for the region's DACs.

Table 23 Segment Overall Performance Assessment Results

Segment	1	2	3	4	5	6	7	8	9	10
MOBILITY	Poor	Poor	Poor	Poor	Poor	Poor	Poor	Poor	Poor	Poor
SAFETY	Poor	Poor	Poor	Poor	Poor	Poor	Poor	Poor	Poor	Poor
RELIABILITY	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair
EQUITY (DAC Status)	High DAC	High DAC	High DAC	High DAC	High DAC	Moderate DAC	High DAC	High DAC	High DAC	High DAC