3

Circulation, Open Space, Conservation, and Greenhouse Gas Reduction

Revised Draft | October 2024

3. Circulation, Open Space, Conservation, and Greenhouse Gas Reduction

Responsible management of the built and natural environments now and in the future is essential to ensure the well-being of current and future generations. This chapter focuses on mobility (or "circulation"), along with open space, resource conservation, and greenhouse gas (GHG) emissions.

Mobility is the potential for movement and the ability to get from one place to another in our everyday lives. How we travel to jobs, schools, homes, shopping, and leisure affects our quality of life, and our transportation choices influence the time we spend commuting and how much air pollution we generate and breathe.

Like much of the United States, Santa Rosa's built environment caters to the automobile. Jobs and housing in Santa Rosa are balanced enough that more than one-third of employed community members live and work locally. Most destinations for community members are within five miles, yet driving alone is still the most common way to get around.

Over several decades, improvements to the transportation system have broadened the range of options for community members, including the Sonoma Marin Area Rail Transit (SMART) train, expanded and more frequent bus routes, and new active transportation facilities (walking and rolling). This General Plan 2050 aims to expand transportation options further and support the mobility needs of everyone in Santa Rosa to reduce dependence on single-occupant vehicles and fossil fuels.

Open space in and around Santa Rosa offers multiple community benefits, including visual enjoyment, watershed protection, recreation use, and reduction of hazard risk. Local open space areas include undeveloped lands with significant wildlife habitat and other natural resources, plus more than 100 miles of creeks within the city limits. Conservation is the preservation and protection of resources. It is closely linked with GHG emissions reduction, and both affect every facet of community life.

General Plan Conservation Elements traditionally include agricultural lands, air quality, biological resources and habitat, energy, and open space. General Plan 2050 also integrates GHG emissions reductions in this chapter and throughout the General Plan. The City's approach to GHG emissions reductions emphasizes conservation to reduce GHG emissions from transportation, solid waste, water, wastewater, and other services and meet State and local pollution-reduction targets. The separate Santa Rosa GHG Reduction Strategy, which replaces the prior Community Climate Action Plan, provides an ongoing work program to meet those targets.

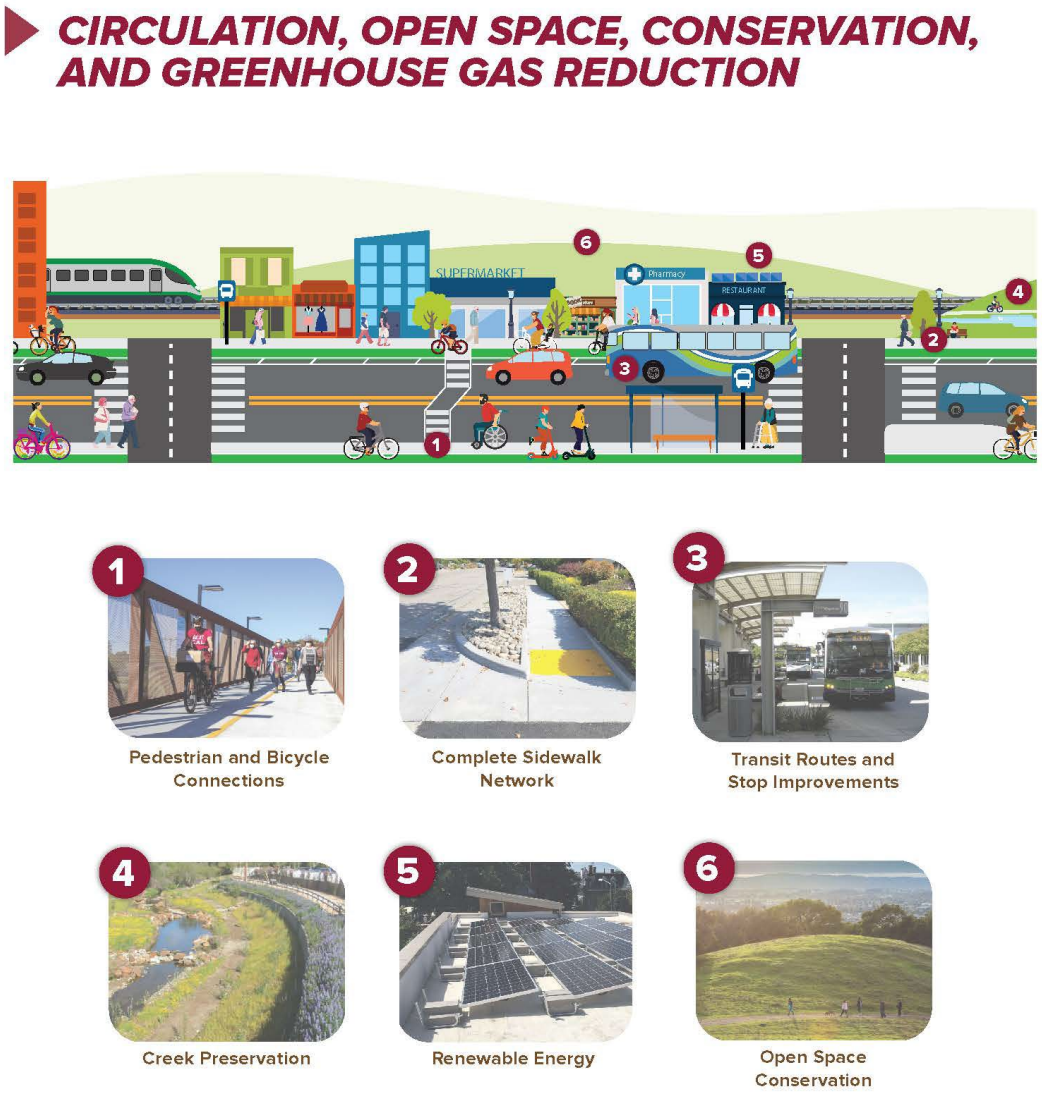
Chapter Contents

The Vision for Santa Rosa is the foundation for the goals in this chapter and their associated policies and actions, especially these two statements from the Vision:

- **Connected:** High-quality, reliable, and safe transit service, bicycle and pedestrian facilities, and other forms of mobility connect all ages across the city and region at all times and support healthy lifestyles, clean air, equity, and resilience.
- **Sustainable:** Natural resources are restored, protected, and expanded to provide accessible green space for everyone in all neighborhoods, mitigate drought, and minimize greenhouse gas emissions.

Figure 3-1 illustrates some of the key concepts in this chapter.

Figure 3-1 Visualizing the Concepts



Circulation

The circulation network significantly influences the lives of community members. It affects:

- **Public health** by how well it promotes active transportation and reduces auto travel, which impacts local air quality.
- **Equity** by how easily community members of all ages, abilities, and income levels can access their daily needs.
- **Individual and City economic health** by how well it supports access to employment, shopping, recreation, and entertainment.
- **Quality of life** by how easy, affordable, dependable, efficient, and enjoyable it is to move around the city.
- **Climate change** by including the transportation sector, which is responsible for the majority of citywide GHG emissions.

Everyone in Santa Rosa needs an equitable and efficient transportation network to meet their needs locally and reduce their dependence on single-occupant vehicles. Some policies and actions in this chapter, as in the other chapters, elevate the needs of Equity Priority Areas, and some goals, policies, and actions focus on the Areas of Change identified through the General Plan update public input process.

Equity Priority Areas are areas in Santa Rosa where residents suffer most from economic, health, and environmental burdens. The General Plan prioritizes the environmental justice needs and health and equity considerations of Equity Priority Areas in the goals, policies, and actions of this and other chapters of the General Plan. Equity Priority Areas are depicted on **Figure 2-4** and discussed in more detail in **Chapters 2** and **6**.

Areas of Change are places where the City will focus efforts to address housing, services, connectivity, and/or infrastructure needs to help make these complete neighborhoods. Goals, policies, and actions throughout the General Plan prioritize Areas of Change for implementing actions that promote complete neighborhoods, such as active transportation infrastructure, quality housing, healthy food options, opportunities for social connections, and access to parks and commercial services.

Areas of Change are depicted on **Figure 2-5** and discussed in more detail in **Chapter 2**.

General Plan 2050 opens opportunities for the city to reduce vehicle miles traveled (VMT) and GHG emissions. In Santa Rosa, 58 percent of GHG emissions (2019) are generated by the transportation sector. This means that how we traverse the city can significantly reduce our carbon footprint.

The General Plan combines land use changes and transportation improvements to achieve a projected reduction in VMT per "service population" (which encompasses all trip types—to work, school, shopping, etc.).

Figure 3-2 depicts the city's existing transportation network and **Figure 3-3** shows the major circulation network improvements in General Plan 2050 that, together with its policies and actions, support more walking, wheeling, and transit use, as well as the comfort and safety of all modes of travel.

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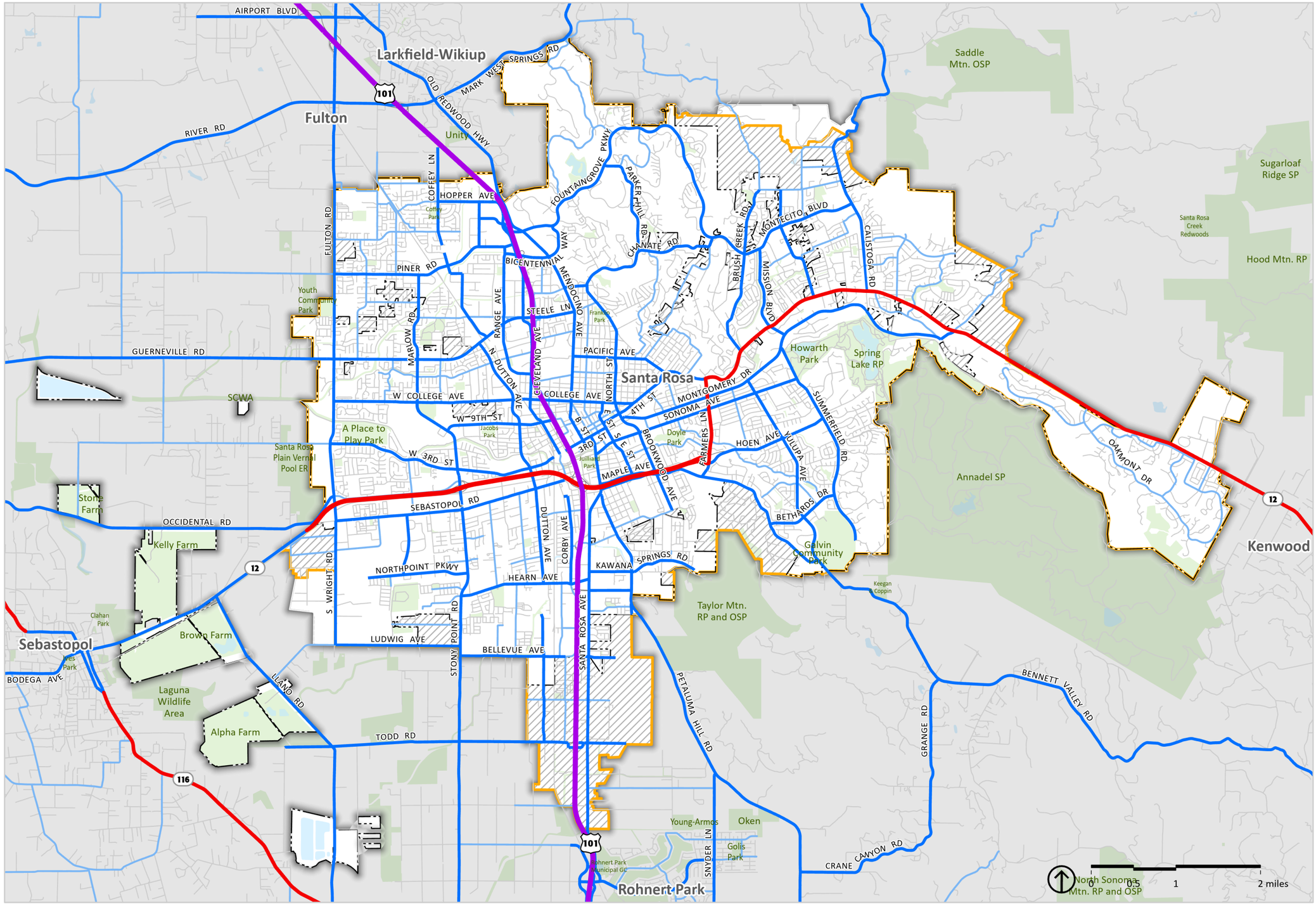
Figure 3-2

Transportation Network



Source: City of Santa Rosa 2023

City of Santa Rosa
SANTA ROSA GENERAL PLAN 2050

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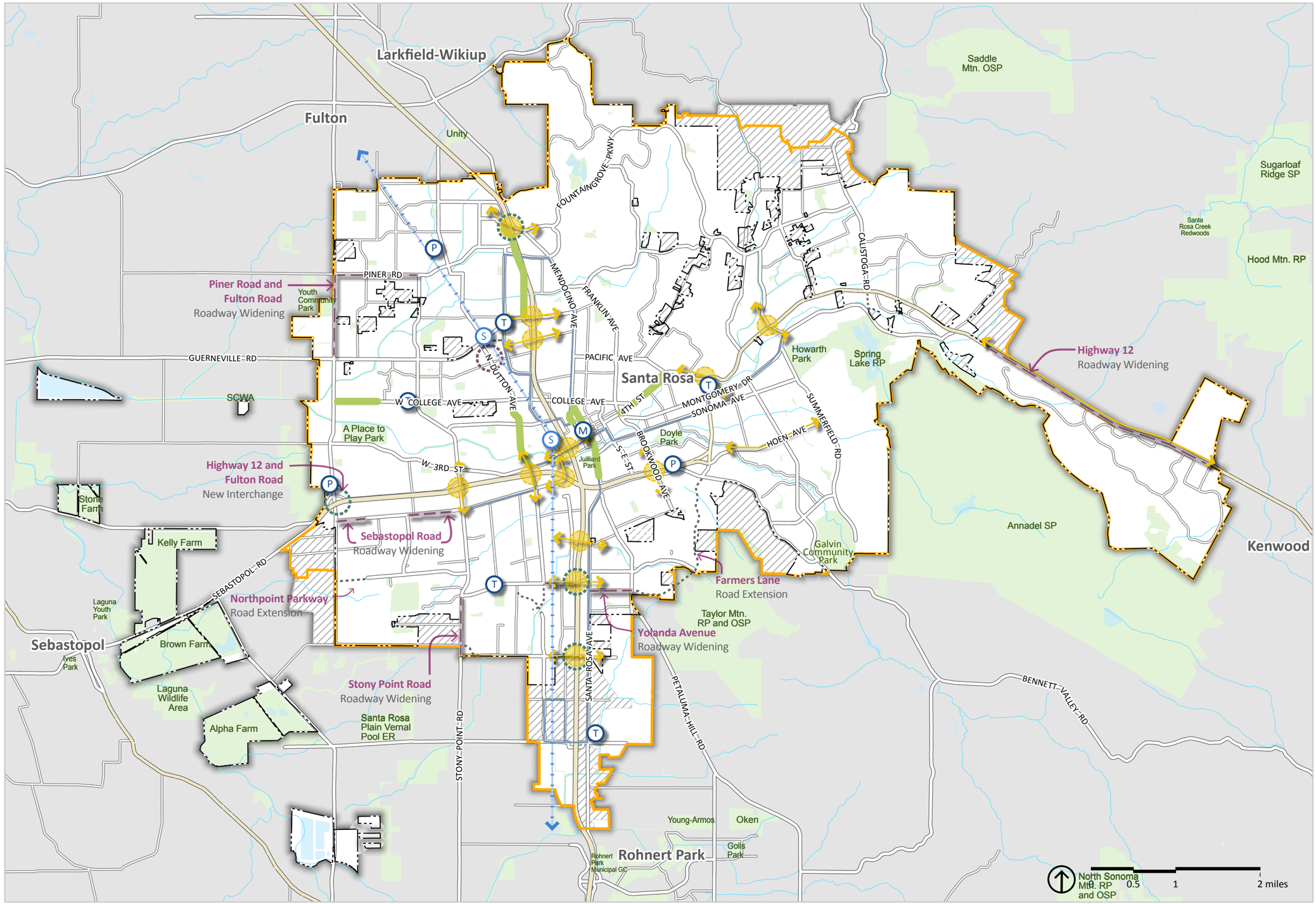
Figure 3-3

Planned Transportation Network Improvements



Legend

- City Limits
- Urban Growth Boundary
- City Sphere of Influence
- Planning Area
- Creeks and Waterways
- Parks and Open Space
- Outside of Planning Area

Transportation

- Highways
- Major Roads
- SMART Transit Center
- SMART Rail Line
- Transit Hub
- Transit Mall
- Transit Park-and-Ride
- Roadway Widening
- Road Diets
- New Major Roads
- Improved Pedestrian/ Bicycle Connections
- New or Widened Auto Overpass including Pedestrian/Bicycle Enhancements
- New Pedestrian/Bicycle Rail Crossing
- High Frequency Bus Route (10-15 min. headways)

Source: City of Santa Rosa 2023

City of Santa Rosa
SANTA ROSA GENERAL PLAN 2050

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Transit Network

CityBus and Regional Transit

Santa Rosa CityBus provides local fixed-route transit and paratransit, with regularly scheduled service to residential neighborhoods, educational facilities, and major job centers.

CityBus covers areas of the city with the highest density and need for transit service, and its ridership levels are the highest in Sonoma County and in the top 10 for transit providers in the Bay Area.

Regional transit operators that serve Santa Rosa include Sonoma County Transit, Golden Gate Transit, Mendocino Transit, Amtrak bus , and the SMART commuter rail system. These regional services connect Santa Rosa with Marin County, Mendocino County, San Francisco, Contra Costa County, and beyond. CityBus coordinates extensively with Sonoma County Transit, Petaluma Transit, Golden Gate Transit, and SMART at monthly meetings of the Sonoma County Transportation Authority (SCTA). CityBus, Golden Gate Transit, and Sonoma County Transit offer paratransit services through a next-day reservation system.

The Santa Rosa Transit Mall is the busiest transit hub in the North Bay, served by five operators. It provides affordable and accessible connections to regional jobs, education, shopping, and recreation.

SMART makes direct commuter rail connections between Santa Rosa and Larkspur and has two stations in Santa Rosa: the Downtown Station and the North Santa Rosa Station. The Downtown Station is within walking distance of the Santa Rosa Transit Mall and has fixed-route direct service connections with six CityBus routes. The North Station is near the Coddingtown Transit hub.

Paratransit

The City of Santa Rosa offers next-day Americans with Disability Act (ADA) paratransit service seven days a week to those who are unable (temporarily or permanently) to use Santa Rosa CityBus because of a disability or health condition. This service will pick up and drop off three-quarters of a mile from CityBus routes, in conformance with the ADA. Golden Gate Transit and Sonoma County Transit also offer paratransit services.

Zero-Emissions Bus Rollout Plan

CityBus developed a Zero-Emission Bus (ZEB) Rollout Plan to meet California's Innovative Clean Transit (ICT) regulation (13 CCR Section2023.1). The ZEB Rollout plans for CityBus to reach full electrification of its 41-vehicle fleet by 2037, three years in advance of the ICT requirement.

Coordinated Fare Payments Across Systems

Clipper is a regional fare payment system and the all-in-one transit card for the Bay Area. Passengers can add value to their card and ride any transit system in the Bay Area (seniors, youth, persons with disabilities, and low-income riders receive discounts on all transit systems). Clipper riders receive a discount when transferring between SMART, CityBus, Golden Gate Transit, and Sonoma County transit.

Fare Free Programs

CityBus has worked to remove barriers to transit by developing fare-free programs for veterans, youth 12th grade and younger, paratransit riders, and Santa Rosa Junior College students. These fare-free programs are also available to employers, residential projects, and any other group of 50 people or more who work under a single entity.

CityBus Improvements

Between March 2015 and August 2016, the City completed a comprehensive redesign of the CityBus system, called Reimagining CityBus. It was the most significant change in Santa Rosa transit service since 1958, when transit service started. The redesign created a new transit system for Santa Rosa, with 15-minute service in high-ridership corridors, more direct routes, more two-way service to reduce transit travel time, and a more convenient and useful bus system. The new bus system is a roadmap for creating a modern transit system that meets the current and future needs of community members. The redesigned bus system is organized into two phases. The City launched Phase One in May 2017. Phase Two will improve rapid bus routes with transit signal priority corridors. The City will improve late-night and weekend service as funding becomes available. The Short-Range Transit Plan (SRTP) updates and further develops this approach every three to five years, as required by the Metropolitan Transportation Commission.

Active Transportation Network

Santa Rosa's comprehensive active transportation network is poised to grow and make the city a walking and bicycling destination. The city has a mild climate, is relatively flat, and has a large network of sidewalks and bicycle infrastructure. The League of American Bicyclists designated Santa Rosa as a silver-level Bicycle-Friendly Community, which the City hopes to raise to platinum status.

The City is currently preparing an Active Transportation Plan that will replace the 2018 Bicycle and Pedestrian Master Plan. The Active Transportation Plan calls for improvements to the active transportation network to adapt to community input and changes in bicycle technology.

The active transportation network provides access to transit, schools, parks, open space, other key destinations, and urban areas such as the downtown, with opportunities for walking and using wheeled devices—wheelchairs, bicycles, scooters, and shared devices (e.g., bicycle and scooter rentals).

The pedestrian network forms the backbone of the city's transportation network. Almost all trips begin and end with walking or using a wheelchair or stroller, so an accessible pedestrian network is critical to get people where they need to go. Various sidewalks, paths, and crosswalks make up the pedestrian network and provide a comfortable walking environment separated from vehicle traffic. These terms are often interchangeable with one another. This General Plan therefore uses the term "pedestrian infrastructure" when referring to any facility that can be safely navigated by a pedestrian. The pedestrian network is also essential for ADA compliance, ensuring access and mobility for users of all ages and abilities.

Currently, most streets have pedestrian infrastructure on at least one side. In the city

limits, property owners are responsible for sidewalk maintenance. Some parts of the city are not required to provide sidewalks, including rural hillside developments or areas built under County jurisdiction and later annexed into the city.

The comprehensive and connected bicycle network is intended to be safe, comfortable, and attractive for people of all ages and skill levels. Its design emphasizes direct and comfortable bicycling routes. The City's Active Transportation Plan calls for adding Class I and Class IV facilities (separated shared use paths) and upgrading existing Class II and Class III on-road facilities to Class I or Class IV where possible. These ongoing improvements are intended to ensure that the bicycle network offers comprehensive accessibility for all, with a goal of increasing the use of bicycles for all types of trips citywide and lowering transportation-related GHG emissions. Bicycles are more equitable than cars for moving around the city, and they increase health-promoting physical activity among community members.

The California Department of Transportation designates **four classes of bicycle facilities:**

Class I shared use paths are often paved paths completely separated from the street. They allow two-way travel and are often considered the most comfortable for children and inexperienced riders. These paths are also commonly shared with pedestrians.

Class II bicycle lanes are striped preferential lanes on the roadway for one-way bicycle travel.

Class III bicycle routes are signed routes where people bicycling share a travel lane with people driving.

Class IV separated bicycle lanes are on-street bicycle facilities that are physically separated from motor vehicle traffic by a vertical element or barrier, such as a curb or vehicle parking aisle.

The City aims to replace vehicle trips of five miles or less with bicycling or walking by offering a network that is safe, convenient, comfortable, and continuous; that links neighborhoods with schools, parks, shopping areas, transit, and employment centers; and that people of all ages and abilities can use. This General Plan includes policies and actions that reinforce the shift away from single-occupant vehicles by increasing the mileage of the active transportation network, filling gaps between existing facilities, and improving what is already on the ground.

Roadway Classifications

The General Plan defines roadways in Santa Rosa; requires adequate egress for all travelers, including emergency vehicles; and calls for visually attractive streetscapes that complement surrounding uses. Roadways in the city fall into four major categories: highways, regional/arterial streets, transitional/collector streets, and local streets, as described below.

Highways

Highways carry local and long-distance traffic at high speeds to, from, and through Santa Rosa. The highways (U.S. Highway 101 and State Route 12) are the responsibility of the California Department of Transportation (Caltrans). Regional transit operators Golden Gate Transit and Sonoma County Transit have services on some local highways.

Regional/Arterial Streets

Regional or arterial streets are major points of connection with each other, neighborhoods, and the rest of the region. They include Parkways and Boulevards.

Parkways

Parkways bring people into the city or carry traffic through natural areas. Posted speed limits may be 45 miles per hour (mph) or higher. When parkways enter city limits, they become boulevards. Local transit operates on some parkways. Bicycle and pedestrian amenities may include:

- Separated bicycle lanes
- Sidewalks
- Planter strips and shade trees

Boulevards

Boulevards provide multilane access to commercial and mixed-use areas and carry some regional traffic, with typical posted vehicle speed limits of 30 to 40 mph. Local transit operates on some boulevards. Bicycle and pedestrian amenities may include:

- Bicycle lanes or separated/protected bicycle lanes (preferred)
- Sidewalks on both sides
- Curb extensions at intersections to support pedestrian crossings
- Planter strips and shade trees

Transitional/Collector Streets

Transitional or collector streets connect residential neighborhoods to commercial centers and service commercial districts. Transitional streets include Avenues and Main Streets.

Avenues

Avenues connect neighborhoods to commercial centers and other neighborhoods and serve as major transit routes. Posted vehicle speed limits are typically 35 mph. Bicycle and pedestrian amenities may include:

- Bicycle lanes or separate/protected bicycle lanes (preferred)
- Sidewalks on both sides
- Curb extensions at intersections to support pedestrian crossings
- Planter strips and shade trees

Main Streets

Main streets provide access to neighborhood commercial and mixed-use areas. Posted vehicle speed limits are typically 25 to 30 mph. Local transit operates on some main streets. Bicycle and pedestrian amenities may include:

- Bicycle lanes or separate/protected bicycle lanes (preferred)
- Sidewalks on both sides
- Curb extensions at intersections and midblock to support pedestrian crossings
- Planter strips and shade trees
- Pedestrian and bicycle accessible paths
- Shade trees
- Lighting
- Wayfinding signage
- Benches
- Trash cans
- Bicycle repair stations

Local Streets

Local streets primarily provide access to neighborhood destinations and make connections in neighborhoods for pedestrian, vehicular, and utility access. Posted vehicle speed limits are 10 to 25 mph. The local streets category includes Paths, Alleys, Lanes, Neighborhood Streets, and Minor Streets.

Shared Use Paths

Off-street paths are not intended for motorized vehicles and are shared by both pedestrians and bicycles. Therefore, off-street paths are also referred to as "shared use paths." Most shared use paths are paved to ensure they are ADA accessible, though other aggregate materials can be used. These types of paths are often found through neighborhoods or along creeks and parks and often follow their own rights-of-way or utility corridors. Shared use paths support VMT reduction, community health, and other City goals. Amenities may include:

Alleys

Alleys are slow speed (10 mph), secondary access ways running behind and sometimes between rows of houses or commercial buildings. Alleys can give service workers easy access to utilities and sanitation and give residents access to garages, backyards, and accessory units.

Lanes

Lanes are narrow, often single-lane, roads that access a small number of homes (typically 12 or fewer), usually near parks, open space, or other locations conducive to limited access. Depending on length, lanes may have sidewalks.

Neighborhood Streets

Neighborhood streets generally serve residential areas with 100 or fewer homes or up to 1,000 average daily trips (ADT). These streets usually extend from two to six blocks. Local transit operates on some neighborhood streets.

Pedestrian amenities may include:

- Sidewalks on both sides
- Curb extensions at intersections to support pedestrian crossings
- Shade trees

Minor Streets

Minor streets accommodate 1,000 or more ADT. Pedestrian amenities may include:

- Sidewalks on both sides
- Curb extensions at intersections to support pedestrian crossings
- Shade trees

Scenic Roads

Scenic roads carry vehicles through areas of notable beauty and/or with natural resources, landmarks, historic features, or cultural interest points. Regulations protect and enhance the aesthetic values of scenic routes by governing the development of property and placement of outdoor advertising. Local transit operates on some scenic roads. Santa Rosa's scenic roads are:

1. Melita Road
2. Los Alamos Road
3. Calistoga Road (north of Badger Road)
4. Highway 12 (from Highway 101 west to Fulton Road)
5. Highway 12 (from Farmers Lane to Calistoga Road)
6. Highway 12 (from Calistoga Road to Oakmont)
7. Montecito Avenue (north of Norte Way to Chanate)
8. Brush Creek and Wallace Roads
9. Fountaingrove Parkway
10. Bennett Valley Road (south of Farmers Lane)
11. Montgomery Drive (from Mission Boulevard to Melita Road)
12. Chanate Road (from Mendocino Avenue to Fountaingrove Parkway)
13. Petaluma Hill Road (from Colgan Avenue to the Urban Growth Boundary)
14. Highway 101 (contiguous from northern to southern city limit)
15. Los Olivos Road
16. Manzanita Avenue
17. Newanga Avenue
18. Francisco Avenue
19. Channel Drive
20. Wright Road South
21. Ludwig Avenue
22. Burbank Avenue (from the northerly boundary of Roseland Creek Community Park to Hearn Avenue)

Goals, Policies, and Actions

Goal 3-1: Provide an integrated land use and transportation system with safe and efficient movement of people and goods for all modes of travel that prioritizes reduction of VMT and transportation-related GHG emissions.

Policy 3-1.1: **Work with partner agencies to reduce VMT using existing techniques and explore feasibility of new techniques as they arise.**

Action 3-1.1: *Require an analysis of projected VMT as part of the environmental review process for projects with the potential to increase VMT. (EIR)*

Action 3-1.2: *Work with SCTA and other local and regional partners to explore developing a VMT mitigation bank alternative for eligible projects to fund VMT reduction efforts.*

Action 3-1.3: *Continue to participate in discussions addressing regional through-traffic with SCTA, the County of Sonoma, MTC, and other municipalities, prioritizing investments that will reduce VMT and GHG emissions.*

Vehicle Miles Traveled (VMT) and Level of Service (LOS)

Traffic analyses for projects focus on VMT; however, the City continues to consider LOS for some projects. While LOS analyses tend to focus on vehicle traffic, these analyses can lead to benefits for public and active transportation modes. For instance, LOS analyses evaluate the degree to which traffic moves through intersections citywide. In cases where LOS at an intersection is poor, and traffic is moving slowly or must wait for several cycles, there are negative impacts felt by public transportation systems wherein a bus may also need to wait several cycles through a traffic signal. Further, having adequate performance at intersections can also ensure that traffic signals do not become higher stress environments for bicycles and pedestrians and that adequate time is allotted for non-vehicle intersection crossings.

The City requires that developers of future projects submit traffic memos or studies, depending on the size of a proposed project. These documents cover existing and proposed vehicle miles traveled, existing and proposed LOS, existing and proposed trip generation, existing and proposed parking capacity, as well as a discussion of on-site and nearby bicycle and pedestrian conditions, access to public transit, and general site transportation safety. These documents are critical for the City to understand how all modes of transportation may interact with one another on and near a proposed development site, ensuring that improvements are tangible for all road users.

Action 3-1.4: *Coordinate transportation plans with those of Sonoma County, MTC, and the State of California, to support interregional travel improvements, particularly connections to public and active transportation modes.*

Policy 3-1.2: **Promote a citywide mode shift away from single-occupancy vehicles to support ambitious VMT and GHG reduction goals.**

Action 3-1.5: *Develop a process that invests in and prioritizes non-automobile modes of transportation in capital improvement projects to reduce VMT and GHGs, prioritizing, in order:*

1. Active transportation modes, including walking, bicycling, and rolling.
2. Public transportation, including inter-city and regional systems.
3. Other shared vehicles such as carpool, vanpool, and rideshare/transportation network companies.

Action 3-1.6: *Track the city's mode split and progress towards reducing single-occupancy vehicle use.*

Action 3-1.7: *Prioritize transportation alternatives such as active and public transportation, that reduce demand on existing facilities in lieu of widening roadways and further impacting the natural environment.*

Action 3-1.8: *Work with regional partners to develop mobility hubs as locations for multi-modal transportation, specifically accommodating active and public transportation modes.*

Action 3-1.9: *Update City Traffic Operational Analysis guidelines to reflect policies prioritized in the General Plan.*

Policy 3-1.3: **Promote land use, development, and transportation demand management (TDM) strategies that reduce VMT and dependence on single-occupancy vehicle trips.**

Action 3-1.10: *Continue to require grid street patterns in new residential areas to disperse local neighborhood traffic and limit excessive volumes on any street.*

Action 3-1.11: *Update the Zoning Code to discourage cul-de-sac design and require any new developments with cul-de-sacs or other limited street connectivity layouts to provide enhanced connectivity for pedestrians and bicyclists to sites adjacent to or behind the new developments.*

Action 3-1.12: *Work with developers to ensure new development improves multimodal transportation infrastructure in front of and adjacent to the development, with effective connections to existing infrastructure or the means to accommodate future connections.*

Action 3-1.13: *Work with developers in the beginning phases of project conception to install Class I and Class IV bicycle lanes, wherever feasible.*

Action 3-1.14: *Provide information on funding opportunities and other incentives designed to encourage developers of sites in Transit Priority Areas and Priority Development Areas to integrate transit-supportive components, such as unlimited pass programs, transit-serving pedestrian infrastructure, and/or transit subsidies, as appropriate.*

Action 3-1.15: *Continue to implement State guidelines to reduce or eliminate vehicle parking requirements, specifically in the downtown and in Transit Priority Areas.*

Action 3-1.16: *Periodically update City impact fees to require that development projects pay a fair share of costs for multimodal transportation systems improvements.*

Action 3-1.17: *Consider wildlife passage in road location and design in areas near parks, open spaces, creeks, and other undeveloped lands.*

Goal 3-2: Provide a safe and accessible active and public transportation network that emphasizes active transportation connections and service to Equity Priority Areas and Areas of Change.

Policy 3-2.1: **Ensure that the active transportation network remains in good condition by maintaining facilities, tracking the state of infrastructure, and managing the network in a way that serves all users.**

Action 3-2.1: *Inventory and map the city's existing active transportation network and add new facilities to the map as they are completed.*

Action 3-2.2: *Use mapping to identify gaps in the active transportation network, and complete those gaps, except where it may be infeasible due to lack of City right-of way.*

Action 3-2.3: *Update the City Code to include sidewalk standards for all applicable zoning districts.*

Action 3-2.4: *Improve connections in the active transportation network to ensure that all who choose to walk, roll, or ride have adequate access to public transportation amenities, especially in Equity Priority Areas and Areas of Change.*

Action 3-2.5: *Provide street lighting that is energy-efficient, attractive, and appropriate to the character and scale of the neighborhood or district, and that contributes to pedestrian, bicycle, and vehicular safety.*

Action 3-2.6: *Ensure that major arterials have active transportation infrastructure that accommodates all road users and does not present a barrier to regional travel for any mode.*

Action 3-2.7: *Improve active transportation crossings of major transportation barriers, such as the SMART rail lines, Highway 101, and Highway 12.*

Action 3-2.8: *Support efforts to acquire local, regional, State, and federal funding for transportation improvements.*

Policy 3-2.2: Continue to expand and improve the active transportation network toward completing a safe, continuous, convenient, and attractive network of designated routes that connect all neighborhoods and that is equitably accessible for all ages and abilities.

Action 3-2.9: *Implement and update the City's Active Transportation Plan, as appropriate, recognizing that:*

- *The Active Transportation Plan will create a blueprint for the City to construct a low-stress active transportation network for all ages and abilities.*
- *The Active Transportation Plan will prioritize separating network users in time and space to increase user safety and comfort.*
- *Each update of the Active Transportation Plan will result in a General Plan Amendment and will therefore become policy and action incorporated into the General Plan.*

Action 3-2.10: *Use the Urban Streets Design Guide and the Urban Bikeways Design Guide created by the National Association of City Transportation Officials (NACTO) as guides to update City Street Design and construction standards and implement a low-stress network for all ages and abilities, specifically through protected and separated bicycle lanes.*

Action 3-2.11: *Support pedestrians and bicyclists by incorporating their needs and interests into regular planning activities for all City projects, including, at a minimum, any project on the Capital Improvements Project list.*

Action 3-2.12: *Identify and analyze arterial corridors and improve them by preparing and implementing corridor plans to address all transportation modes, specifically active transportation, focusing on separated or protected facilities for all ages and abilities.*

Action 3-2.13: *Ensure that there are no physical barriers to bicyclists or pedestrians as they cross high traffic roadways at intersections of Class I or Class IV facilities through improvements such as crosswalks and beacon lights.*

Action 3-2.14: *Ensure that improvements to the active transportation network include amenities that enhance the user experience, such as lighting, trashcans, benches, and traffic-calming enhancements.*

Action 3-2.15: *Ensure that the needs of seniors, children, people with disabilities,*

and those using strollers are addressed through sufficient and continuous sidewalks, crosswalks, and reasonable crossing distances.

Action 3-2.16: *Continue to upgrade curb ramps and other pedestrian infrastructure in compliance with the Americans with Disabilities Act.*

Action 3-2.17: *Support Safe Routes to Schools programs to ensure all students can safely travel to and from school using any mode of transportation, with emphasis on active modes.*

Action 3-2.18: *Prioritize addressing active transportation deficiencies in Equity Priority Areas.*

Action 3-2.19: *Continue to look for opportunities to install High-Intensity Activated Crosswalks and Rectangular Rapid Flashing Beacons to increase pedestrian safety.*

Policy 3-2.3: Encourage local and interregional active transportation travel.

Action 3-2.20: *Continue to work with internal, local, and regional partners to support the existing and future network of Class I shared use paths.*

Action 3-2.21: *Prioritize bicycle and pedestrian pathways in areas that connect to, or enhance, regional active transportation facilities such as the Joe Rodota Trail and Santa Rosa Creek Trail.*

Action 3-2.22: *Integrate shared use paths along creek corridors, railroad rights-of-way, and include them in park master planning and design.*

Action 3-2.23: *Work with the County of Sonoma and Caltrans on the development of the planned Class I shared use path along Highway 12 to provide a regional connection to the City of Sonoma.*

Action 3-2.24: *Work with the County of Sonoma, SMART, and other stakeholders to ensure all Class I shared use paths are regularly maintained and kept open for active transportation uses.*

Policy 3-2.4: Identify, preserve, and enhance City-designated scenic roads throughout Santa Rosa in both rural and developed areas, to encourage bicycle commuting and recreation.

Action 3-2.25: *Provide bicycle lanes along scenic roads where right-of-way exists.*

Action 3-2.26: *Discourage on-street parking along scenic roads; bus stops or scenic overlooks may be provided at appropriate intervals.*

Action 3-2.27: *Ensure that the size, amount, and placement of signage along scenic roads does not detract from the area's scenic character.*

Action 3-2.28: *Update the Zoning Code to develop standards for scenic roadways identified in the General Plan that do not have corresponding development standards in the Zoning Code, including:*

- *Highway 12 (from Highway 101 west to Fulton Road)*
- *Highway 12 (from Farmers Lane to Calistoga Road)*
- *Fountaingrove Parkway*
- *Bennett Valley Road (south of Farmers Lane)*
- *Montgomery Drive (from Mission Boulevard to Melita Road)*
- *Chanate Road (from Mendocino Avenue to Fountaingrove Parkway)*
- *Petaluma Hill Road (from Colgan Avenue to the Urban Growth Boundary [UGB])*
- *Highway 101 (contiguous from northern to southern city limit)*
- *Newanga Avenue*
- *Channel Drive*
- *Wright Road South*
- *Ludwig Avenue*
- *Burbank Avenue*

Policy 3-2.5: **Address traffic volumes and speeds in neighborhoods to reduce cut-through traffic and promote use of existing low-stress streets for active transportation travel.**

Action 3-2.29: *Reduce neighborhood traffic in all areas of the city by ensuring arterial and collector streets can accommodate all modes of transportation.*

Action 3-2.30: *Improve the safety and efficiency of arterial and collector streets by revising the Street Design and Construction Standards to:*

- *Reduce the number of driveways and intersections to limit conflict points.*
- *Avoid unnecessary residential access.*
- *Install and facilitate timing of traffic signals.*
- *Ensure continuous sidewalks and bicycle lanes where feasible.*
- *Implement design best management practices from guidelines such as NACTO's Urban Streets Design Guide and the Urban Bikeway Design Guide, to ensure facilities are as low stress as possible.*

Action 3-2.31: *Implement traffic-calming measures, where appropriate, to improve neighborhood livability and preserve low-stress active transportation routes, such as:*

- *Narrowing street widths.*
- *Adding curb extensions to reduce crossing distances for pedestrians.*
- *Adding or removing on-street parking, depending on feasibility and right-of-way.*
- *Adding chicanes, chokers, or diverters to slow traffic.*
- *Creating rough-paved crosswalks to increase visibility and encourage slow vehicle movement.*

- *Adding rumble strips or speed tables with bicycle cutouts to slow vehicles but allow for seamless bicycle passage.*
- *Adding planted islands.*

Action 3-2.32: *Include active transportation network improvements and traffic calming in regular paving and maintenance projects unless infeasible due to engineering or conflict with emergency access.*

Action 3-2.33: *Construct or require roundabouts in lieu of stop/signal-controlled intersections, where appropriate, to improve safety, reduce delay and idling time, and lower vehicle emissions.*

Goal 3-3: Transition away from single-occupancy vehicles.

Policy 3-3.1: **Continue to offer and improve TDM programs that incentivize a shift away from single-occupancy vehicles.**

Action 3-3.1: *Work with local employers and existing residential and commercial development to expand TDM and related efforts to help meet employee transportation needs through modes that reduce VMT from single-occupancy automobile trips less than five miles, such as:*

- *Unlimited free access to transit service (CityBus, Sonoma County Transit, and SMART).*
- *Funding for increased transit frequency.*
- *Paid incentives to active transportation and micromobility users, including a transportation allowance and secure on-site bicycle parking, lockers, showers, and other facilities that support bicycling commuting to and from work.*
- *Programs and incentives to expand carpooling, vanpooling, and car sharing.*
- *Staggered work shifts, flex time (e.g., 9/80 work schedule), and telecommuting.*
- *Paid-parking disincentives for single-occupant vehicles and/or parking cash-out incentives.*

Action 3-3.2: *Implement a TDM program for City employees—potentially in partnership with other local governments, public agencies, and transit providers—and promote the program as a model for larger local employers.*

Action 3-3.3: *Provide or require additional bicycle parking at key destinations and in plain sight to support a car-free environment in high-density areas.*

Action 3-3.4: *Work with developers to ensure bicycle-friendly design, such as visible and secure bicycle parking and shower and changing facilities.*

Action 3-3.5: *Plan for e-bicycles, including publicly available charging and secure parking locations.*

Policy 3-3.2: **Bolster outreach, marketing, and education about non-automobile modes of transportation, especially. Outreach should pay for Equity Priority Areas and Priority Development Areas.**

Action 3-3.6: *Provide educational materials to increase driver awareness and understanding of bicyclist and pedestrian needs.*

Action 3-3.7: *Continue to promote events, such as Bike to Work Day, and look for new opportunities to engage with the public.*

Action 3-3.8: *Adopt a standard design and style for outreach materials to create a distinct and recognizable brand identity.*

Action 3-3.9: *Encourage ridership on public transit systems through marketing and promotional efforts and incentives.*

Policy 3-3.3: **Encourage transit ridership to reduce GHG emissions and provide convenient and efficient public transportation to workplaces, shopping, and other destinations.**

Action 3-3.10: *Identify first-/last-mile challenges citywide and work with transit and rideshare companies to provide solutions.*

Action 3-3.11: *Explore expanding paratransit to include on-demand services.*

Action 3-3.12: *Continue to require transit-supportive TDM measures for new development, including CityBus/Sonoma County Transit/SMART pass products.*

Policy 3-3.4: **Provide convenient, efficient transit routes to major employment, education, recreation, community, and shopping centers throughout the city, SMART stations, and shopping centers.**

Action 3-3.13: *Continue to implement and periodically update Transit Master Plans, such as Reimagining CityBus and the Short-Range Transit Plan, and work with MTC and other agencies on regional transit-supporting initiatives.*

Action 3-3.14: *Require new development to provide transit improvements, including:*

- *Direct, paved pedestrian access to transit stops.*
- *Bus turnouts and weather-protected shelters.*
- *Bus-ready travel lanes.*

Action 3-3.15: *Improve the reliability, efficiency, frequency, and travel time of transit service to meet or exceed performance standards of the most recent Santa Rosa CityBus Short Range Transit Plan and improve transit service along corridors where increased densities are planned.*

Action 3-3.16: *Work with local and regional transportation agencies to coordinate multimodal*

connections throughout the city, including timed transfers connecting different transit routes and future rail service, bicycle parking and lockers at transit centers, and transit stops at park-and-ride lots.

Action 3-3.17: *Identify opportunities to improve pedestrian, bicycle, micromobility (such as bicycle or scooter share), and bus transit connections between existing transit stations, to SMART stations, and to future mobility hubs.*

Action 3-3.18: *Coordinate plans for transit system changes and expansions with local land use planning to ensure consistency.*

Action 3-3.19: *Work with private and public sector partners on "safe ride home" transit programs and advertising campaigns targeting wine industry tourists or anyone under the influence of alcohol.*

Action 3-3.20: *Expand the hours of transit service, including during nights and weekends.*

Policy 3-3.5: **Work with SCTA and MTC to promote Safe Routes to Transit projects and programs and submit applications for funding of local Safe Routes to Transit projects and programs.**

Action 3-3.21: *Explore ways to ensure that transit hubs in the city, especially the Transit Mall, Downtown SMART Station, and North SMART Station, are active, safe, and efficiently accessed by local transit.*

Action 3-3.22: *Integrate the provision of passenger information, real-time arrival, fare structures, and service planning.*

Policy 3-3.6: **Ensure that the transit system serves all members of the community equitably, especially in Equity Priority Areas.**

Action 3-3.23: *Evaluate local transit services to identify and address accessibility barriers.*

Action 3-3.24: *Reduce the cost of transit, especially for low-income individuals, by expanding the unlimited Pass Program that serves students through grade 12, Santa Rosa Junior College students, City employees, paratransit users, and veterans.*

Action 3-3.25: *Develop an accumulator transit pass that reduces the cost burden for frequent riders.*

Action 3-3.26: *Work with SCTA and local transit operators to explore financial incentives, reduced fares for public transportation, and a subregional or countywide universal basic mobility program.*

Action 3-3.27: *Identify strategies to increase residents' access, especially in low-income areas, to transit hubs, jobs, and areas with goods and services, such as by enhancing existing transit hubs, constructing new transit hubs, and/or providing new first-/last-mile services.*

Action 3-3.28: *Preserve options for future SMART rail stations by zoning land in proximity to the potential station sites for higher residential densities and/or mixed-use development.*

Action 3-3.29: *Support efforts to promote SMART for commuting and tourism and to provide and maintain convenient and accessible routes to transit, including shared use paths.*

Goal 3-4: Mitigate the traffic-related impacts of new land uses.

Policy 3-4.1: **Ensure that new development does not impede efficient, safe, and free-flowing circulation for all traffic modes.**

Action 3-4.1: *Require traffic studies for development projects that may have a substantial impact on the circulation system and use traffic study findings to define improvements that would also support active and public transportation.*

Action 3-4.2: *Monitor level of service (LOS) at key intersections to ensure that improvements or alterations to improve corridor LOS do not cause severe impacts at any single intersection for any mode of transportation.*

Policy 3-4.2: **In areas other than the downtown, strive to meet intersection LOS D to maintain adequate operation of the street network and minimize cut through traffic on residential streets.**

Action 3-4.3: *Monitor regional/arterial street LOS at regular intervals to determine if local LOS goals are being met, and provide information needed to maintain a calibrated citywide traffic model.*

Open Space and Conservation

Open Space

The benefits of open space include visual enjoyment, natural resource conservation (e.g., plant and wildlife habitats, creek corridors, hillsides, and soils), water quality protection, recreational use, and hazard reduction (e.g., flood control and fire management).

Open spaces in and around Santa Rosa include agriculture, greenbelts (community separators), natural resources, and park and recreation areas. Preservation of open space for each of these uses is important to the quality of life and semirural character valued by community members, and a continuous network of open space land has more benefits for plant and habitat conservation than disconnected open spaces. General Plan policies address public access to these areas and expansion of the regional open space network. **Figure 2-6**, **General Plan Land Use,** shows designated open space areas.

Biological Resources and Waterways

Biological resources in the Santa Rosa area are concentrated on the Santa Rosa plain to the west and in the uplands to the east, with creeks forming critical connections. Sensitive resources on the plain include numerous vernal pools and their associated species, as well as surrounding grasslands, and upland resources to the east include hillside open spaces, creeks, and woodlands. Biological resources in the city include sensitive plants and animals, creeks, and wetlands, including vernal pools.

Santa Rosa Creek originates in the headwaters of Mount Hood and runs roughly east to west through the city and into the Laguna de Santa Rosa. Other streams, including the lower reaches of Matanzas Creek, run through or near the city on their way to joining Santa Rosa Creek.

Citywide Creek Master Plan

The Citywide Creek Master Plan sets goals and policies for specific waterways in Santa Rosa. The plan details the creek environments in the city and designates areas for recreation, enhancement, or preservation. The City expects implementation of the Master Plan to improve wildlife habitats and increase recreational opportunities, drainage capacity, and flood control.

Groundwater

Most parcels in the General Plan Planning Area are served by the municipal water system and do not use private groundwater wells. Still, there are about 600 wells in the Planning Area that are in the Santa Rosa Plain Groundwater Subbasin and overseen by the Santa Rosa Plain Groundwater Sustainability Agency (SRP GSA), a local agency with broad groundwater management authority in accordance with the Sustainable Groundwater Management Act. In January 2023, SRP GSA received final State approval of its Groundwater Sustainability Plan (GSP), which calls for achieving "sustainability" by 2042 and includes measurable objectives to ensure the sustainable management of groundwater-dependent ecosystems and interconnected surface waters. There are two other groundwater subbasins in the Planning Area along the eastern edge of the city: the Santa Rosa Valley – Rincon Valley Subbasin and the Kenwood Valley Subbasin. Total groundwater use of each is less than 1,000 acre-feet per year so they are not required to form GSAs or prepare GSPs.

Vegetation

Vegetation types in Santa Rosa include grasslands, woodlands, riparian areas, and vernal pools. Small areas of discrete habitat, such as vernal pools, support distinct sets of plant and animal species, which are generally sensitive to human disturbance.

Wildlife

Various vegetation types provide habitat for different species of wildlife, and the mingling of habitats is an advantage for species that use the "edges" between them. Open space areas support smaller species, including songbirds, rodents, and insects, and provide habitat for sensitive species, including nesting raptors.

The streams flowing through the city provide both instream and riparian habitat. Aquatic species need instream habitat, and Santa Rosa Creek and several of its tributaries carry aquatic

species such as steelhead/rainbow trout. Riparian habitat supports its own community of plants and animals, including amphibians, and functions as a migration corridor between habitats separated by development. Both of these types of habitats support a variety of animal species, from streambed invertebrates to larger fish and animals such as herons and egrets that feed on them. Preserving wildlife habitat and restoring riparian corridors protects wildlife species and provides tranquil open spaces in the city's urban landscape.

Agricultural Resources

Agricultural resources in the Santa Rosa Planning Area give community members a sense of rural character and access to fresh goods and produce. Working with regional partners to conserve agricultural resources—including crop fields, grazing land, and vineyards—will help sustain the sense of nature for the greater Santa Rosa area and contribute to the region's health, economic vitality, and resilience.

Air Quality

Reducing air pollutants benefits community health and quality of life. The City of Santa Rosa works with the Bay Area Air Quality Management District to address air quality in Santa Rosa, which has generally improved with cleaner motor vehicles, less residential and agricultural burning, and reformulated consumer products.

Efficient and sustainable development patterns, strong connections between different land uses, clean and renewable energy sources, alternative transportation modes, open space preservation, and construction dust abatement also have all contributed to better air quality in Santa Rosa, but there is still room for improvement.

Carbon sequestration is the process of capturing and storing carbon dioxide in a solid or liquid form so it cannot return to the atmosphere and contribute to climate change. It can be achieved through either natural or artificial processes.

- United States Geological Survey.

Goals, Policies, and Actions

Goal 3-5: Protect, expand, maintain, and restore natural resources, open space, and the limited remaining agricultural land.

Protection of Open Space System

Policy 3-5.1: **Maximize the benefits of open space, including by supporting passive recreation and conservation.**

Action 3-5.1: *Give priority to multi-benefit recreational projects that maximize pollution reduction and adaptation, carbon sequestration, heat-island reduction, stormwater capture that increases infiltration, habitat protection and biodiversity, and/or community health improvements.*

Action 3-5.2: *Coordinate with public and private entities to locate new shared use paths and public access paths to parks, open spaces, and drainage ways in and near the city.*

Action 3-5.3: *Coordinate with regional partners to connect the city's open space system with Sonoma Water access roads and the Bay Area Ridge Trail.*

Policy 3-5.2: **Preserve, enhance, and expand a connected network of open spaces for recreation, natural and cultural resource protection, and mobility of species by way of critical linkages between open space lands.**

Action 3-5.4: *Collaborate with regional agencies and private landowners to link inaccessible open spaces to benefit the protection of special environments and ecosystems, such as wetlands, plant communities, wildlife habitats and corridors, historic resources, and tribal and cultural resources.*

Environmental Resource Protection

Policy 3-5.3: **Conserve and protect creeks, wetlands, vernal pools, wildlife ecosystems, rare plant habitats, and waterways from development.**

Action 3-5.5: *Explore options that help to conserve wetlands and rare plants, riparian habitat and other sensitive natural communities, and essential habitat for special-status species, such as:*

- *Avoidance of sensitive habitat.*
- *Clustered development.*
- *Transfer of development rights.*
- *Compensatory mitigation, such as habitat restoration or creation.*

Action 3-5.6: *Protect high-quality wetlands and vernal pools from development and other activities.*

Action 3-5.7: *Continue to consult with the California Department of Fish and Wildlife to identify significant*

environments and priorities for acquisition or maintenance of open space areas based on biological and environmental concerns and develop a strategy for maintaining areas that will preserve the populations of plants and animals currently found in the UGB. (EIR)

Action 3-5.8: *Inventory wetlands, floodplains, marshlands, and adjacent lands that could potentially support climate adaptation (e.g., through flood management, filtration, or other beneficial ecosystem services) and mitigation (e.g., carbon sequestration).*

Action 3-5.9: *Explore using mitigation fees to protect environmentally sensitive resource lands and/or endangered species habitat areas that are subject to development.*

Action 3-5.10: *Continue to implement existing regulations and procedures, including subdivision guidelines, zoning, design review, and environmental law, to conserve wetlands and rare plants, riparian habitat and other sensitive natural communities, and essential habitat for special-status species. (EIR)*

Policy 3-5.4: **Use existing (and/or restore historical) natural features and ecosystem processes for conservation, preservation, or sustainable management of open space, including, but not limited to, aquatic or terrestrial vegetated open space, systems that provide clean water, conserve ecosystem values and functions, and provide a wide array of benefits to people and wildlife.**

Action 3-5.11: *Require a qualified biologist to prepare a biological resource assessment as part of project approval for proposed development on sites that may support special-status species, sensitive natural communities, important wildlife corridors, or regulated wetlands and waters to identify potential impacts and measures for protecting the resource and surrounding habitat. (EIR)*

Action 3-5.12: *Require that construction or other ground-disturbing activities avoid nests of native birds when in active use by implementing protection measures to ensure compliance with the California Fish and Game Code and federal Migratory Bird Treaty Act. Compliance guidelines are detailed in the General Plan Environmental Impact Report. (EIR)*

Action 3-5.13: *Develop and adopt a bird-safe design ordinance to provide specific criteria and refined guidelines as part of design review of new buildings and taller structures to protect birds from injury and mortality from collisions with buildings, towers, and other human-made structures. (EIR)*

Policy 3-5.5: Maintain, restore, and protect the city's waterways.

Action 3-5.14: *Implement the Citywide Creek Master Plan and promote a "one water" approach that teaches preservation and stewardship of local creeks and water resources.*

Action 3-5.15: *Periodically review the status of local creeks and plan for ongoing restoration, planning, and stewardship, as identified in the Citywide Creek Master Plan.*

Action 3-5.16: *Seek funding to maintain and restore citywide creeks, including for recreational opportunities linked to creeks as well as for flood control.*

Action 3-5.17: *Implement stormwater pollution prevention outreach to increase community awareness of pollution impacts to creeks and preserve waterways.*

Policy 3-5.6: Restore channelized waterways and avoid creating additional channelized waterways unless no other alternative is available to protect human health, safety, and welfare.

Action 3-5.18: *Restore and enhance the ecological function of channelized waterways, consistent with the Citywide Creek Master Plan, and avoid channelizing additional segments of the waterways system.*

Policy 3-5.7: Ensure that construction adjacent to creek channels is sensitive to the natural environment, preserves topography and vegetation along the creek, does not disrupt or pollute the waterway, and provides an adequate setback buffer.

Action 3-5.19: *Require new development along channelized waterways to establish an ecological buffer zone between the waterway and development that also provides opportunities for shared use paths and recreation. (EIR)*

Action 3-5.20: *Require new development to maintain an adequate setback from channelized waterways to recognize the 100-year flood elevation, with setbacks in the Zoning Code as minimums and larger setbacks encouraged in accordance with Restoration Concept Plans to meet restoration and enhancement goals. (EIR)*

Policy 3-5.8: Encourage multiple uses of waterways, including:

- Flood mitigation and storage;
- Groundwater recharge;
- Opportunities for restoration and stewardship;
- Climate adaptation;
- Wildlife habitats;
- Passive recreational open space uses;
- Nature study;
- Pedestrian and bicycle circulation; and
- Other compatible outdoor uses.

Policy 3-5.9: **Orient new development and buildings toward creeks and greenways while providing privacy, security, and an open transition between public and private open spaces.**

Low-impact development refers to systems and practices that use or mimic natural processes that result in the infiltration, evapotranspiration, or use of stormwater to protect water quality and associated aquatic habitat. The term **green infrastructure** refers to the management of wet weather flows that use these processes, and the patchwork of natural areas that provide habitat, flood protection, cleaner air and cleaner water. At both the site and regional scale, low-impact development/green infrastructure practices aim to preserve, restore and create green space using soils, vegetation, and rainwater harvest techniques. Examples of green infrastructure include rain harvesting systems, bioswales (channels that provide stormwater treatment and retention), permeable pavements, green roofs, and urban tree canopies.

- United States Environmental Protection Agency (US EPA), 2024

Ecosystem Services

Goal 3-6: Use nature- and science-based strategies to preserve and create environments that provide ecosystem benefits.

Policy 3-6.1: **Protect groundwater recharge areas, particularly creeks and riparian corridors.**

Action 3-6.1: *Work with the Santa Rosa Plain Groundwater Sustainability Agency to identify and map groundwater recharge areas and provide groundwater recharge area maps to local agencies to foster planning that protects groundwater supplies.*

Policy 3-6.2: **Integrate green infrastructure into planned and future city infrastructure projects, including road improvements, parks, and private development.**

Action 3-6.2: *Promote projects that use green infrastructure, such as bioswales, rain gardens, planter boxes, permeable pavements, and green roofs.*

Action 3-6.3: *Work with public and private landowners to decrease the risk of flooding through projects that reduce and/or store runoff during rainfall events.*

Action 3-6.4: *Use the US Environmental Protection Agency (EPA) Storm Smart Cities guidance to integrate green infrastructure during*

project review, and updates to the Local Hazard Mitigation Plan.

Action 3-6.5: *Explore opportunities to partner with US Environmental Protection Agency to develop sustainable design strategies through the Greening America's Communities Program.*

Policy 3-6.3: **Focus green stormwater improvements in areas at risk of flooding with an emphasis on Equity Priority Areas in flood-prone areas.**

Action 3-6.6: *Pursue new funding mechanisms to support green infrastructure projects at the local and regional level.*

Action 3-6.7: *Lobby for regional and State funding to incentivize greening features in transportation projects.*

Urban greening refers to activities "to plan, plant, care [for], and manage flora, structures and spaces, which lead to increased forest canopy, reduced storm water runoff, improved air and water quality, energy conservation, open space, and ultimately, more sustainable communities." Examples of urban greening include tree planting, curbside gardens, and converting urban spaces into park lands.

- California Natural Resources Agency, 2018

Action 3-6.8: *Continue to require new development and redevelopment projects to comply with low-impact development measures and incorporate green infrastructure / urban greening practices to reduce pollutants and runoff flows.*

Action 3-6.9: *Explore requirements for sustainable landscaping practices and a rating system (such as the Bay-Friendly Rated Landscape Program from ReScape California) for new landscaping.*

Action 3-6.10: *Explore requirements for major development and redevelopment projects to construct and maintain green infrastructure in the adjacent public right-of-way.*

Action 3-6.11: *Install trees, solar panels, and permeable paving in parking lots.*

Action 3-6.12: *Offer incentives for painting flat or nearly flat roofs white or light colors to minimize heat absorption.*

Policy 3-6.4: **Build community capacity/knowledge related to climate adaptation.**

Action 3-6.13: *Educate and train residents, City staff, and partner organizations on how to incorporate biodiversity, soil, and carbon sequestration techniques into landscaping and gardening projects.*

Carbon Sequestration and Soil Conservation

Policy 3-6.5: Conserve agricultural land and soils.

Action 3-6.14: *Explore expansion of the City's natural areas preservation system through land transfers and acquisitions of undeveloped/unprotected private and public lands.*

Action 3-6.15: *Continue to support the City's Natural Resource Program, which aims to balance the use of recycled water to grow food with the need to preserve and promote biodiversity in the Laguna de Santa Rosa.*

Action 3-6.16: *Discourage the conversion of agricultural land to non-agricultural uses.*

Action 3-6.17: *Promote restorative agricultural and landscaping techniques that incorporate cover crops, mulching, compost application, field borders, alley cropping, conservation crop rotation, prescribed grazing, and reduced tillage to promote healthy soils and soil conservation.*

Action 3-6.18: *Coordinate with local and regional stakeholders to review and implement suggestions in the State's Healthy Soils Initiative.*

Action 3-6.19: *Partner with the Sonoma County Agricultural Preservation and Open Space District and Sonoma Resource Conservation District to identify opportunities for conserving agricultural lands and preserving soil quality in Santa Rosa.*

Action 3-6.20: *Partner with Santa Rosa Junior College's Sustainable Agriculture Program to expand opportunities for sustainable agricultural education in Santa Rosa.*

Policy 3-6.6: Support Sonoma County efforts to preserve unincorporated lands adjacent to and near the Santa Rosa UGB as viable agricultural resources and to support the agriculture economy and environmental quality, scenic resources, and a buffer providing greater resilience against hazards.

Policy 3-6.7: Capture and sequester more carbon in soils and plants citywide.

Action 3-6.21: *Conduct a carbon sequestration feasibility study of City-owned open space, parks, agricultural lands, and conservation lands, and implement the recommendations as feasible. This study should assess carbon storage potential by land use type and identify strategies to facilitate carbon sequestration.*

Action 3-6.22: *Conduct carbon sequestration farming pilot projects and research as part of ongoing ecological restoration of degraded habitats.*

Action 3-6.23: *Work with the County to support the implementation of forest management practices that protect existing carbon stocks by reducing the risk of catastrophic wildfire. At the same time, support activities such as mulching in place, prescribed fire, conservation burns, and off-site uses, including compost and mulch production.*

Action 3-6.24: *Work with regional partners on strategic land protection and stewardship actions that increase carbon sequestration, minimize conversion to land uses that have a lower capacity to sequester carbon, and preserve contiguous open space areas to better protect ecosystems that are under pressure from a changing climate, allowing greater mobility of species.*

Action 3-6.25: *Limit the conversion of open space and protected areas to developed land through enforcing and maintaining urban growth boundaries.*

Action 3-6.26: *Implement regenerative land management practices at the city scale to reduce GHG emissions and improve watershed and human health.*

Regenerative land management is an approach to land management that seeks to improve the overall health of the ecosystem. It emphasizes strategies that protect and enhance the ecosystem in a holistic and interconnected manner, promoting the use of natural systems and processes to repair environmental damage.

Action 3-6.27: *Coordinate with the County and private landowners to support local agricultural producers to plan, implement, and scale natural carbon sequestration.*

Action 3-6.28: *Ensure that agricultural easements have standards for best management practices and prioritize conservation of agricultural properties that use or agree to implement regenerative agriculture practices.*

Action 3-6.29: *Amend the composting ordinance to advance compost infrastructure and support soil carbon sequestration activities.*

Action 3-6.30: *Ensure beneficial use of compost made from organics collected from residents and businesses.*

Policy 3-6.8: Achieve and maintain ambient air quality standards.

Action 3-6.31: *Require projects that exceed the Bay Area Air Quality Management District (BAAQMD) screening sizes to evaluate project-specific operation and construction emissions in conformance with the BAAQMD methodology and if operation or construction-related criteria air pollutants exceed the BAAQMD thresholds of significance, require the project applicant to mitigate the impacts to an acceptable level. (EIR)*

Action 3-6.32: *Continue to implement the Bay Area Air Quality Management District (BAAQMD) Basic Control Measures included in the latest version of BAAQMD's CEQA Air*

Quality Guidelines to control fugitive dust (i.e., particulate matter $PM_{2.5}$ and PM_{10}) during demolition, ground-disturbing activities, and/or construction. (EIR)

Action 3-6.33: *Require all new development to be electric vehicle charging ready at a minimum. Explore opportunities to amend the City's municipal codes to require new development to install electric vehicle charging infrastructure beyond the minimum State requirements.*

Action 3-6.34: *Explore amendments to the Zoning Code to minimize drive-through service land uses.*

Action 3-6.35: *Review and amend the City's Building Code and Zoning Code to facilitate the installation of electric vehicle charging infrastructure.*

Action 3-6.36: *Explore efforts to require charging or clean fuel stations on private property, including hydrogen and sustainably sourced biofuels.*

Action 3-6.37: *Expand installation and operation of electric vehicle charging stations on City properties, including curbside in areas of the community where other options are limited.*

Action 3-6.38: *Budget for clean fuel and zero-emission vehicles in the City's long-range capital expenditure plans to transition the existing fleet of gasoline- and diesel-powered vehicles, and work to make the City's fleet among the cleanest in the North Bay by:*

- Purchasing zero-emission vehicles whenever possible that meet or exceed requirements under the California Advanced Clean Fleets Regulation. If zero-emission vehicles are not available, purchase plug-in hybrids, or other vehicle types to minimize emissions.
- Using biodiesel and pollution-reducing fuel additives in the City's diesel fuel vehicles.

Action 3-6.39: *Continue to implement the City's Wood Burning Appliance Ordinance to reduce particulate matter emissions from wood-burning appliances.*

Additional policies and actions pertaining to air quality can be found in the Climate Resilience section of **Chapter 5, Safety, Climate Resilience, Noise, and Public Services and Facilities**.

Greenhouse Gas Reduction

The 2050 General Plan presents an integrated and cross-sector approach to reducing GHG emissions in Santa Rosa. The General Plan integrates goals, policies, and actions that support reductions from community and municipal sources of emissions, supported by a stand-alone GHG Reduction Strategy **(Appendix A)**. The GHG Reduction Strategy presents all City GHG reduction measures and includes quantification and other details consistent with CEQA Guidelines Section 15183.5 to support ongoing reductions through 2050. For the first time, the General Plan incorporates the community's progressive GHG reduction goals, State goals, and community-wide GHG reductions. Like the previous Community Climate Action Plan (CCAP), the integrated strategy includes GHG reduction measures and implementation programs based on the City's ongoing implementation of the CCAP, an updated GHG emissions inventory, and projections of future GHG emissions. The General Plan and GHG Reduction Strategy are consistent with State and Bay Area Air Quality Management District CEQA Guidelines. The GHG Reduction Strategy builds on a strong record of climate action stewardship in Santa Rosa and supports other, ongoing community efforts to reduce pollution and improve community health, such as those led by the Regional Climate Protection Authority.

On August 2, 2005, the Santa Rosa City Council adopted Resolution 26341, which established two targets:

- Reduce GHGs from City government operations to 20 percent below 2000 levels by 2010.
- Reduce community-wide GHGs to 25 percent below 1990 levels by 2015, a level estimated to be 37 percent below 2007 baseline levels.

In 2012, the City adopted the CCAP, which is now replaced by the goals, policies, and actions of this General Plan and the companion GHG Reduction Strategy. Similar to the CCAP, the City's Municipal Climate Action Plan (MCAP) includes GHG emissions inventories and reduction measures, but it focuses on the GHG emissions associated with municipal facilities and operations, such as City buildings, vehicles, and lighting.

In 2019, the City Council formed its Climate Action Subcommittee to provide guidance and oversight for implementation and update of the City's CCAP and MCAP.

On January 14, 2020, the Council adopted the Climate Emergency Resolution, setting a goal of achieving carbon neutrality by 2030 (15 years ahead of the recently established State goal).

Achieving net carbon neutrality by 2030 is a notable aspirational goal shared by several cities and communities around the world. At this time, achievement of carbon neutrality community-wide by 2030 would require a significant increase in City resources, technologies, staff time, and community participation, well beyond what is currently available to the City. The GHG Reduction Strategy developed with this General Plan (**Appendix A**) proposes measures and actions to achieve minimum GHG reduction targets for

2030 and 2045, consistent with the State mandates described below.

In December 2022, the California Air Resources Board adopted an update to the State's Climate Change Scoping Plan, which details the pathway to achieve statewide carbon neutrality by 2045 consistent with adopted GHG emissions reduction targets. The State's adopted targets are:

- Reduce GHG emissions to 40 percent below 1990 levels by 2030.
- Reduce GHG emissions to 85 percent below 1990 levels by 2045.
- Achieve statewide net carbon neutrality by 2045.

Many common activities of daily life generate GHG emissions. Some daily activities release GHG emissions in the location of the activity, such as natural gas combustion in homes or businesses. Other activities release GHG emissions elsewhere, such as power plants in other communities that generate electricity used in Santa Rosa. In a few cases, an activity generates emissions partially in Santa Rosa and partially elsewhere, such as vehicle trips between Santa Rosa and another community.

A community-wide GHG emissions inventory, included in **Appendix A,** identifies GHG emissions that result from activities of residents, employees, and other community members. The City prepared community-wide GHG inventories for calendar years 2000, 2007, and 2019 that assess GHG emissions from the following sectors: transportation, residential energy, nonresidential energy, solid waste, off-road equipment, agriculture, water and wastewater, and land use and sequestration.

In 2019, Santa Rosa's community-wide GHG emissions totaled 949,310 $MTCO_2e$ (metric tons of carbon-dioxide equivalent). This is a 28 percent decrease in emissions since 2007. Transportation is the highest-emitting sector, representing 58 percent of emissions in 2019. The nonresidential energy, residential energy, and off-road equipment are the second-, third-, and fourth-highest emitting sectors, respectively, in 2019.

The City also prepared inventories of municipal GHG emissions, that is, GHG emissions from City operations, for the calendar years 2000, 2007, and 2010. In 2007, Santa Rosa's municipal GHG emissions were 29,440 $MTCO_2e$, approximately 3 percent of community-wide emissions. From 2000 to 2010, municipal GHG emissions decreased by 5 percent. The City prepared a Municipal Operations Climate Action Plan in 2010 that included GHG reduction targets for 2020, 2035, and 2050, with the ultimate goal to reduce municipal GHG emission to at least 83 percent below 2007 levels by 2050. The City has completed implementation of the most feasible GHG Reduction Measures in the MCAP.

Energy

The City of Santa Rosa depends on energy to maintain a vital economy and desirable lifestyle. The city needs electricity and natural gas to light, heat, and cool structures and power office equipment, industrial machinery, public services, and home appliances. The community also uses petroleum products to move people and products along transportation corridors. Energy is vital to the continued functioning of housing,

employment, transportation, and public services and facilities in Santa Rosa.

Reduced energy use and a shift to clean and renewable energy sources in housing, commercial structures, public facilities, and transportation can help support the local economic vitality, reduce costs, reduce GHG emissions, and enhance sustainability and reliability of the energy grid.

Goals, Policies, and Actions

Goal 3-7: Strive to achieve net carbon neutrality no later than 2045.

Policy 3-7.1: **Significantly reduce community-wide and municipal GHG emissions, achieving at least an 85 percent reduction of GHG emissions from community sources below 1990 levels by no later than 2045 with a commitment to accelerate reductions, as feasible, in support of the City's and State's carbon neutrality goals.**

Action 3-7.1: *Consider the effects of climate change in updating or amending the General Plan, disaster planning, City projects, infrastructure planning, future policies, and City investments.*

Action 3-7.2: *Implement the actions in the GHG Reduction Strategy to achieve the City's GHG reduction goals.*

Action 3-7.3: *Continue regular inventories of community-wide and municipal GHG emissions, at least every five years, consistent with the GHG Reduction Strategy and this General Plan.*

Action 3-7.4: *Provide public information to educate residents and businesses on the GHG Reduction Strategy and to support individual changes in energy and water use, transportation mode choices, material use, and waste reduction.*

Policy 3-7.2: **Reduce energy use and increase energy efficiency in existing and new residential, commercial, industrial, and public structures.**

Action 3-7.5: *Require regular energy audits of existing City-owned and operated structures, identifying levels of existing energy use and potential conservation and efficiency measures.*

Action 3-7.6: *Develop a capital project list and funding strategy to complete energy-efficiency projects for City-owned and operated structures and adjust the list annually to add new projects as needed.*

Action 3-7.7: *Provide information on the cost-savings potential and other benefits of energy audits and energy-efficient retrofits to encourage their preparation for buildings throughout the city.*

Action 3-7.8: *Guide project applicants toward site planning, solar orientation, cool roofs, and landscaping that decrease summer cooling and winter heating needs.*

Action 3-7.9: *Identify incentives to encourage new buildings to exceed State energy efficiency requirements and/or meet or exceed the U.S. Green Building Council's LEED (Leadership in Energy and Environmental Design) Program or equivalent standards.*

Action 3-7.10: *Assess the effectiveness of the City's environmentally sensitive preferred purchasing and green fleet conversion programs and update the programs, as needed, to support the City's GHG reduction goals.*

Action 3-7.11: *Use education and incentives to promote and sustain energy-conserving design and practices.*

Policy 3-7.3: Increase the use of renewable, carbon-free, and distributed energy resources throughout the city.

Action 3-7.12: *Revise any existing codes and policies that constrain or prohibit the installation of environmentally acceptable forms of distributed energy generation.*

Action 3-7.13: *Identify incentives and other means to encourage new and existing buildings to include battery energy storage systems, especially buildings with solar energy installations and municipal buildings that provide essential community services.*

Action 3-7.14: *Participate in State and local efforts to develop appropriate policies and review procedures for the installation of photovoltaic solar and other forms of distributed energy generation.*

Action 3-7.15: *Continue to participate in utility-sponsored renewable energy programs that allow the city to receive a significant portion of energy from renewable sources.*

Action 3-7.16: *Seek and identify resources to assist low-income homeowners and small business owners with identifying financing options for installation of rooftop solar energy systems, energy storage, and electrification of existing buildings.*

Action 3-7.17: *Support the development of local-serving renewable energy projects that expand the availability of local renewable energy, provide sustainable local jobs, and support local and regional housing, economic development, and sustainability goals and initiatives.*

Action 3-7.18: *Encourage the establishment of neighborhood renewable energy microgrids to support resilience.*

Action 3-7.19: *Support State and utility efforts to improve grid resilience and capacity.*

Action 3-7.20: *Require all new electric vehicle (EV) chargers installed by the City to have bi-directional charging capabilities. Encourage private property owners to select EV chargers with bi-directional charging capabilities when installing EV chargers on their properties.*

Policy 3-7.4: Reduce the use of fossil fuels as an energy source in new and existing buildings.

Action 3-7.21: *Evaluate and adopt changes to the building code or other municipal codes and policies to decarbonize the building stock while also maximizing energy efficiency.*

Action 3-7.22: *Amend the building or energy code to incentivize building owners to upgrade residential appliances, including water and space heaters, to increase energy efficiency and reduce GHG emissions.*

Action 3-7.23: *Develop new and retrofit existing City facilities to be zero net energy.*

Action 3-7.24: *Continue to update the Building Code, consistent with State law, to increase the use of low-carbon construction materials.*

Policy 3-7.5: Continue the City's role as a leader in sustainability and climate action.

Action 3-7.25: *Continue to enhance the City's ability to optimize energy use, minimize energy costs, prepare for emergencies, and power provider outages, protect public health, sustain natural resources, and reduce municipal GHG emissions.*

Action 3-7.26: *Enhance efforts to reduce GHG emissions in municipal operations after understanding the scope, effectiveness, and resource commitments of existing GHG reduction initiatives.*

Action 3-7.27: *Continue using 100 percent renewable electricity for all City buildings.*

Action 3-7.28: *Integrate GHG emissions reduction and climate resilience into all municipal projects, policies, and procedures as applicable.*

Action 3-7.29: *Continue to implement existing clean energy and green practices such as capturing energy from digestion of wastewater solids and implementing energy-efficient capital improvement projects, such as the 2022 ultraviolet disinfection system upgrade at the Laguna Treatment Plant.*

Action 3-7.30: *Designate and support a Climate Action Lead in each City department.*

Action 3-7.31: *Continue to support an Interdepartmental Climate Action Implementation Committee.*

Action 3-7.32: *Support the growth of green businesses in Santa Rosa that support a carbon-neutral economy.*

Action 3-7.33: *Continue to participate in Sonoma County Regional Climate Protection Authority (RCPA) programs, activities, and planning efforts to reduce GHG emissions countywide.*