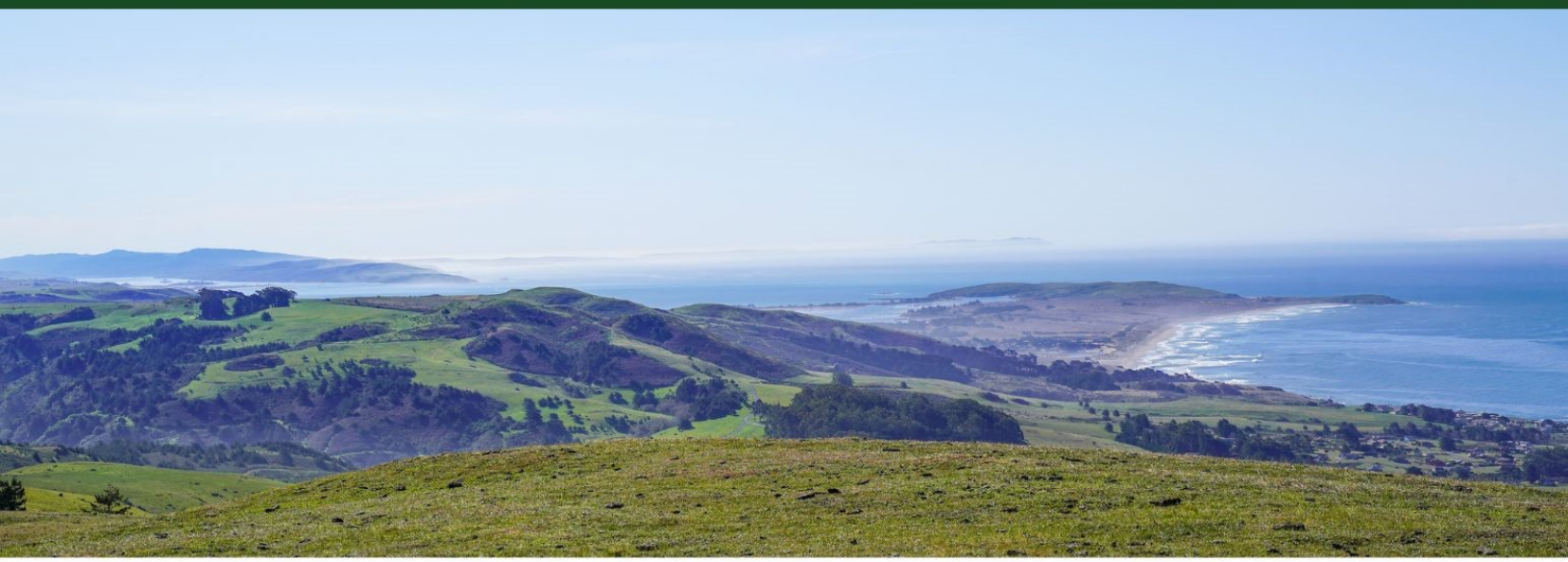
SONOMA COUNTY
REGIONAL PARKS



Climate Adaptation and Resilience Plan

Acknowledgements

This Climate Adaptation and Resiliency Plan is the result of a collaborative effort between Regional Parks staff and County staff from various departments, along with partner agencies and entities. We are also deeply grateful for the invaluable input and engagement from our Regional Parks visitors. Thank you for your support!

Sonoma County Regional Parks Visitors and Community Partners

Sonoma County Board of Supervisors

- Rebecca Hermosillo, Supervisor, District 1
- David Rabbitt, Supervisor, District 2
- Chris Coursey, Supervisor, District 3
- James Gore, Supervisor, District 4
- Lynda Hopkins, Supervisor, District 5

Parks and Recreation Advisory Commission

- John Roney, District 1
- Carol Eber, District 2
- Beth Steffy, District 3
- Luis Gonzalez, District 4
- Nathan Junge, District 5
- Amara Galvan, Youth
- Tomas Mercado, Youth

Partner Agencies and Entities

- Ag + Open Space
- CAL FIRE
- Conservation Corps North Bay
- Gold Ridge Resource Conservation District
- Natural Resources Conservation Service
- Permit Sonoma
- Recology
- Regional Climate Protection Authority
- Sonoma Clean Power
- Sonoma County Climate Action and Resiliency Division
- Sonoma County Public Infrastructure, Facilities Development
- Sonoma County Public Infrastructure, Integrated Waste Division
- Sonoma County Public Infrastructure, Purchasing Division

- Sonoma County Public Infrastructure, Transit Division
- Sonoma Land Trust
- Sonoma Resource Conservation District
- Sonoma Water
- University of California Cooperative Extension
- Zero Waste Sonoma

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- BluePoint Planning
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Rincon Consultants, Inc. (hereinafter referred to as "Rincon") prepares vulnerability assessments that evaluate climate change hazards, including wildfire, based on numerous sources, including third party consultants, State and Federal mapping resources, and various software modeling programs that are considered industry standard best practices. The vulnerability assessment prepared for this CARP evaluated wildfire hazards based on the Wildfire Risk Index from the County of Sonoma and CAL FIRE's fire perimeter history. Vulnerabilities were analyzed in collaboration with Sonoma County Regional Parks staff. Wildfire is unpredictable, and the specific conditions of wildfire could result in fire behavior that diverges from the assumptions used in this analysis. There is no guarantee that wildfire behavior and specific treatment to avoid such behavior will follow or prevent wildfire impacts. Rincon is not responsible for any damage to life or property that might occur based on the results of the vulnerability analyses herein, and any accompanying recommendations.

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1 Introduction

Sonoma County Regional Parks (Regional Parks) recognizes the climate impacts affecting the region, including more frequent and severe floods, fires, extreme heat, and drought. Regional Parks is designing parks to be climate resilient and provide sanctuaries for both people and wildlife during extreme weather events. The purpose of the Climate Adaptation and Resiliency Plan (CARP), finalized in February 2025, is to serve as a roadmap to continue to increase resilience within the Regional Parks system while simultaneously reducing the greenhouse gas emissions (GHG) from park operations that contribute to climate change.

1.1 Regional Parks Snapshot

Regional Parks includes 60 parks and beaches from Petaluma to Gualala and Sonoma to Bodega Bay. Many of these parks feature wild landscapes and extensive trail networks, while others offer sports fields, playgrounds, and campgrounds. Additionally, Regional Parks also manages the county's largest ocean marina and is the largest environmental education provider.

Mission

Regional Parks provides essential opportunities for people to connect with nature. We contribute to the vibrancy and well-being of our community by expanding access to recreation experiences, serving as responsible stewards of cultural and natural resources and ensuring that our parks are clean, safe and welcoming.

Vision

Sonoma County's diverse network of parks and trails connects the community to the benefits of nature. We demonstrate excellent stewardship of the region's irreplaceable natural and cultural resources and focus on adapting to and reducing the impacts of climate change. The parks are welcoming and inclusive environments where visitors experience outstanding customer service and employees feel valued and engaged. Park facilities are beautiful, modern and efficient.

Values

Regional Parks' values are innovation, equity, inclusion, sustainability, accessibility, and accountability.

Land Acknowledgement

The County of Sonoma recognizes that we are on the ancestral lands of the Coast Miwok, Pomo, and Wappo who are the original caretakers of this area. We respectfully acknowledge the Indigenous peoples who have been stewarding and maintaining relationship on this land as knowledge keepers for millennia.

The County of Sonoma is dedicated to understanding and educating the public about historical and ongoing connections between land conservation and social inequities. This includes the histories of genocide, forced removal and displacement and broken promises with Indigenous peoples as a part of American history.

Indigenous people are not just in our histories. We strive to optimize Indigenous voices to share their own history, as to not perpetuate another form of being silenced. While recognizing the past, we honor the resiliency of Native people still in their ancestral territories in relationship with their land and culture.

This acknowledgement does not take the place of authentic relationships with Indigenous communities but serves as a gesture of respect to the land we are on.

This CARP includes actions in Section 2.6 to improve Tribal access to parks and increase resilience to climate change.

1.2 CARP Guiding Principles

The following guiding principles reflect what Regional Parks considers to be the key priorities and aspirational outcomes associated with this CARP. The strategies in Section 2 align with these guiding principles.

Regional Parks will lead by example within the County and the community in climate action and adaptation.

Regional Parks is a nimble and highly visible department in the County. For most of the community, Regional Parks provide public venues and serve as the primary point of interaction between the public and the County and can pilot projects that both directly support the community and encourage behavioral changes that reduce community contributions to climate change. As a highly visible landowner, Regional Parks has the unique opportunity to lead by example in decreasing GHG emissions, protecting and enhancing carbon stock through climate-smart practices that provide multiple benefits including promoting ecological preservation and restoration, and buffering adjacent communities from the negative effects of climate change.

Regional Parks will align measures and actions with the needs and priorities of the community.

Regional Parks is a local agency developed to provide natural areas and recreational opportunities for the benefit of the community. Thus, community input provided throughout the CARP development process directly informed the development of measures and actions. Regional Parks will prioritize community input to emphasize specific areas of changes, increase opportunities for implementation success, and maintain support for the value Regional Parks provides to the community.

Regional Parks will take an equity-informed approach that builds a shared path to climate resilience with vulnerable communities and local Tribes.

Regional Parks' key roles in the community include providing access to natural areas and recreational opportunities and offering educational opportunities for all people, no matter the color of their skin, age, income level, ability, gender identity, sexual orientation, religion, country of origin, or language. This CARP prioritizes specific measures and actions that equitably distribute the benefits and burdens of implementing GHG reduction and resilience strategies.

1.3 State Initiatives

Climate Mitigation

California has established ambitious legislation and policies that aim to reduce and ultimately eliminate GHG emissions. The key adopted GHG legislation Assembly Bill (AB) 32, Senate Bill (SB) 32, and AB 1279, are described below:

Assembly Bill 32

California's major initiative for reducing GHG emissions is outlined in AB 32, the "California Global Warming Solutions Act of 2006," which was signed into law in 2006. AB 32 codifies the statewide goal of reducing GHG emissions to 1990 levels by 2020 and requires California Air Resources Board (CARB) to prepare a Scoping Plan that outlines the main state strategies for reducing GHG emissions to meet the 2020 deadline. In addition, AB 32 requires CARB to adopt regulations to require reporting and verification of statewide GHG emissions.

Based on this guidance, CARB approved a 1990 statewide GHG baseline and 2020 emissions limit of 427 million metric tons of CO_2 equivalent (MMT CO_2e). The Scoping Plan was approved by CARB on December 11, 2008, and included measures to address GHG emission reduction strategies related to energy efficiency, water use, and recycling and solid waste, among other measures. Many of the GHG reduction measures included in the Scoping Plan (e.g., Low Carbon Fuel Standard, Advanced Clean Car standards, and Cap-and-Trade) have been adopted since approval of the Scoping Plan.

In May 2014, CARB approved the first update to the AB 32 Scoping Plan. The 2014 Scoping Plan update defined CARB's climate change priorities for the next five years and set the groundwork to reach post-2020 statewide goals. The update highlighted California's progress toward meeting the "near-term" 2020 GHG emission reduction goals defined in the original Scoping Plan. It also evaluated how to align the State's longer-term GHG reduction strategies with other State policy priorities, including those for water, waste, natural resources, clean energy, transportation, and land use.

Senate Bill 32

On September 8, 2016, the governor signed SB 32 into law, extending AB 32 by requiring the State to further reduce GHGs to 40 percent below 1990 levels by 2030 (the other provisions of AB 32 remain unchanged). The bill charges CARB to adopt the regulation so that the maximum technologically feasible emissions reductions are achieved in the most cost-effective way.

Assembly Bill 1279

In September 2022, AB 1279 (e.g., the California Climate Crisis Act) was approved, which established a legally binding requirement for California to achieve and maintain carbon neutrality no later than 2045. Assembly Bill 1279 also established the requirement to achieve a Statewide reduction in GHG emissions of 85 percent below 1990 levels by 2045. This indicates that the remaining 15 percent to achieve carbon neutrality can be achieved via carbon sequestration and other non-direct-GHG-emissions-reductions techniques.

Senate Bill 1383

In September 2016, SB 1383 was approved, which established a comprehensive strategy to reduce short-lived climate pollutants in California. SB 1383 mandates a 40 percent reduction in methane emissions, a 40 percent reduction in hydrofluorocarbon gases, and a 50 percent reduction in

anthropogenic black carbon below 2013 levels by 2030. Additionally, SB 1383 requires every jurisdiction in California to provide organic waste collection services to all residents and businesses by 2022. This includes food waste, green waste, wood, paper products, and more. The goal is to divert organic waste from landfills, thereby reducing methane emissions.

Climate Adaptation

California is also a leader in climate adaptation, requiring water agencies, large utilities, and cities and counties to prepare to adapt to the effects of climate change, from increased wildfire risk to extreme heat.

Senate Bill 379

On September 16, 2022, the governor signed SB 379 into law, requiring cities and counties to prepare a vulnerability assessment of climate change impacts and develop policies and programs to increase resilience as part of the Safety Element Chapter in a jurisdictions' General Plan. Senate Bill 379 is the primary driver of climate adaptation across the State.

Assembly Bill 2684

On September 18, 2022, the governor signed AB 2684 into law, requiring cities and counties to update the Safety Element chapter of the General Plan after January 1, 2028, to address extreme heat hazards. The legislation aims to enhance community protection from extreme heat across the State.

1.4 Regional Countywide Efforts

There are numerous policies and plans developed by the County of Sonoma and local partners to address climate change mitigation and resilience. Below are descriptions of some key efforts:

Sonoma County Board of Supervisors Climate Change Action Resolution (18-0166)

The Sonoma County Board of Supervisors adopted the Climate Change Action Resolution to support a countywide framework for reducing GHG emissions and to pursue local actions that support building climate action and resiliency. The resolution was adopted to help create countywide consistency and clear guidance about coordinated implementation of the GHG reduction measures.

Sonoma County 5-Year Strategic Plan 2021-2026

The Strategic Plan outlines the key strategic goals for the County between 2021-2026 and is intended to inform policies and projects that are prioritized during the five-year planning horizon. The plan was approved by the Sonoma County Board of Supervisors in March 2021. The plan includes five strategic pillars: Climate Action and Resiliency, Healthy and Safe Communities, Organizational Excellence, Racial Equity and Social Justice, and Resilient Infrastructure. The strategic plan describes specific climate resilience goals around wildfire preparedness, community resilience, and landscape and species resilience.

Sonoma County General Plan

The County of Sonoma's General Plan is a blueprint for meeting the communities long term vision for the future. The General Plan includes several elements (or sections) that cover different topics

including mandatory topics like Land Use, Circulation, Housing, Conservation, Open Space, Noise, and Safety and optional elements such as Agricultural Resources, Air Transportation, Water Resources, and Public Facilities and Services. Policy LU-11 of the current General Plan (updated in 2008) encourages "conservation of undeveloped land, open space, and agricultural lands, protection of water and soil quality, restoration of ecosystems, and minimization or elimination of the disruption of existing natural ecosystems and flood plain."

Sonoma County Climate Resilient Lands Strategy

The Sonoma County Climate Resilient Lands Strategy is a non-regulatory framework for how the County and its partners can conserve, manage, and restore natural and working lands to build climate resilience. The Strategy provides an overview of climate hazards, characterizes Sonoma County land types and eco-regions, and offers recommendations and guidance for the planning, design, and implementation of resilience-related projects. The Strategy was directed and funded by the County's Climate Action and Resiliency Division and Sonoma County Agricultural Preservation and Open Space District (Ag + Open Space).

Sonoma County Office of Equity Racial Equity Action Plan

In the summer of 2020, the Sonoma County Board of Supervisors established the Office of Equity to address racial inequity within the community and local government systems. This initiative was part of the Racial Equity and Social Justice Pillar in the County's 5-year Strategic Plan, which was adopted in 2021, with the goal to "achieve racial equity in county service provision and ensure a workforce reflective of the community we serve" (Office of Equity, 2024). The Racial Equity Plan addresses several key questions:

- What are the conditions of well-being that we want County staff to experience?
- What racial inequities exist within the internal infrastructure of the County that prevent these conditions from occurring?
- Why do these racial inequities exist and persist?
- What strategic actions can the County take to disrupt the roots of these inequities?
- How can the County measure the efficacy of these strategic actions?

Sonoma County Ag + Open Space 2021 Vital Lands Initiative

The Vital Lands Initiative is a long-range comprehensive plan to prioritize the land conservation activities of Ag + Open Space. The plan includes goals, priorities, and strategies for conservation, and identifies climate resilience as a co-benefit of conservation.

Sonoma County Ag + Open Space Healthy Lands and Healthy Economies

The Healthy Lands and Healthy Economies Initiative is a regional collaboration led by Ag + Open Space, the Resource Conservation District of Santa Cruz County, and the Santa Clara Valley Open Space Authority to quantify the benefits and economic values that are provided to the community by working lands and natural areas.

Sonoma County Regional Climate Protection Authority Sonoma Climate Mobilization

The Sonoma Climate Mobilization is a comprehensive strategy developed by the Sonoma County Regional Climate Protection Authority to address the climate emergency declared by its Board of Directors in September 2019. This initiative outlines 13 countywide actions aimed at significantly reducing GHG emissions by 2030. The Regional Climate Protection Authority collaborates with local jurisdictions, the County of Sonoma, and various agency partners to develop and prioritize policy projects that support these goals. Key efforts include promoting renewable energy, enhancing energy efficiency, and advancing low-carbon transportation options.

Community Grazing Collaboratives

Lead by University of California Cooperative Extension, grazing collaboratives will enable neighbors and their surrounding landscape to manage vegetation for a variety of resource goals, including fire severity reduction and ecological enhancements, such as carbon sequestration.

Sonoma Water Climate Adaptation Plan

Sonoma Water's Climate Adaptation Plan assesses the relationship between climate changes and regional water supply, flood management, and sanitation systems. It includes an assessment of vulnerable Sonoma Water infrastructure, systems, and services. The Plan outlines adaptation strategies and projects to increase resilience.

Sonoma Water Energy and Climate Resiliency Policy

Sonoma Water's Energy and Climate Resiliency Policy, adopted in August 2023, is an update to the 2011 Energy Policy (Carbon Free Water). The Policy directs Sonoma Water to maintain its energy program with the new directive to continue preparing its systems for climate change through continued investment in climate science and innovation; to develop and implement climate resiliency strategies; and to pursue energy and climate resiliency projects of regional benefit.

County of Sonoma Climate Resilience Comprehensive Action Plan

The County of Sonoma Climate Resilience Comprehensive Action Plan outlines a strategy to reduce GHG emissions from County operations and enhance resilience to climate hazards. It emphasizes engaging with local communities, particularly unincorporated, climate justice, and environmental justice communities, to understand and support their climate resilience priorities. In 2019, Sonoma County joined the Regional Climate Protection Authority and other jurisdictions worldwide in declaring a Climate Emergency. The County's 5-year Strategic Plan, adopted in 2021, includes a Climate Action and Resiliency Pillar with the goal of making Sonoma County carbon neutral by 2030, featuring objectives such as making County facilities carbon-free, zero waste, and resilient (County of Sonoma, 2024).

1.5 Regional Parks Sustainability Accomplishments

Regional Parks has a longstanding commitment to building resilience and reducing GHG emissions, demonstrated through the implementation of key plans and programs aimed at sustainability and climate adaptation. These efforts provide a solid foundation for the department's CARP, which builds on past achievements to drive further progress. By prioritizing resilience-building and GHG

reduction initiatives, Regional Parks ensures the long-term sustainability of its parklands and the surrounding environment.

In alignment with its 2023-2025 Strategic Plan, Sonoma County Regional Parks continues to fulfill its mission to preserve natural and cultural resources, enhance equitable access, and improve the quality of life for residents and visitors. Regional Parks is actively advancing these goals through current and ongoing projects focused on climate adaptation, infrastructure improvement, equity and accessibility, visitor management, and organizational stability. These efforts highlight Regional Parks' commitment to building a resilient, inclusive, and sustainable parks system for future generations. Below are some projects that exemplify Regional Parks' ongoing efforts to build resilience and reduce GHG emissions.

Foothill Park Improvements – Climate Adaptive Design and Renovation

The Foothill renovations and improvements focus on climate adaptive design to make the park more resilient to future wildfires and offer greater protection to surrounding neighborhoods. The project also includes the construction of additional community amenities in this very popular and heavily utilized regional park.

Vegetation Management for Resilience

Regional Parks implements ongoing forest management, grazing, prescribed burning, and invasive species removal to reduce the risk of wildfire and capture and store more carbon on the landscape.

Watershed Restoration for Habitat Function

Regional Parks staff work to restore streams and wetlands which can reduce erosion and alleviate flooding. Parks staff engage in projects to rehydrate the landscape to improve native habitat, resulting in more robust, resilient, and functional ecosystems.

Helen Putnam Rainwater Catchment

Regional Parks recently completed a new rainwater catchment system at Helen Putnam Regional Park will eliminate the need to haul water from off site to fulfill water needs for the restrooms, grazing implementation, and plant irrigation. The project serves as a model for future implementation.

1.6 Regional Parks Greenhouse Gas Emissions

Climate change and its associated impacts are already being felt locally. Projections indicate that these effects will only intensify in the current century unless there is a global effort to bring about significant change and reduce GHG emissions collectively. To guide the development of the CARP, Regional Parks completed a 2019 operational GHG emissions inventory and GHG emissions forecast. Below is a summary of the results of these analyses. Detailed information regarding inventory and forecast methodology can be found in Appendix A.

Greenhouse Gas Inventory

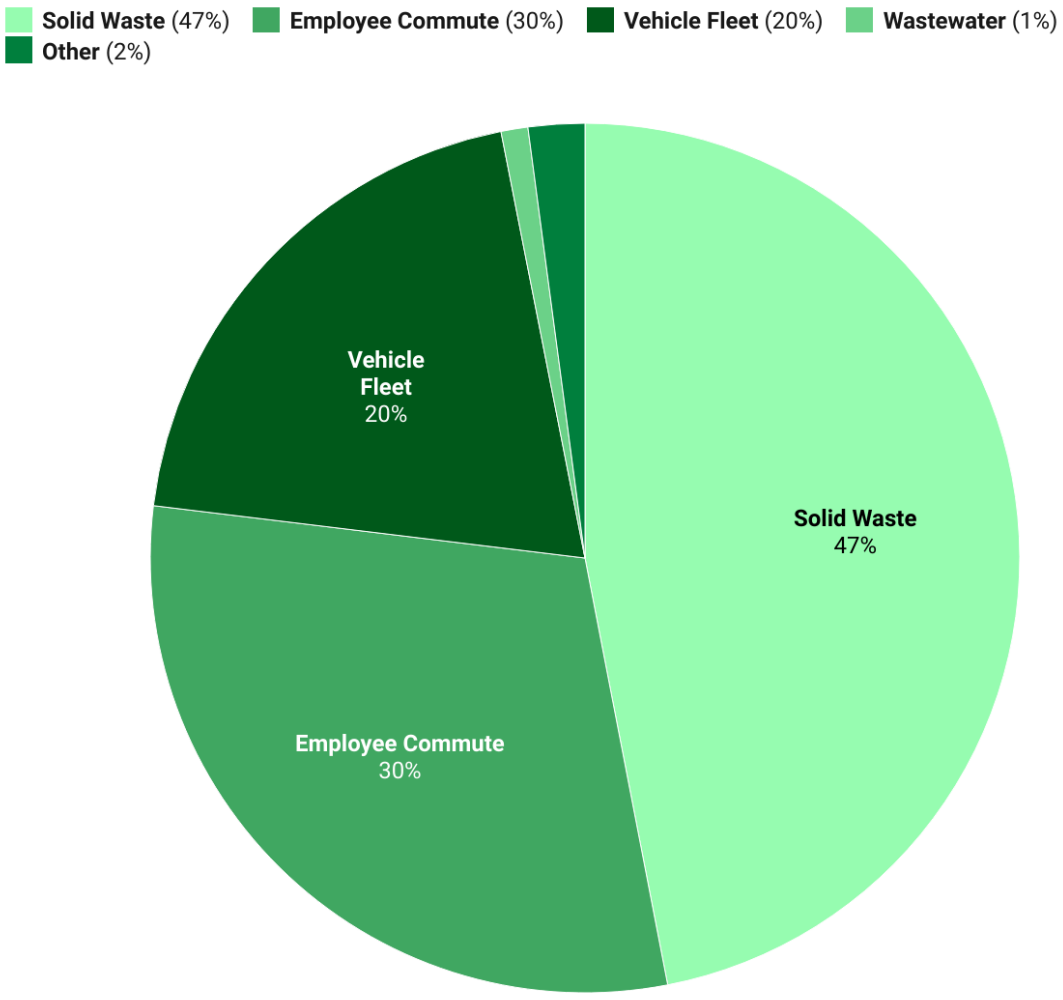
The 2019 Operational GHG Inventory includes GHG emissions occurring within Regional Parks' operational control in the buildings and facilities, vehicle fleet, employee commute, water delivery facilities, water consumption, fugitive wastewater emissions, solid waste generation, and carbon

sequestration sectors. The inventory focuses on the three GHGs most relevant to Regional Parks' operations: carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Table 1 and Figure 1 show the sectors and GHG emissions results of the 2019 operational GHG emissions inventory.

Table 1 2019 Operational GHG Emissions Inventory Results by Sector (MT CO_2e)

GHG Emissions Sector	2019 GHG Emissions (MT CO_2e)	2019 GHG Emissions as Percent of Total (%)
Buildings and Other Facilities – Propane	26.8	1%
Vehicle Fleet	414.5	20%
Buildings and Other Facilities – Electricity	27.8	1%
Water Delivery Facilities	0.1	<0.01%
Employee Commute	596.8	30%
Water Consumption	2.5	0.1%
Wastewater	11.4	1%
Solid Waste	942.6	47%
Total	**2,022.4**	**100%**

Figure 1 2019 GHG Emissions Inventory Results



Based on the 2019 GHG Emissions Inventory Solid Waste is the largest contributor to GHG Emissions at 47 percent, followed by Employee Commute at 30 percent and Vehicle Fleet at 20 percent of total emissions. These three activities together make up 97 percent of the total 2,022 metric tons CO_2e emissions in 2019.

Greenhouse Gas Forecasts

The Regional Parks 2019 Operational GHG Inventory establishes a baseline reference point for GHG emissions. However, annual GHG emissions change over time. The business-as-usual (BAU) GHG emissions forecast takes into account operational growth and land expansion projections (see Table 2).

Table 2 Operational Growth and Land Expansion Projections

Demographic	2019	2025	2030	2035	2040	2045
Acreage	12,555	17,978	20,000	22,000	26,000	30,000
Employees	120	142	150	155	165	175

The Adjusted Forecast takes into account the operational growth and land expansion projections described above, while also considering anticipated future state legsilative actions aimed at reducing emissions. The programs listed below were included in the Regional Parks Adjusted Forecast. For more information on these and legislation that was excluded from the anaylsis, please see Appendix A.

- **Advanced Clean Cars Programs**. Prior to 2012, mobile emissions regulations were implemented on a case-by-case basis for GHG and criteria pollutant emissions separately. In January 2012, CARB approved a new emissions-control program (the Advanced Clean Cars program) combining the control of smog, soot causing pollutants, and GHG emissions into a single coordinated package of requirements for passenger cars and light trucks model years 2017 through 2025. The standards will reduce California's GHG emissions by 34 percent in 2025 and are incorporated into the GHG forecast.
- **Renewables Portfolio Standard (RPS), Senate Bill 100, & Senate Bill 1020**. The RPS program requires investor-owned utilities, publicly owned utilities, electric service providers, and community choice aggregators to increase procurement from eligible renewable energy resources to 50 percent of total procurement by 2026 and 60 percent of total procurement by 2030. The RPS program further requires these entities to increase procurement from GHG-free sources to 100 percent of total procurement by 2045. California's RPS was further accelerated in 2022 by SB 1020 which established additional requirements that procurement from eligible renewable energy resources increase to 90 percent of total procurement by 2035 and 95 percent of total procurement by 2040.

Greenhouse Gas Reduction Targets

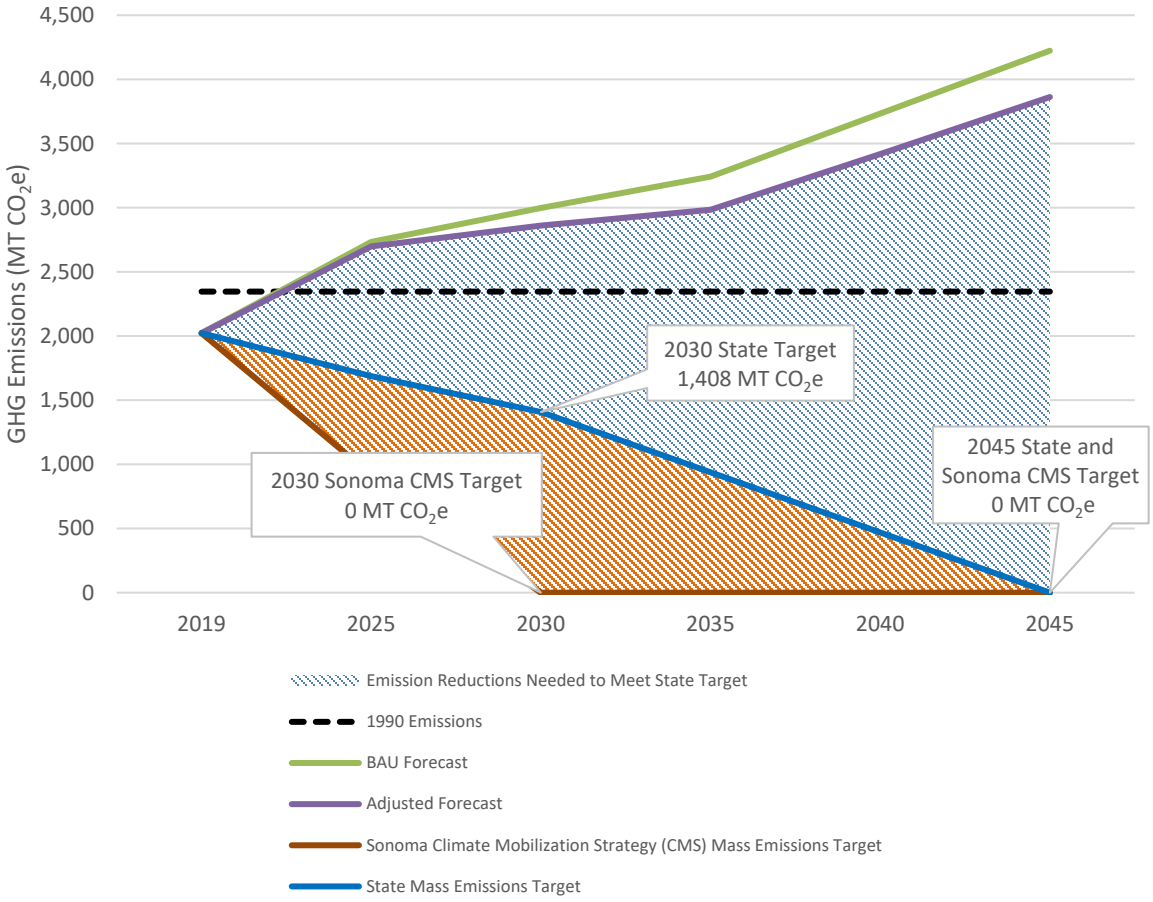
GHG reduction targets are essential for climate action planning, helping local agencies set measurable goals to reduce emissions and track progress over time. California has set ambitious statewide GHG reduction goals for 2030 and 2045. In 2016, SB 32 was adopted, requiring a 40 percent reduction in GHG emissions below 1990 levels by 2030. In 2022, AB 1279 established a goal of carbon neutrality by 2045, aiming for an 85 percent reduction in emissions and achieving net neutrality through carbon removal. CARB's 2022 Scoping Plan Update encourages local agencies to

set their own GHG reduction targets to support these state goals, ensuring everyone contributes to California's climate action efforts.

Sonoma County's Climate Mobilization Strategy (CMS), adopted in 2021, sets ambitious GHG reduction targets that surpass state goals. The strategy aims for carbon neutrality by 2030, targeting an 80 percent reduction in emissions below 1990 levels and achieving net neutrality through carbon removal.

Calculating the difference between the forecasted GHG emissions and the reduction targets helps to identify the gap in emissions that will need to be closed through measures and actions. Figure 2 shows the GHG emissions forecasts, State and Sonoma CMS targets, and the emissions gaps that must be addressed through GHG reduction measures to meet these targets.

Figure 2 2019 Greenhouse Gas Emissions Forecast Results



Implementation of the measures and actions in Section 2 will help Regional Parks address the GHG emissions gap to achieve the 2030 State target.

1.7 Regional Parks Vulnerability to Climate Change

The impacts of climate change can vary significantly in nature and extent across species, ecosystems, and park facilities. Ecosystem conditions can affect the severity of climate threats, while habitat management can impact how strongly natural systems are affected. This CARP primarily focuses on park facilities, access, and natural resource management to mitigate climate change impacts and protect park infrastructure.

Climate Change Vulnerability Assessment Methodology

Understanding the degree to which park resources are vulnerable to, or unable to cope with, climate change is crucial for responsible park management. Vulnerability assessments are essential for identifying which resources may be most impacted by climate change.

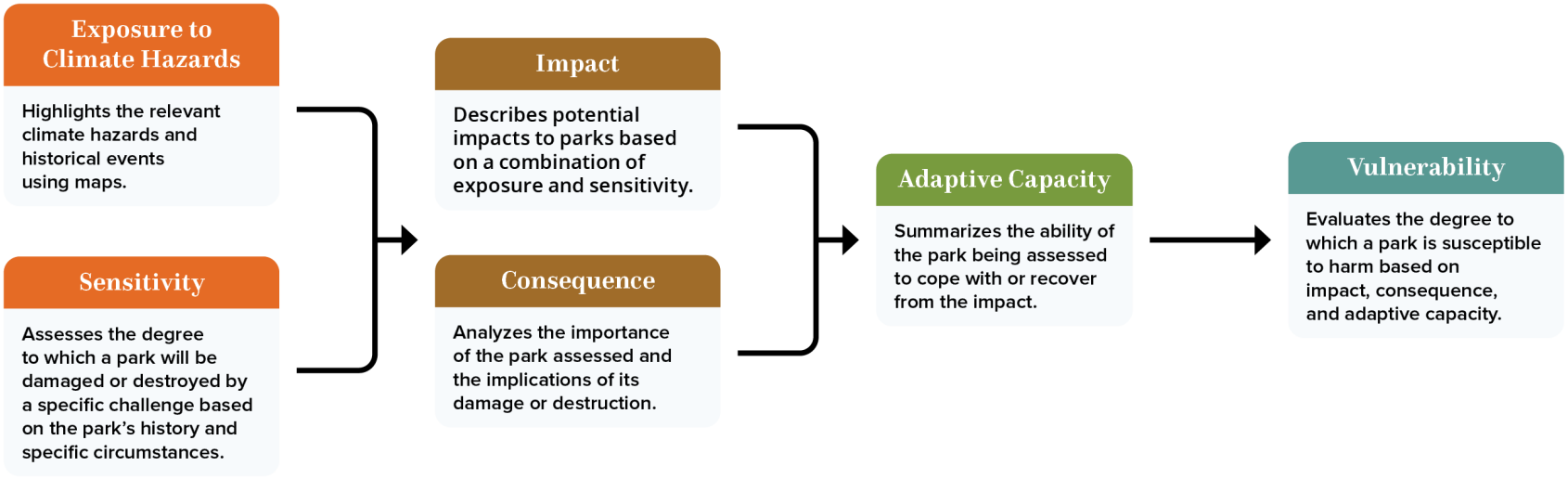
A hazard is an act or phenomenon that has the potential to produce harm or other undesirable consequences to a person or thing. Hazards exist with or without the presence of people and land development. Vulnerability, on the other hand, considers additional factors, such as:

- Whether there is infrastructure present within the hazard that could be damaged if a climate event occurs.
- The cost and effort required to repair any potential damage.
- The degree to which a park facility's closure for repairs would affect the community.
- The extent to which measures have already been taken to mitigate the potential impact.

This broader perspective helps assess how well-prepared facilities are to handle potential climate impacts.

Regional Parks assessed the vulnerability of each park by evaluating potential impact and their ability to adapt, following guidelines from the California Governor's Office of Land Use and Climate Innovation (formerly the Office of Planning and Research). The California Adaptation Planning Guide, which considers exposure and sensitivity to evaluate vulnerability, was used in this process. Regional Parks took the analysis one step further by incorporating consequences to present a more comprehensive understanding of the vulnerabilities. Figure 3 illustrates the process used to assess the vulnerability of each park.

Figure 3 Process to Assess Vulnerability by Park



The terms used in this process are closely related and often overlap in meaning. The definitions below clarify how these terms are applied in this assessment and outline the approach used to conduct it.

Exposure

Exposure refers to the presence of an asset in areas that are subject to harm. Exposure was evaluated using existing mapped climate change and weather data, along with additional spatial factors when relevant. To assess fire exposure across different parks, the evaluation utilized the Wildfire Risk Index (WRI v6) from the County of Sonoma and CAL FIRE's fire perimeter history to determine the location of potential wildfires.

Sensitivity

Sensitivity refers to the degree to which an asset would be affected by changing climate conditions. It depends on both the inherent properties of the asset and the circumstances in which the climate condition occurs. For example, a wooden bridge is much more likely to burn than a steel bridge. Additionally, a wooden bridge is more vulnerable to fire when surrounded by chaparral, as fires burn hotter in chaparral than in grasslands. In our assessment, sensitivity was determined based on the park's history and specific circumstances, resulting in an overall ranking that reflects the combined factors across the entire park.

Impact

Impact is the combination of exposure and sensitivity. It represents the overall negative result of a climate change effect on a particular asset, such as a bridge becoming damaged or destroyed in a wildfire event.

Consequences

Consequences examine the importance of the asset and the implications of its damage or destruction. This assessment used a rubric to capture the significance, which included:

- **Effect on park system function**: Does the bridge provide the only access to a specific area, or is there an alternate route? How many people rely on it? Would its loss eliminate access to the entire park or just a small area? If the bridge provides essential access, are there other parks with similar recreational opportunities?
- **Repair or replacement difficulty**: How challenging is it to fix or replace the bridge? This includes factors like time, cost, and site-specific issues. Is the bridge a major vehicle bridge or a simple footpath? Are there regulations requiring it to be replaced with a larger or more complex structure?
- **One-time versus ongoing impact**: Is the bridge designed to be lightweight and flammable, requiring a replacement with wood or fiberglass, or can it be replaced with something more durable, like steel, which would withstand future fires?
- **Impact on park neighbors and local businesses**: Does the bridge provide access from nearby neighborhoods? Is it important for tourism or supporting local industries? Would its loss cause public safety issues or encourage trespassing as people seek alternative routes?

Adaptive Capacity

Adaptive capacity refers to the ability of the asset being assessed to cope with or recover from the impact. For example, if the bridge is destroyed, can the road or trail still be used as a wet crossing,

or is it impassable? Even though the bridge is primarily made of wood, which is sensitive to fire, does it have a steel understructure that would allow for easy replacement of the wooden planking?

Vulnerability
Vulnerability is the combination of impact, consequence, and adaptive capacity. For instance, a bridge that serves as the only public access route and is critical for emergency services may be highly vulnerable if it is made of old wood and located in a high-fire-risk area. Replacing such a bridge with a more resilient structure can reduce this vulnerability. In contrast, a previously existing wooden bridge that was replaced with a steel structure now has a lower sensitivity to fire, making it significantly less vulnerable.

The initial factors in this assessment—exposure and sensitivity—are aspects we have little control over in the short term. However, vulnerability involves several factors that Parks can influence, such as adaptive capacity, and even consequences, by making key system elements more redundant.

Climate Change Vulnerability Assessment Results

This analysis ranked parks based on impact, consequence, and adaptive capacity, helping to prioritize actions toward the most vulnerable parks and facilities. The main climate threats include drought, heat, wind, wildfire, landslides, intense rain and flooding, sea level rise, storm surge associated with sea level rise, and coastal bluff retreat. Earthquakes was also identified as a threat to the Reginal Parks system. Gualala, Stillwater, and Doran Regional Parks were identified as needing specific plans due to their high climate vulnerability, while other parks can be managed by addressing common threats like bluff erosion, coastal access, and sea level rise around Bodega Harbor, and flooding in Russian River Parks. Table 3 below displays vulnerability scoring that was generated on a 1-5 scale in which a score of 1 can be interpreted as ‘low’ vulnerability and a score of 5 can be interpreted as ‘high’ vulnerability. This scoring is intended to illustrate park-specific vulnerability to each climate threat. The level of threat at a given park will be influenced both by how much a specific hazard occurs in a particular place and how sensitive the place is to that effect.

Key vulnerabilities and resilience opportunities based on the Vunlerability Analysis and Table 3 are summarized below.

Table 3 Regional Parks Vulnerability to Climate Change

Park	Drought	Heat	Wind	Wildfire	Landslides	Intense Rain, Flooding	Mean Sea Level Rise (SLR)	Storm Surge with SLR	Bluff Retreat	Earthquakes
Andy's Unity Park	2.5	2.5	2.5	2.0	NA	1.5	NA	NA	NA	3.0
Arnold Field	3.5	2.5	3.5	2.0	NA	1.5	NA	NA	NA	3.0
Bird Walk Coastal Access	1.0	1.0	4.0	1.5	1.5	2.5	2.5	3.0	1.5	4.5
Black Point Beach Trail	1.0	1.0	4.0	4.0	2.0	1.5	4.5	5.0	5.0	5.0
Bluff Top Trail	1.5	1.0	4.0	3.0	2.0	2.0	5.0	5.0	5.0	3.5
Bodega Bay Bell Tower	1.0	1.5	4.0	1.5	NA	1.0	NA	NA	NA	3.0
Bodega Bay Yacht Club	1.5	1.5	4.0	3.0	3.0	1.0	5.0	5.0	5.0	5.0
Calabazas Creek Regional Park & Open Space Preserve	2.0	4.0	4.5	4.0	4.5	3.5	NA	NA	NA	2.0
Carrington Coast Ranch Regional Park & Open Space Preserve	1.0	1.5	4.0	4.5	4.0	3.0	NA	NA	NA	2.0
Central Sonoma Valley Trail	1.0	2.5	3.0	2.5	NA	1.0	NA	NA	NA	3.0
Chanslor Ranch	3.0	1.5	3.5	4.5	4.0	3.5	3.0	3.0	2.5	4.0
Cloverdale River Park	2.5	3.0	3.0	2.0	NA	5.0	NA	NA	NA	3.0
Coastal Prairie Trail	1.5	1.5	3.5	4.0	1.5	2.0	NA	NA	NA	4.0
Colgan Creek Bike Trail	1.0	2.5	3.5	2.0	NA	2.5	NA	NA	NA	2.5
Crane Creek Regional Park	3.0	3.0	3.0	3.5	2.0	4.0	NA	NA	NA	3.0
Del Rio Woods	2.0	2.5	3.0	3.0	3.0	3.5	NA	NA	NA	3.0
Doran Regional Park	3.5	2.5	3.5	3.0	1.5	1.5	5.0	5.0	NA	5.0
Ernie Smith Community Park	2.5	2.5	2.5	2.5	NA	2.5	NA	NA	NA	3.5
Foothill Regional Park	2.5	3.5	3.5	2.5	4.0	3.0	NA	NA	NA	4.5
Forestville River Access	1.0	1.5	3.5	3.5	NA	3.5	NA	NA	NA	2.0
Gleason Beach Access	1.0	1.0	3.0	1.5	2.5	4.0	5.0	5.0	5.0	4.0
Gualala Point Regional Park	3.0	2.0	3.5	5.0	4.0	4.5	4.5	5.0	5.0	4.0
Guerneville River Park	2.5	2.5	3.0	2.0	2.0	3.5	NA	NA	NA	3.0
Healdsburg Veterans Memorial Beach	4.0	2.5	3.0	4.0	NA	4.0	NA	NA	NA	4.0
Helen Putnam Regional Park	4.0	3.0	4.0	4.0	3.5	3.0	NA	NA	NA	2.5
Hood Mountain Regional Park & Open Space Preserve	4.0	4.0	4.5	3.5	5.0	4.5	NA	NA	NA	3.0

Park	Drought	Heat	Wind	Wildfire	Landslides	Intense Rain, Flooding	Mean Sea Level Rise (SLR)	Storm Surge with SLR	Bluff Retreat	Earthquakes
Hudeman Slough Public Fishing Access	1.0	3.0	3.5	3.0	NA	2.5	5.0	5.0	NA	2.5
Hunter Creek Trail	1.0	3.5	3.5	1.5	NA	2.5	NA	NA	NA	2.0
Joe Rodota Trail	1.0	3.5	4.0	4.0	2.0	2.5	NA	NA	NA	4.0
Kenwood Plaza Park	3.0	3.0	3.5	3.5	NA	2.5	NA	NA	NA	3.0
Laguna de Santa Rosa Trail	1.0	4.0	3.5	2.0	NA	1.5	NA	NA	NA	2.5
Larson Park	3.0	3.5	2.5	3.5	NA	2.0	NA	NA	NA	3.0
Maddux Ranch Regional Park	3.0	3.5	3.5	2.5	NA	1.0	NA	NA	NA	2.5
Mark West Regional Park & Open Space Preserve	4.0	2.5	4.5	4.5	5.0	4.0	NA	NA	NA	4.0
Mason's Marina	2.5	1.0	4.5	3.5	NA	1.0	5.0	5.0	NA	5.0
Maxwell Farms	3.0	3.0	3.0	4.5	2.0	3.0	NA	NA	NA	3.5
Monte Rio Redwoods Regional Park & Open Space Preserve	1.5	2.0	4.0	5.0	5.0	4.0	NA	NA	NA	2.0
Moran Goodman Park	2.0	2.5	3.0	2.5	NA	NA	NA	NA	NA	2.0
North Sonoma Mountain Regional Park & Open Space Preserve	3.5	2.5	3.5	5.0	4.5	4.0	NA	NA	NA	4.5
Occidental Community Center	2.0	1.5	2.0	3.0	1.5	1.0	NA	NA	NA	2.5
Pebble Beach Sea Ranch Access Trail	1.0	1.0	4.0	3.0	2.5	2.5	4.5	5.0	5.0	4.0
Pinnacle Gulch Coastal Access Trail	2.0	1.0	3.5	4.0	4.0	3.5	4.5	5.0	5.0	3.0
Ragle Ranch Regional Park	3.0	2.0	3.5	4.5	2.5	4.0	NA	NA	NA	2.5
Riverfront Regional Park	4.0	2.0	3.0	4.0	3.0	3.5	NA	NA	NA	2.5
Running Fence - Watson School Historic Park	1.0	2.0	3.5	4.0	NA	1.0	NA	NA	NA	2.5
Russian River Parkway	1.0	2.0	3.5	2.5	4.0	3.0	NA	NA	NA	2.5
Salal Trail	1.0	1.5	4.0	3.0	2.0	3.0	3.5	3.5	4.0	3.5
San Antonio Creek Trail	1.0	3.0	3.0	1.5	NA	3.0	1.5	NA	NA	2.5
Santa Rosa Creek Trail	1.0	3.5	3.5	2.0	NA	2.5	NA	NA	NA	3.5
Shaw Park	2.5	2.5	3.0	2.5	NA	1.0	NA	NA	NA	2.5
Shell Beach Sea Ranch Access Trail	1.0	1.5	4.0	3.0	2.0	2.5	4.5	5.0	5.0	4.0
Shiloh Ranch Regional Park	2.5	3.0	4.0	3.5	5.0	4.0	NA	NA	NA	3.0

Park	Drought	Heat	Wind	Wildfire	Landslides	Intense Rain, Flooding	Mean Sea Level Rise (SLR)	Storm Surge with SLR	Bluff Retreat	Earthquakes
Shorttail Gulch Coastal Access Trail	1.5	1.5	3.5	4.0	4.0	3.5	4.5	5.0	5.0	3.0
Soda Springs Reserve	1.0	1.5	3.0	4.5	2.5	3.5	NA	NA	NA	2.5
Sonoma Valley Regional Park	2.0	2.5	3.5	3.5	3.5	3.5	NA	NA	NA	3.0
Sport Fishing Center	2.5	1.5	4.5	3.5	NA	1.0	5.0	5.0	NA	5.0
Spring Lake Park	2.5	1.5	3.5	4.0	3.0	4.0	NA	NA	NA	4.0
Spud Point Marina	3.0	1.0	4.5	4.5	NA	1.0	5.0	5.0	NA	5.0
Steelhead Beach Regional Park Fishing Access	2.0	1.5	4.0	3.5	1.5	4.0	NA	NA	NA	2.5
Stengel Beach Sea Ranch Access Trail	1.0	1.0	4.0	4.0	3.0	4.0	NA	NA	NA	4.0
Stillwater Cove Regional Park	4.0	1.0	3.5	5.0	4.0	3.5	4.5	5.0	5.0	3.0
Sunset Beach River Access	1.0	2.0	3.0	3.0	3.0	3.5	NA	NA	NA	2.0
Taylor Mountain Regional Park & Open Space Preserve	1.5	3.0	3.5	4.0	4.5	3.5	NA	NA	NA	3.5
Tolay Lake Regional Park	4.0	3.0	4.5	5.0	4.0	3.0	NA	NA	NA	5.0
Tom Schopflin Fields	3.5	2.5	3.0	4.0	NA	2.0	NA	NA	NA	3.0
Walk On Beach Trail	1.0	1.0	4.0	3.5	2.0	2.5	4.5	5.0	5.0	3.5
West County Trail	1.0	3.0	4.0	4.0	2.5	4.0	NA	NA	NA	4.0
Westside Regional Park	3.0	2.0	4.0	3.0	NA	1.0	5.0	5.0	NA	3.5
Wohler Bridge Public Fishing Access	1.5	3.0	2.5	3.5	2.5	4.0	NA	NA	NA	3.0
Wohler Maintenance Facility	2.5	2.0	2.5	3.5	3.0	3.5	NA	NA	NA	2.5
Wright Hill Regional Park & Open Space Preserve	3.0	1.5	4.0	3.5	4.5	3.5	NA	NA	NA	3.0

Key:
1-2=low; 2-3=medium low; 3-4=medium; 4-5=medium high; 5=high

Drought

Droughts dry out vegetation in parks without water, making them more prone to wildfires and possible closures. In addition, river flows in Regional Parks have dropped so low that harmful algae can grow, which is dangerous for wildlife, pets, and visitors. Seven parks received a vulnerability score of 4, indicating 'medium-high' vulnerability to drought impacts.

Heat

During extreme or high heat conditions, parks with accessible water, particularly the Russian River, serve as centers of resilience for Sonoma County. The cooling effects of the river and ample shade make these areas vital. Cloverdale River Park and the Russian River Parkway, despite being two of the hottest parks in Sonoma, remain resilient to extreme heat due to their water access and shade availability.

Wind

A significant number of parks are vulnerable to wind, with 90 percent ranked as having 'medium' score of 2-3 or 'medium-high' score of 4-5 for wind.

Wildfire

Parks most vulnerable to wildfire are often located in historical wildfire corridors, making it difficult to contain fires quickly, whether caused by lightning or human activity. Wildfire vulnerability ratings for all Regional Parks range from 'medium' to 'high' scores (3.5-5). Five parks received a 'high' vulnerability rating of 5 for wildfire.

Landslides

Landslide vulnerability ranges across Regional Parks are based on indicators such as park history of slides and slope. Scores range from the 'low' scores of 1.5 to the 'high' score of 5. Four parks received a 'high' vulnerability rating of 5.

Intense Rain and Flooding

The exposure ratings to flooding and intense rain range from the 'low' rating of 1 to the 'high' rating of 5, indicating significant variability in vulnerability across parks. Fifteen parks were identified as most vulnerable to flooding, each receiving a 'medium-high' vulnerability rating of 4-4.5. One park, Cloverdale River park, was rated 'high' vulnerability to intense rain and flooding, or 5.

Mean Sea Level Rise

Sea level rise vulnerability across the parks ranges from 'medium' to 'high,' with nine parks receiving a 'high' vulnerability ranking of 5. Effects of sea level rise on parks may include a rise in groundwater levels, as freshwater floats on intruding saltwater, or contamination of the water table. This makes water systems in parks vulnerable to sea level rise beyond the associated impacts of storm surge and bluff retreat.

Storm Surge with Sea Level Rise

In addition to sea level rise, storm surge vulnerability was assessed, with seventeen parks receiving the 'high' vulnerability rating of 5. Saturated ground conditions at the bluffs can exacerbate storm surge impacts, causing more damage. Furthermore, the wave direction, particularly at the Sport Fishing Center, intensifies the storm surge by striking the bluffs directly rather than at an angle.

Bluff Retreat

Bluff retreat, associated with sea level rise, is a significant concern, with eleven parks rated as having 'high' vulnerability of 5. Salal Trail was given a 'medium-high' rating of 4. Bluff erosion poses challenges for trail systems in certain parks, where many sections are likely to erode away.

Earthquakes

Earthquake exposure ratings range from the 'medium-low' score of 2 to the 'high' score of 5, with seven parks receiving high exposure scores of 5. Despite this exposure, earthquakes pose a greater threat to park infrastructure, utilities, bridges, and pavement surfacing than to park visitors.

1.8 CARP Engagement and Outreach

Community Outreach and Engagement

Regional Parks engaged the community multiple times during the CARP planning process, providing materials in both English and Spanish. The first round of public engagement took place in the spring and summer of 2023. Early in the planning process, Regional Parks held listening sessions with environmental, recreation, and community groups to understand their needs, challenges, and risks. To reach more people, Regional Parks hosted pop-up events at Spring Lake Park and Doran Beach, offering activities in both languages. These events included dot-voting exercises where the public could share their thoughts on park usage and support for actions to improve environmental benefits, reduce GHG emissions, and cut waste. About 60 people participated in these pop-ups. Additionally, an online survey was conducted, asking similar questions to those at the pop-ups. This survey reached a wider audience and received 388 responses.

Park-goers at Spring Lake Park participate in the voting activity

In the second round of public engagement, held in winter 2024, Regional Parks hosted three pop-up events in Sonoma County. These took place in January and February at Calabazas Creek Park, Windsor Regional Library, and Petaluma Regional Library. During these events, participants were asked to rate their support for the draft CARP measures as supportive, neutral, or unsupportive. To complement these in-person events, an online platform called Consider.it was created, allowing participants to rate various measures and actions for the CARP. This platform saw 72 participants who left over 320 comments and provided 1,824 distinct ratings. Based on community feedback, actions with low support were revised to better reflect public opinion. For more details on community outreach and engagement, please refer to Appendix B.

Implementing Partner Engagement

In December 2023, Regional Parks hosted four virtual meetings with implementing partners to enhance collaboration on developing CARP measures and actions, promoting alignment with other climate initiatives in Sonoma county. Each meeting began with a brief presentation on CARP's purpose and current status, followed by roundtable discussions to gather feedback on the draft measures and actions. These discussions were facilitated using an online Mural board, where participants could share their thoughts either verbally or by typing them directly into the Mural. Participants reviewed key draft measures and actions, suggesting changes and offering insights on implementation to enhance collaboration and success. The measures and actions were refined based on feedback received at these meetings. The meeting topics and participating implementing partners are listed below. For more information on the slides presented or Murals, please refer to Appendix C. The implementing partners that participated in the virtual meetings are provided below:

- **Carbon Sequestration and Natural Systems**
  - Ag + Open Space
  - CAL FIRE
  - Conservation Crops North Bay
  - Gold Ridge Resource Conservation District
  - Natural Resources Conservation Service
  - Regional Climate Protection Authority
  - Sonoma County Climate Action and Resiliency Division
  - Sonoma County Public Infrastructure, Purchasing Division
  - Sonoma Land Trust
  - Sonoma Resource Conservation District
  - University of California Cooperative Extension
- **Community Resilience**
  - Ag + Open Space
  - Permit Sonoma
  - Regional Climate Protection Authority
  - Sonoma County Climate Action and Resiliency Division
  - Sonoma Land Trust
- **Decarbonized and Resilient Buildings and Infrastructure**
  - Regional Climate Protection Authority
  - Sonoma Clean Power
  - Sonoma County Public Infrastructure, Facilities Development
  - Sonoma County Public Infrastructure, Integrated Waste Division
  - Sonoma County Public Infrastructure, Purchasing Division
  - Sonoma County Public Infrastructure, Transit Division
  - Sonoma County Climate Action and Resiliency Division
- **Compost Application, Organic Waste Management, and Water Consumption and Conservation**
  - Conservation Crops North Bay
  - Recology
  - Sonoma County Climate Action and Resiliency Division
  - Sonoma County Public Infrastructure, Integrated Waste Division
  - Sonoma Water
  - Zero Waste Sonoma

2 Measures and Actions

2.1 Measures and Actions Framework

The CARP framework is organized by sectors, measures, and actions and are defined as follows:

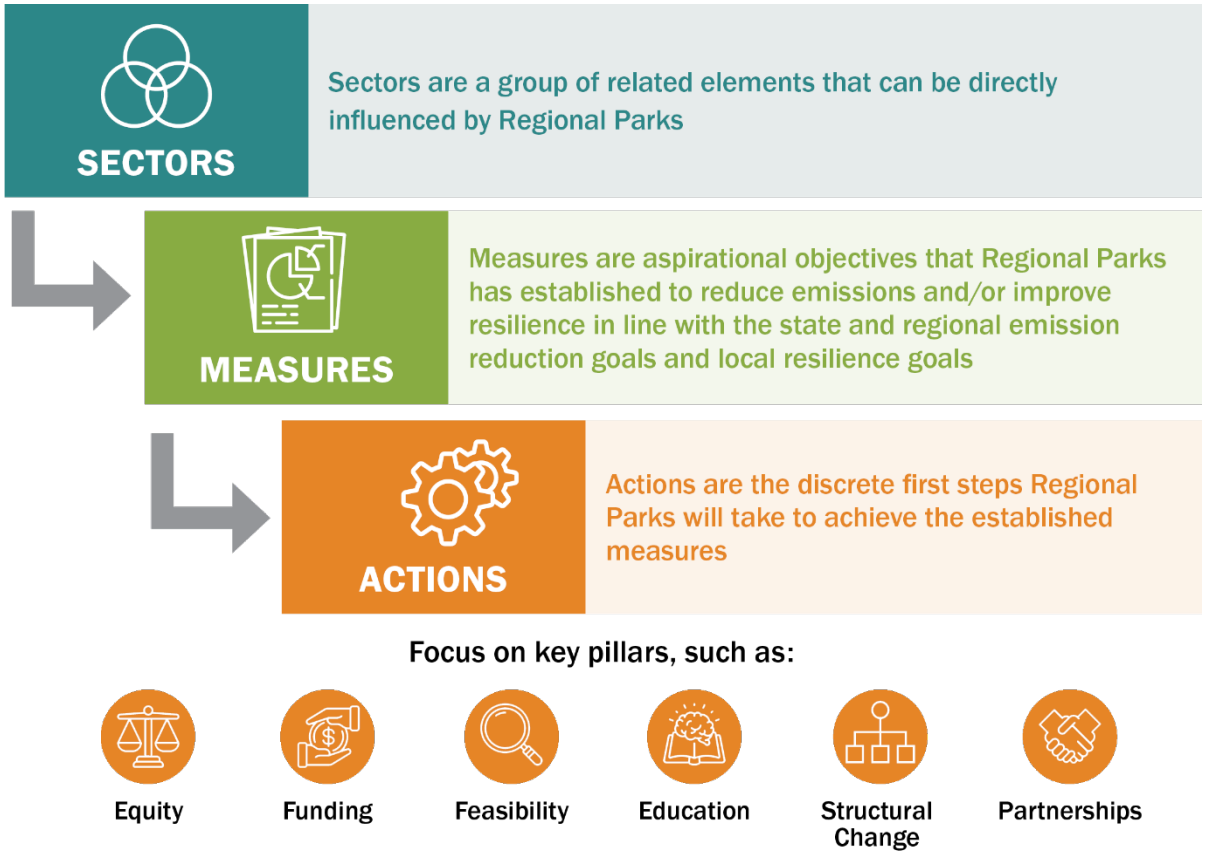
- **Sector**. Sectors are a group of related elements that can be directly influenced by Regional Parks. The three CARP sectors are Carbon Sequestration and Natural Systems, Decarbonized and Resilient Buildings and Infrastructure, and Community Resilience.
- **Measure**. Measures are aspirational objectives that Regional Parks has established to reduce emissions and/or improve resilience in line with the state and regional emissions reduction goals and local resilience goals.
- **Action**. Actions are the discrete first steps Regional Parks will take to achieve the established measures. Over time, the CARP will be reviewed, and additional actions will need to be added to make greater progress on the established measures.

Regional Parks has selected six action pillars to increase the likelyhood of successful CARP implementation. When incorporated into the design of each measure, these sixe pillars result in implementable and effective adaptation and GHG emissions reduction strategies. The six action pillars are listed below.

1. **Equity**. Measures include actions to address systemic inequities that disadvantaged and vulnerable communities currently face and to equitably distribute the benefits of each goal.
2. **Funding**. Measures include actions that identify funding and financing avenues to support the associated costs and be designed to overcome potential financial impacts of modernization.
3. **Feasibility**. Measures include actions that help Regional Parks understand costs, benefits, barriers, and opportunities to develop programs and policies to best serve the community.
4. **Education**. Measures include actions that incorporate feedback from community engagement and empower residents and interested parties to engage effectively in local decision making.
5. **Structural change**. Measures include actions which establish institutional and policy framework to facilitate long-term change.
6. **Partnership**. Measures include actions that focus on partnerships with outside agencies and community-based organizations to leverage expertise and resources to create programs and policies that Regional Parks would not be able to achieve alone.

The CARP framework and six action pillars are illustrated in Figure 4.

Figure 4 CARP Framework and Action Pillars



CARP implementation will require a phased approach to help prioritize measures and actions.

- **Ongoing.** Currently underway and/or will be implemented across multiple phases.
- **Phase 1.** Implementation to occur between 2024 – 2026.
- **Phase 2.** Implementation to occur between 2027 – 2029.
- **Phase 3.** Implementation to occur in 2030 and beyond.

Regional Parks will be the lead department for CARP implementation with the support of other County departments for some actions, as identified in Appendix E. Community input was used to identify the top five measures supported by the public, which are marked with this icon in the Section 2 Measures and Actions tables. Regional Parks gathered support levels for CARP measures through in-person pop-up events and on the Consider.it platform. See Section 1.8 CARP Engagement and Outreach and Appendix B for more information on CARP Community Outreach and Engagement.

2.2 Emissions Reduction

Six of the CARP's measures detail achievable and implementable GHG emissions reduction policies designed to achieve the state's GHG emissions reduction targets for 2030 (40 percent below 1990 levels) and provide substantial progress towards meeting the longer-term target of carbon

neutrality by 2045. Table 4 shows the GHG emissions reductions for 2030 and 2045 GHG resulting from each of the six measures that provide quantifiable reductions.

Table 4 Emissions Reduction

Measure	2030 GHG Emissions Reductions (MT CO_2e)	2045 GHG Emissions Reductions (MT CO_2e)
DR-1: Electrification and Retrofits for Existing Buildings	16	39
DR-3: Energy Resilience	61	0
DR-5: Reduce Organic Waste	811	2,252
DR-9: Vehicle Fleet	283	973
DR-10: Off-road Fleet	1	8
DR-11: Employee Commute	288	561
Total	**1,459**	**3,833**

2.3 Sectors

The CARP measures and actions are separated into the following three sectors, or groups of related elements that can be directly influenced by Regional Parks:

- Sector 1 Carbon Sequestration and Natural Systems
- Sector 2 Decarbonized and Resilient Buildings and Infrastructure
- Sector 3 Community Resilience.

2.4 Sector 1 Carbon Sequestration and Natural Systems

The following tables include the measures and actions related to carbon sequestration and natural systems on parks land. Each table includes the relevant action pillars and phase, as described in Section 2.1 Measures and Actions Framework. Measures in this system include grazing management on park land, carbon stock protection and enhancement through climate smart practices, long-term wildfire resilience through annual vegetation treatment, nature-based flood resilience projects, and compost application.

Sector 1 Carbon Sequestration and Natural Systems

Measure CS-1: Grazing Management – By 2030, expand grazing to support ecosystem health, protect and enhance carbon stocks, maintain soil health, reduce wildfire risk, and reduce greenhouse gas emissions.

Action Number	Action	Pillar	Phase
CS-1.1	Draft and update grazing management plans for all parks with current or planned grazing by describing present management practices, identifying opportunities for changes to grazing practices, and addressing existing constraints (e.g., inadequate fencing to effectively manage grazing and water development). Maintain both grazed and ungrazed areas to demonstrate practice effectiveness.		Ongoing
CS-1.2	Establish guidelines for the Master Planning process that consider opportunities for grazing that supports ecosystem health, optimizes carbon sequestration, reduces wildfire risk and water quality impacts, protects streambanks, and restores native grasslands, while balancing other park and recreational needs.		Phase 1
CS-1.3	When feasible, revegetate grazed streambanks with woody vegetation and perennial grass for erosion control, carbon sequestration, and ecosystem health on priority areas.		Ongoing
CS-1.4	Conduct a cost benefit analysis for Regional Parks to own and operate a herd of livestock. The cost benefit analysis should include feedback from other agencies, contract grazers, rangeland managers, and factors such as infrastructure (fencing and water) costs, veterinary costs, staff cost, and other costs to be determined.		Phase 2
CS-1.5	Develop and implement updated grazing leases and contracts to decrease procurement barriers and increase opportunities.		Ongoing
CS-1.6	Participate in grant application efforts to build and/or rebuild grazing infrastructure as aligned with Regional Parks Strategic Plan goals.		Ongoing
CS-1.7	Support grant applications by long-term lessees to develop and invest in grazing infrastructure (i.e., NRCS) as aligned with Regional Parks Strategic Plan goals.		Ongoing
CS-1.8	Partner with Resource Conservation Districts and the Natural Resources Conservation Service to update signage, website, and other public information about grazing to communicate benefits of grazing, Regional Parks strategy to limit negative grazing impacts, appropriate visitor behavior, and other related items consistent with the Sonoma County language access policy.		Phase 2
CS-1.9	Partner with Resource Conservation Districts, the University of California Cooperative Extension, and the Natural Resources Conservation Service to provide annual Regional Parks staff training that educates staff on how to share land with livestock.		Phase 1
CS-1.10	Share social media posts that educate park users on how to share land with livestock including understanding general animal behavior and the climate benefits of grazing.		Phase 2

Structural Change Feasibility Partnerships Funding Education

Measure CS-2: Carbon Stock Protection and Enhancement – Protect and enhance carbon stock on parks land through climate smart land practices that provide multiple benefits, such as ecological restoration, soil and land regeneration, and wildlife habitat conservation.

Action Number	Action	Pillar	Phase
CS-2.1	Use the County's Carbon Inventory and Sequestration Potential Study to develop new climate/carbon plans that evaluate carbon sequestration potential, prioritize climate-smart practices, based on multiple benefits, including carbon sequestration and protection of existing carbon sinks, and identify locations to implement recommended practices by 2030. Partner with Resource Conservation Districts to develop the climate/carbon plans for projects that warrant it.		Phase 1
CS-2.2	Plan and manage forests for mature, old-growth character, which provide important wildlife habitat, contribute to ecosystem services such as clean water and carbon storage, and harbor significant social and cultural values for many human communities.		Phase 2
CS-2.3	Participate in grant application efforts to access funding for climate-smart land practices on parks land.		Ongoing
CS-2.4	Using results from the parks-specific climate/carbon plans described in Action CS-2.1, implement climate smart practices, such as regenerative land and soil management practices in developed and transitional areas, riparian and native grassland restoration, oak woodland restoration, and range planting. Maintain consistency with the Riparian Corridor Combining Zone Ordinance for all land and soil management practices implemented in the riparian zone.		Ongoing
CS-2.5	As part of Regional Parks staff and Youth Crew intern education, augment to include workforce education training to include land conservation techniques and best practices to support the development of a land conservation workforce in Sonoma County. (Modified Strategic Plan Action).		Phase 2
CS-2.6	Increase Tribal coordination efforts to manage lands and increase resilience based on traditional practices and historic vegetation through co-management agreements and Tribal-led projects (Modified Strategic Plan Action).		Phase 1
CS-2.7	Include carbon stabilization and sequestration and other climate information in interpretive multilingual signage and other educational products as appropriate.		Phase 2
CS-2.8	Provide Regional Parks maintenance supervisors and workers with regular and ongoing training in best practices for regenerative landscaping soils management and native plant maintenance, such as available with ReSCAPE California.		Phase 1
CS-2.9	Expand Regional Parks' capacity to implement climate smart land practices at the appropriate times by establishing long-term agreements with implementing partners (i.e., Resource Conservation Districts) that avoid capacity constraints and allow for quick implementation of projects.		Phase 1

 Feasibility  Partnerships  Structural Change  Funding  Equity  Education

Measure CS-3: Long-Term Wildfire Resilience – Optimize annual vegetation treatment to restore fire regime and forest health.			
Action Number	**Action**	**Pillar**	**Phase**
CS-3.1	Acquire a curtain burner to convert excess woody biomass into biochar for re-integration into the landscape after hazard fuel reduction projects.	Feasibility	Phase 1
CS-3.2	Partner with Sonoma Water to explore opportunities to collectively manage biomass from Sonoma Water vegetation treatment along riparian areas.	Partnerships	Phase 1
CS-3.3	Conduct a feasibility study (use the wildfire fuel mapper in concert with other vegetation data and expert input) to find the total acreage on park lands suited for prescribed burning (i.e., based on goals such as natural resource benefits and constraints, proximity to receptors, access, and topography), determine where thinning is needed to restore forest health, and include an evaluation of where livestock grazing could be used to prepare pre-burn. Ground-truth the results of the wildfire fuel mapper as part of the feasibility study. Incorporate all fuel treatments into the Community Wildfire Protection Plan to track over time.	Feasibility	Phase 2
CS-3.4	Support staff training through the State-Certified Prescribed-Fire Burn Program and maintain at least one person on staff that is certified to plan, manage, and partner with other Agencies regarding prescribed fire on parks land.	Structural Change	Ongoing
CS-3.5	Help build local capacity for prescribed fire implementation by partnering with Prescribed Burn Associations (i.e., Good Fire Alliance), Resource Conservation Districts, CAL FIRE, the University of California Cooperative Extension, Audubon Canyon Ranch, and Tribal groups to participate in and host TREX events on park lands with scholarship opportunities for low-income and Tribal-affiliated people to attend and learn how to re-integrate fire into the landscape. Welcome the public to these events to experience the process and learn about the long-term benefits of burning. Partner with the Northern Sonoma County Air Pollution Control District and Bay Area Air Quality Management District to share community health resources.	Equity, Partnerships	Phase 1
CS-3.6	Partner with Ag + Open Space to host Resilient Forests & Watershed Workshops for the public on parks land. These workshops would allow landowners to learn about vegetation treatments on parks land, the long-term environmental benefits of these practices, and develop vegetation management projects with the help of technical advisors from Regional Parks, local Resource Conservation Districts, CAL FIRE, and fire professionals.	Education, Partnerships	Phase 2
CS-3.7	Conduct 1-2 broadcast burn events annually and develop burn plans for a suite of park properties across a range of geographies to be implemented as conditions allow.	Structural Change, Partnerships	Ongoing
CS-3.8	Partner with Ag + Open Space, CAL FIRE, Resource Conservation Districts, the University of California Cooperative Extension, and Youth Crew to host pile burning workshops to reduce residual fuels from hazard reduction projects and share the appropriate process and procedures for pile burning. Prioritize these events in park areas adjacent to private properties and invite the public, including wine growers, to help educate on the benefits of fire.	Partnerships, Education, Equity	Phase 2

Feasibility · Partnerships · Structural Change · Equity · Education

Measure CS-4: Flood Resilience – Implement nature-based projects to reduce coastal and inland flood risk to parks, buildings, and infrastructure. Accommodate an increase in flooding where it provides community and ecosystem benefits and increases resilience.

Action Number	Action	Pillar	Phase
CS-4.1	Work with California Department of Fish and Wildlife, California Coastal Commission, Groundwater Sustainability Agencies, Sonoma Water, Resource Conservation Districts, and others to manage, enhance, and restore natural systems such as wetlands and floodplains to reduce flood risk and treat stormwater runoff. Utilize process-based restoration practices (e.g., beaver dam analogs, using live vegetation and/or woody material for bank stabilization, and using brush from vegetation management to trial brush packing as an approach for treating gullies) within Regional Parks to slow stormwater and increase infiltration, including along walkways, parking lots, and impervious surfaces.		Ongoing
CS-4.2	Conduct a feasibility study by 2027 for park areas that are at-risk for near-term sea-level rise related flooding and/or erosion to identify and implement nature-based solutions and plan for relocation or retreat as necessary. This should focus on high-use access areas to beaches and bluffs.		Phase 1
CS-4.3	To increase riverine resilience, follow the *Sonoma County Water Agency Flood Management Design Manual* criteria to stabilize damaged riverbanks, improve access areas, and eliminate volunteer pathways within parks. In the long-term, Regional Parks will plan for the strategic retreat or hardening of buildings and infrastructure located in areas identified as at-risk to riverine flooding (see action DR-1.5).		Ongoing
CS-4.4	Implement a nature-based solution pilot project by 2028 to address coastal erosion on parks. Examples of nature-based projects include implementing a dune restoration project using sand fencing, native vegetation, or applying locally sourced sand, as well as implementing living shoreline projects (e.g., oyster reefs or increasing the eelgrass footprint) to decrease coastal erosion within parks in Bodega Bay.		Phase 1
CS-4.5	Conduct a feasibility study by 2030 for parks that have been repeatedly damaged by riverine flooding to identify and implement hybrid nature-based solutions to address the problem. Feasibility study should explore creating new marsh habitat, building setback levees that reduce flooding, improving water quality, retreating at-risk park facilities, and increasing public access.		Phase 2

 Structural Change  Feasibility  Partnerships

Measure CS-5: Compost Application – Increase and optimize the annual application of Senate Bill 1383 registered compost, where suitable, to help the County achieve compost procurement rates for Senate Bill 1383.			
Action Number	**Action**	**Pillar**	**Phase**
CS-5.1	Identify Regional Park lands suitable for increased compost application when feasible and cost effective, based on slope (less than 15 percent), proximity to water features (greater than 30 meters to allow for any runoff to soak into the ground instead of flowing into the water), ease of access, predominance of non-native grasslands, proximity to compost sources, lack of conservation easement restrictions and areas of high disturbance such as grazed lands. Identify zones suitable for increased compost application as part of preparing climate or carbon plans for each park (see Action CS-2.1).		Phase 1
CS-5.2	Conduct a feasibility study to amend all maintained turf fields with ¼ to ½ inch of compost applied topically in the fall. Implement the recommendations identified in the feasibility study.		Phase 1
CS-5.3	Partner with cities, Zero Waste Sonoma, and CalRecycle to identify appropriate quality and quantities of compost to be placed on parks land to help Sonoma County meet regional Senate Bill 1383 requirements.		Ongoing
CS-5.4	Help host compost giveaway events in partnership with Zero Waste Sonoma. Encourage community garden partners that serve vulnerable populations to educate community of the benefits of compost application for soil health and crop productivity.		Phase 2
CS-5.5	Fund implementation of compost application on parks land using Department of Resources Recycling and Recovery (CalRecycle) SB 1383 grant funding.		Ongoing
CS-5.6	Engage in County discussions to adopt a shared vision for compost application necessary to meet SB 1383.		Ongoing

 Feasibility  Partnerships  Education  Equity  Funding

2.5 Sector 2 Decarbonized and Resilient Buildings and Infrastructure

The Decarbonized and Resilient Buildings and Infrastructure sector includes four sub-sectors, Buildings and Infrastructure, Solid Waste, Water, and Transportation. These subsectors are included in the 2019 Operational GHG Emissions Inventory, described in Section 1.6 Regional Parks Greenhouse Gas Emissions and Appendix A.

Buildings and Infrastructure

Buildings and other facilities make up about 2 percent, or 55 metric tons of CO_2e, out of the total 2,022 metric tons of CO_2e generated by Regional Parks. These emissions stem from the use of propane and electricity in Regional Parks buildings and facilities. Specifically, 29 metric tons of CO_2e are attributed to propane consumption, while 28 metric tons of CO_2e result from electricity usage. To address these emissions and increase resilience of building and infrastructure, measures include electrification and retrofits for existing buildings, electrification and resilient design of new buildings, purchasing 100 percent eligible renewable and carbon-free power, and developing a solar-powered mobile charging hub program.

Sector 2 Decarbonized and Resilient Buildings and Infrastructure - Buildings and Infrastructure

Measure DR-1: Electrification and Retrofits for Existing Buildings – Electrify existing buildings to reduce fossil fuel usage by 50% by 2030 and 100% by 2045 and fire harden 12 buildings to meet the 2022 California Fire Code requirements and increase resilience to wildfires, flooding, and extreme temperatures.

Action Number	Action	Pillar	Phase
DR-1.1	Inventory all propane-powered equipment in existing buildings and develop a prioritized schedule for replacement to reduce propane usage 50 percent by 2030 and 100 percent by 2045. For buildings that use propane-powered equipment for back-up power, lack access to the electrical grid, or are at risk to power-safety shutoffs establish replacement schedules with plans to install on-site renewable power generation and carbon-free back-up power.		Ongoing
DR-1.2	Complete a combination of building electrification, energy efficiency, and weatherization retrofits for 50 percent of Regional Park residence buildings, 50 percent of visitor centers, and 30 percent of reporting location buildings by 2030 to improve energy efficiency, provide indoor cooling, and reduce greenhouse gas emissions.		Ongoing
DR-1.3	Include site assessments of parks located in areas with the greatest concentration of vulnerable populations and at highest risk of extreme heat events in existing planning efforts. Evaluate thermal comfort, availability of shade, building and pavement materials, and landscape features. Survey park visitors to obtain input on park design and thermal comfort. Evaluate the feasibility of capital expenditures to install shade structures and other cooling features, and change materials (paving, building) to those with low solar gain. Partner with community-based organizations to explore various solutions to increase thermal comfort in parks. Provide trainings for staff to conduct these site assessments.		Phase 1
DR-1.4	Prepare a sea level rise vulnerability assessment and adaptation plan for Regional Park buildings and infrastructure by 2030. Prioritize evaluation of the following parks which are at highest risk to sea level rise and coastal hazards including Doran, Westside, Spud Point Marina, and Gualala Point. The assessment will include consideration of ice plant replacements for slowing soil erosion on slopes.		Phase 1
DR-1.5	Seek funding for implementing a trigger-based monitoring program for buildings and infrastructure located in areas identified as at-risk to sea level rise, shoreline hazards, or riverine flooding to assist in establishing an adaptive management approach for strategic relocation.		Phase 1
DR-1.6	Prioritize investing in flood-resilient infrastructure or relocation where infrastructure is repeatedly damaged.		Phase 1
DR-1.7	Coordinate with PG&E to conduct an inventory of all electric distribution lines within parks land to understand possible high risk ignition points and share this information with CAL FIRE for review and suggestions. Conduct hazard fuel reduction beneath high voltage lines outside of electric ROW per PUC 4292 and 4293.		Phase 2
DR-1.8	Inventory buildings in moderate and high wildfire risk zones to identify structure hardening opportunities that comply with local or PUC authority in ways that mitigates negative impacts to habitat.		Phase 1
DR-1.9	Continue to coordinate with CAL FIRE's interagency Watershed Emergency Response Team (WERT) and other appropriate agencies to identify and respond to post fire debris flow threat.		Phase 2

Measure DR-1: Electrification and Retrofits for Existing Buildings – Electrify existing buildings to reduce fossil fuel usage by 50% by 2030 and 100% by 2045 and fire harden 12 buildings to meet the 2022 California Fire Code requirements and increase resilience to wildfires, flooding, and extreme temperatures.			
DR-1.10	Participate in interagency working groups with California Coastal Commission and the Bay Conservation and Development Commission to improve the coastal permitting and compliance process to respond to sea level rise more effectively through planning efforts and project implementation.		Ongoing

 Feasibility  Structural Change  Equity  Funding  Partnerships

Measure DR-2: Electrification and Resilient Design for New Buildings – Require all new park buildings and infrastructure built after 2024 to be 100% electric, include solar and battery storage, and be built using materials rated for fire and flood resistance, supports indoor air quality and air filtration systems, and weatherized against temperature extremes.			
Action Number	**Action**	**Pillar**	**Phase**
DR-2.1	In alignment with the Sonoma County Five Year Strategic Plan's Climate Action and Resiliency goals and in anticipation of the Sonoma County Resilience Master Action Plan, require new buildings to be all-electric- to reduce GHG emissions and improve energy efficiency.		Ongoing
DR-2.2	Site all new Regional Parks buildings and infrastructure outside of floodplain areas, taking into account projected sea level rise and increasing severity in riverine flooding. For new buildings and infrastructure that cannot be sited outside of areas with flood risk (i.e., coastal areas suited for water-oriented recreational activities) adopt and apply the following policies by 2024: • Elevate new buildings above projected sea level rise and base flood elevation or relocate to less vulnerable areas based on vulnerability assessment (see action DR-1.6). • Use boardwalks, bridges, and/or other design features to provide continuity of the trails in sections that are vulnerable to sea level rise, coastal hazards, and riverine floods. Use flood, heat, and drought resistant materials. • Other solutions that are practical		Ongoing
DR-2.3	Adopt the following policies by 2024 requiring new buildings and infrastructure to meet the following fire hardening standards: • Standardize subterranean service drops for all new electrified infrastructure. • Require all new buildings to adhere to PUC 4291 Zone 0 (ember resistant) standards. • Require Zone 1 (5-30 feet) fuels maintenance standards for 50 feet as the minimum from all new structures within parks.		Phase 1
DR-2.4	Implement Sonoma County policies and best practices requiring new buildings to be weatherized against temperature extremes (e.g., indoor cooling, cool roofs, and cool walls) and monitor updates to State guidance for new buildings.		Ongoing
DR-2.5	Apply for grant funding or rebates to pay for upgraded materials and resilience.		Ongoing
DR-2.6	Make a recommendation to the Office of Equity and Purchasing Agent to consider updating contracting policy to either provide a higher score or require participation from local Disadvantaged Business Enterprises (DBEs), Small Business Administration Business Development Program participants, Minority Business Enterprises (MBEs), or similar program in all parks construction projects, if it is determined that the approach produces the desired results.		Phase 1
DR-2.7	As an adaptive approach, explore the feasibility of fully modular, movable structures that can be moved to higher locations in the future as precipitation rates get more extreme and sea levels rise.		Phase 2

 Structural Change  Funding  Equity  Feasibility

Measure DR-3: Energy Resilience – Purchase 100% eligible renewable and carbon-free power and increase on-site generation of renewable energy to source 60% of electricity from eligible renewable and carbon-free sources by 2030 and 100% by 2045; and install back-up battery power for all critical buildings by 2028.			
Action Number	**Action**	**Pillar**	**Phase**
DR-3.1	Continue purchasing 100 percent local, renewable electricity from SCP's EverGreen service for all Regional Parks electricity accounts.		Ongoing
DR-3.2	Partner with PG&E and Sonoma Clean Power to conduct an energy resilience study that evaluates the risk of power outages at parks during extreme weather events and wildfires. Identify buildings and infrastructure that are critical to Regional Parks operations and serve vulnerable and Tribal communities in rural or isolated portions of the county. Evaluate feasibility and cost-benefit, including environmental impacts, of installing renewable micro-grids, battery storage, solar-powered array on parking lots and grazing fields, rooftop solar, and wind power on the coast.		Phase 1
DR-3.3	Apply for grants to secure funding to implement the recommendations of the energy resilience study.		Ongoing
DR-3.4	Install on-site capacity to obtain 1,300 MWh per year of carbon-free renewable energy by 2030. Examples include adding solar shaded picnic areas (with power and plugs), solar microgrids in parking lots and on new or refurbished residences and offices as able by code. All parks that undergo a Master Planning process will include an assessment for and incorporation of renewable energy generation if feasible based on-site conditions.		Ongoing
DR-3.5	Partner with Sonoma Clean Power for financial and technical assistance for on-site renewable energy generation and electric back-up power. Install back-up battery power for all critical buildings, as identified in the energy resilience study, by 2028.		Ongoing

 Structural Change  Partnerships  Feasibility  Equity  Funding

Measure DR-4: Solar-Powered Mobile Charging Hub Program – Purchase or acquire 10 solar mobile battery generators by 2030 and 15 by 2045 to be used by Regional Parks and the public or in an emergency, by community members and emergency responders.			
Action Number	**Action**	**Pillar**	**Phase**
DR-4.1	Prioritize the development of solar mobile charging hubs in underserved or low-income communities within the county to provide convenient access to clean energy based on community needs year-round. Use charging stations and hubs at facilities that would close during power outages, prioritizing those that function as cooling and warming centers. Engage with target communities in partnership with local community-based organizations to understand needs and priorities (i.e., electronic devices and medical equipment charging during power outages and electric vehicle charging).		Phase 1
DR-4.2	Conduct a feasibility study to assess the technical and financial viability of implementing reliable energy efficient solar charging infrastructure in park locations within the county where the charging hubs can be installed based on factors like foot traffic, proximity to public transportation, and solar exposure, as well as use patterns and accessibility during emergencies. Evaluate factors such as sunlight hours, energy demand, and grid connectivity. Assess the daily use and benefit of the battery packs, so they are economically beneficial.		Phase 1
DR-4.3	Secure funding from various sources, such as grants, public-private partnerships, and renewable energy incentives or subsidies, to cover the costs of designing, installing, and maintaining the charging hubs.		Ongoing
DR-4.4	Integrate solar charging hubs into the existing park infrastructure in areas with lower grid availability, such as existing picnic areas, playgrounds, and visitor centers. Make them aesthetically pleasing and user-friendly.		Ongoing
DR-4.5	Partner with Sonoma Clean Power and local businesses, utilities, non-profit organizations, and educational institutions to design, develop, fund, and maintain the charging hubs. Leverage their expertise and resources for a more comprehensive program.		Ongoing

Equity Education Feasibility Funding Structural Change Partnerships

Solid Waste

In 2019, Regional Parks disposed of about 2,494 tons of solid waste, generating approximately 943 metric tons of CO_2e, making solid waste the largest contributor to Regional Parks' emissions. A key action to reducing these emissions is to encourage "Leave No Trace" or "pack in-pack out" waste management approach by removing waste receptacles from low-traffic park areas and expanding visitor access to recycling and compost receptacles in high use areas, such as sports fields and picnic areas. This action also prevents overflowing trash cans, which can harm wildlife and contaminate waterways. Potential increases in littering as a result of waste receptacle removal can be mitigated through signage and educational materials promoting "Leave No Trace" principles. Other actions in this sector include reducing waste through proper sorting, installing water refill stations and sinks to encourage the use of reusable items, and continuing to support beach clean-up events.

Sector 2 Decarbonized and Resilient Buildings and Infrastructure - Solid Waste

Measure DR-5: Reduce Organic Waste – Collaborate with Recology to reduce landfilled organic waste, including food waste, food soiled paper, and green material, 54% by 2030 and 100% by 2045.

Action Number	Action	Pillar	Phase
DR-5.1	Review current waste bin locations and signage on parks land to confirm all compost, recycle, and landfill bins are co-located and have clear, visual signage, Where necessary and not in conflict with the Leave No Trace Seven Principles educational campaign, install additional compost and recycling bins, and improve signage. Use containers that are wildlife resistant and Interagency Grizzly Bear Committee (IGBC) certified. Signage should be accessible to various communities and include QR codes with additional information.		Phase 1
DR-5.2	Assess the internal and external capacity needed to collect and process Regional Parks' organic waste and establish a partnership with waste haulers to meet capacity needs.		Ongoing
DR-5.3	Pursue grants from the Department of Resources Recycling and Recovery (CalRecycle) and other organizations to expand the Regional Parks' capacity to reduce landfilled organic waste.		Ongoing
DR-5.4	Through signage, art installations, and Regional Parks' community activities and events educate community members on the impacts of waste, proper disposal methods for organic waste and reasons to avoid contamination. Include information on local composting efforts within parks.		Phase 1
DR-5.5	Continue to partner with Recology, Zero Waste Sonoma, University of California Cooperative Extension, and local conservation groups to compost Regional Parks organic waste.		Ongoing
DR-5.6	Partner with Zero Waste Sonoma to develop educational materials focused on using reusable and compostable materials. Post this information around campgrounds, group picnic areas and concessions. Make this information part of the website, reservations, and special use permit process.		Phase 1
DR-5.7	Provide large sinks at campsite locations to allow for more convenient dishwashing and encourage the use of reusable containers while camping.		Phase 2

 Structural Change  Equity  Feasibility  Partnerships  Funding  Education

Measure DR-6: Reduce Inorganic Waste – Reduce inorganic waste in Regional Parks 75% by 2030 and 90% by 2045.			
Action Number	**Action**	**Pillar**	**Phase**
DR-6.1	Partner with vendors (i.e., river shuttle, inflatable vendors, and Spring Lake concessionaire) and Zero Waste Sonoma to reduce single-use and disposable plastics through sustainable procurement, educational materials, and enforcement of County of Sonoma's Disposable food service ware and polystyrene foam ban ordinance (No. 6355).		Ongoing
DR-6.2	Partner with Zero Waste Sonoma to install more refillable water stations using CalRecycle grant funds.		Phase 1
DR-6.3	Continue to educate visitors on the Sonoma County Leave No Trace Seven Principles, in particular the concept of "pack it in, pack it out," to reduce waste and litter in parks. Implement this messaging at five park events and programs per year.		Ongoing
DR-6.4	Partner with Recology and secure funding to hire a consultant for a waste audit and characterization study of Regional Parks' properties. The study would establish a baseline understanding of current waste levels and condition. The study's findings would be used to create a set of best practices that would aid in staff decision-making regarding trashcan numbers, dumpster placement, and the design of new park areas.		Phase 1
DR-6.5	Conduct bi-annual audit of Regional Parks' waste to inform and track the effectiveness of solid waste reduction strategies.		Ongoing
DR-6.6	Partner with CalRecycle, Recology, Conservation Corps North Bay and Zero Waste Sonoma to more broadly distribute educational information regarding free curbside Bulky Items Recycling collection and reduced waste services cost. Target distribution of educational information in parks most impacted by unauthorized trash sites.		Ongoing
DR-6.7	Partner with Zero Waste Sonoma and Recology to reduce solid waste sent to landfill by removing 25 percent of the trash receptacles offered, reducing trash pick-up truck trips by 25 percent, and generally improving waste-sorting. Increase CCNB contract amount to expand the number of parks with recycling and compost service.		Ongoing
DR-6.8	Reduce waste associated with fishing lines by adjusting signage in multiple languages and increasing fishing line receptacles at water-related recreational facilities to educate boat owners about environmental impacts.		Ongoing
DR-6.9	Continue to support beach clean-up days with local organizations (e.g., Russian Riverkeeper and Coastwalk) to build awareness of the issues of trash and reduce impacts on coastal assets.		Ongoing
DR-6.10	Partner with Conservation Corps North Bay to host educational waste-sorting events for the public.		Ongoing

 Partnerships  Structural Change  Funding  Education  Feasibility  Education

Water

In 2019, GHG emissions from water use accounted for less than 1 percent of total emissions. Despite this, reducing water usage at Regional Parks remains a crucial resilience strategy. Key actions to increase water conservation include installing self-shut off valves at campgrounds and spigots, implement greywater capture strategies, promoting water reduction through signage, and converting non-active grass and lawn areas to low water use landscapes.

Sector 2 Decarbonized and Resilient Buildings and Infrastructure - Water

Measure DR-7: Water Consumption/Conservation – Reduce Regional Parks' per acre water consumption by 15% by 2030 and 30% by 2045.			
Action Number	**Action**	**Pillar**	**Phase**
DR-7.1	Install self-shut off valves at all campgrounds and publicly accessible spigots.		Ongoing
DR-7.2	Evaluate potential water conservation strategies such as smart irrigation controllers, greywater re-use, converting unused or poorly used grassy areas and turf into drought tolerant vegetation, and rainwater catchment/harvesting systems at ranger residences, campgrounds, park restrooms, and other structures where appropriate. Implement water conservation strategies to achieve the system-wide targeted water usage reduction.		Phase 1
DR-7.3	Partner with the Gold Ridge Resource Conservation District to participate in their rebate programs to implement greywater capture strategies, including stormwater management curb cuts that drain to water drought-tolerant rain gardens.		Phase 2
DR-7.4	Include the cost to implement identified water reduction measures in Regional Parks annual budget to achieve 15 percent reduction in per acre water consumption by 2030.		Ongoing
DR-7.5	Install informational signage discouraging excessive use of water at Recreation Vehicle (RV) refill sites and explore financial incentives for RVs to reduce water usage (e.g., charging more for water).		Phase 2
DR-7.6	Include informational signage at sites of water reduction efforts to inform and educate the community on climate change and Regional Parks' efforts.		Phase 1
DR-7.7	Work with Sonoma County Fire District and CAL FIRE to establish proper water tank hose hookups for emergency firefighting needs on Regional Parks' water tanks. Conduct a study with CAL FIRE by 2029 to identify the quantity of backup water needed to support parks with vulnerable water supplies and evaluate potential for installing backup water tanks at parks with the most vulnerable water supply (e.g., parks in north County where wells have dried up). Identify existing surface water options to support regional wildfire fighting efforts.		Phase 2
DR-7.8	Transition non-active grass and lawn areas to an alternative low water use landscape, employ climate-adapted regenerative landscape practices that support healthy soil, low water use, and native plantings.		Phase 1

 Structural Change  Feasibility  Partnerships  Funding  Education

Transportation

In 2019, transportation accounted for 1,011 metric tons of CO_2e, or about 50 percent of total emissions. Vehicle fleet emissions contributed 415 metric tons of CO_2e, while employee commutes generated 597 metric tons of CO_2e. Key transportation measures include expanding electric vehicle charging infrastructure, replacing fossil-fuel-powered on-road fleet vehicles with electric vehicles, decarbonizing off-road fleet and equipment, and reducing employee commutes.

Sector 2 Decarbonized and Resilient Buildings and Infrastructure - Transportation

Measure DR-8: Electric Vehicle Infrastructure – Create a comprehensive charging network in unincorporated and rural areas of the County. By 2030, install at least 32 publicly available electric vehicle (EV) chargers at 12parks and 100 EV chargers by 2045.

Action Number	Action	Pillar	Phase
DR-8.1	Conduct a survey and feasibility study to determine the number of Level II and DC Fast chargers needed to support visitors' and tourists' use of ZEVs. Include identification of locations best suited for DC Fast chargers (e.g., locations adjacent to highways, parks visited for shorter periods of time, locations with existing or potential off-grid and/or battery storage solutions, and locations near existing commercial chargers), if any, and Level II chargers (e.g., parks visited for extended periods of time). Also, include analysis of charger locations that serve climate-vulnerable communities and can be powered by direct connection to solar installations based on electricity generation potential.		Phase 1
DR-8.2	Install at least 32 publicly available EV chargers for visitors and staff by 2030 at locations identified in the survey and feasibility study.		Ongoing
DR-8.3	Follow best practices for all parking lot projects to include EV-ready and EV capable parking spaces pursuant to current version of the CALGreen Tier 2 requirements (available at: https//calgreenenergyservices.com/wp/wp-content/uploads/State-of-California-CalGreen-Tier-2-Checklist.pdf).		Phase 1
DR-8.4	Pursue state funding opportunities (e.g., CALeVIP) and funding through regional organizations (e.g., Northern Sonoma County Air Pollution Control District's Go Green! Grant program) to fund publicly accessible EV charging infrastructure. Additionally, explore opportunities to offset the cost of EV charger installation and maintenance through Low Carbon Fuel Standard (LCFS) credits.		Ongoing
DR-8.5	Include and prioritize EV charger installations at locations accessible to community members in rural areas, community members in rental and multi-family properties, and Tribal communities. At minimum, provide the required number of accessible EV charging stations per California Building Code Title 24, Part 2, Chapter 11B based on the total number of EV charging stations provided.		Ongoing
DR-8.6	Promote EV charger locations to visitors and tourists through a dedicated webpage on the Regional Parks website that includes a map of charger locations and specifications.		Phase 2
DR-8.7	Partner with the Regional Climate Protection Authority to identify EV charging infrastructure locations and install chargers.		Ongoing
DR-8.8	Conduct a survey of Regional Parks' visitor sites (e.g., tour bus parking, camp sites) to identify electrical outlets and panel capacities and assess the feasibility of installing additional outlets and upgrading electrical panels to support visitors in using electric vehicles and equipment in place of fossil-fuel powered vehicles and portable equipment. Based on the results, install outlets and upgrade panels to support increased use of electric vehicles and equipment.		Phase 1

 Feasibility  Structural Change  Funding  Equity  Education  Partnerships

Measure DR-9: Vehicle Fleet – Exceed the Advanced Clean Fleet requirements and decarbonize 45% of the on-road vehicle fleet by 2030 and 100% by 2045.			
Action Number	**Action**	**Pillar**	**Phase**
DR-9.1	Work with the Public Infrastructure Fleet Division towards compliance with the Advanced Clean Fleet requirements (California Code of Regulations, Title 13, Section 2016) such that for all medium- and heavy-duty vehicles (i.e., vehicles with a gross vehicle weight rating [GVWR] over 8,500 pounds): • At least 50 percent of purchases are ZEVs by 2024, and 100 percent of purchases are ZEVs by 2027; or • The fleet complies with the ZEV Milestone Option for each group. The policy should also require EV purchases for all on-road fleet vehicles not subject to the Advanced Clean Fleet requirements. Coordinate with County Fleet to continually monitor the availability of ZEVs and work with CARB to receive exemptions to the requirements, where necessary.		Phase 1
DR-9.2	Partner with transit agencies and Sonoma Clean Power to conduct a zero-emission vehicle (ZEV) study of the Regional Parks on-road fleet to develop a schedule to replace vehicles with electric alternatives to comply with Advanced Clean Fleet requirements and decarbonize 44 percent of the vehicle fleet by 2030 (i.e., 45 percent of gasoline vehicles, 30 percent of diesel vehicles, and 45 percent of personal vehicles used for work) and 100 percent by 2045. For vehicles that do not have equivalent electric alternatives available at the time of purchase, consider downsizing the vehicle, using biofuels, or using renewable diesel as a drop-in fuel to decarbonize. In the competitive bidding process, prioritize electrification of the Regional Parks River Shuttle to increase visibility of ZEVs to visitors and tourists.		Phase 1
DR-9.3	Conduct an EV infrastructure study to determine the charging needs to support the ZEV fleet and employee vehicles. Assess feasibility of vehicle-to-grid charging of ZEV fleet to enable batteries to be used as part of the electricity grid to even out demand. Develop a plan with a list of prioritized locations to install EV charging infrastructure for the ZEV fleet as it transitions.		Phase 1
DR-9.4	Pursue funding to purchase zero-emission trucks and shuttles through the Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP) and funding for EV charging infrastructure through SCP and CALeVIP's Sonoma Coast Inventive Project.		Ongoing
DR-9.5	Include signage on the Regional Parks' ZEVs to indicate they are electric or use renewable diesel and utilize the Regional Parks' ZEVs for demonstrations to the community (e.g., allow community members to tour the ZEVs during community events). Target climate-vulnerable communities and Tribal communities in demonstration campaigns that include distribution of readily available financial and technical resources.		Phase 2
DR-9.6	Coordinate efforts and purchasing power to buy ZEVs and install EV charging infrastructure. Identify and pilot new vehicle technology for difficult to replace vehicle types.		Phase 1
DR-9.7	Conduct a feasibility study to identify opportunities to use renewable natural gas (RNG) and renewable diesel as products of recovered organic waste in on-road and off-road vehicle fleets and buildings.		Phase 1

Measure DR-9: Vehicle Fleet – Exceed the Advanced Clean Fleet requirements and decarbonize 45% of the on-road vehicle fleet by 2030 and 100% by 2045.			
DR-9.8	Establish a No-Idling Policy by 2025 that requires all vehicles to be turned off when not in use or when the driver leaves the vehicle for any length of time (i.e., vehicles should not be left idling for more than 1 minute). Post signage at Regional Parks' buildings, construction sites, and other locations where vehicles (especially diesel-powered trucks) frequent to promote the No-Idling Policy.		Phase 1

 Structural Change  Partnerships  Feasibility  Funding  Education  Equity

Measure DR-10: Off-road Fleet – Decarbonize 20% of off-road equipment, including small off-road engines such as chainsaws, leaf blowers, and trimmers, to reduce off-road fossil fuel use by 2030 and 100% by 2045.			
Action Number	**Action**	**Pillar**	**Phase**
DR-10.1	Adopt a zero-emission equipment purchasing policy by 2026 for small off-road equipment to require purchase and replacement at the end of their useful life, of electric or zero-emission (e.g., renewable diesel or biodiesel use) in line with Assembly Bill 1346 and as available by current County purchasing ability and guidance. Regularly review and update the policy to include more types of equipment as electric and zero-emission options become available.		Phase 1
DR-10.2	Complete an inventory of all off-road equipment and develop a schedule for electric and zero-emission replacements to reduce off-road fossil fuel use by 20 percent by 2030 and 100 percent by 2045.		Phase 1
DR-10.3	Pursue funding to purchase electric and zero-emission off-road equipment through the Clean Off-Road Equipment Voucher Incentive Project (CORE) and Carl Moyer Program.		Ongoing
DR-10.4	Partner with other local agency fleets (e.g., Sonoma Water) to coordinate efforts and purchasing power to buy zero-emission equipment.		Phase 1
DR-10.5	Educate park staff and contractors on the benefits of using decarbonized off-road equipment, with an emphasis on improved worker health, noise reduction, and details on equipment maintenance best practices. Summarize information from the educational program in an infographic and post at parks and on the Regional Parks website to educate the community.		Phase 1
DR-10.6	Prioritize off-road equipment replacements for equipment used on land co-managed with Tribes and in vulnerable communities.		Ongoing

 Structural Change  Feasibility  Funding  Partnerships  Education  Equity

Measure DR-11: Employee Commute – Reduce employee commute VMT 25% by 2030 and 35% by 2045; and increase employee commute via ZEVs to 45% by 2030 and 100% by 2045.			
Action Number	**Action**	**Pillar**	**Phase**
DR-11.1	Develop a Transportation Demand Management (TDM) Program for Regional Parks staff by 2026 using results from the County's TDM pilot projects, to encourage and incentivize employees to reduce their vehicle miles traveled (VMT) in single-occupancy and fossil-fuel-powered vehicles. Include incentives to reward employees for biking, ridesharing, and using public transit to commute to work. The program could provide free public transit passes (i.e., Clipper BayPass), three hours of free EV charging, and free and subsidized access to electric bicycle programs in combination with employee parking fees. Educate staff on the Sonoma County Transit Authority Sonoma Emergency Ride Home Program for employees commuting without using a private vehicle, in case of emergency.		Phase 1
DR-11.2	Develop a remote work policy that encourages and educates those employees that are able and whose work allows them the ability to work from home one or two days a week and includes alternative work schedules where feasible.		Phase 1
DR-11.3	Install bike lockers, fix it stations, and showers at Regional Parks, where appropriate, to encourage employees to bike to work.		Phase 2
DR-11.4	Conduct an annual survey of employee commute patterns. Use the survey to update the TDM Program every 2-3 years based on survey results and newly available public transit and bike routes in the community; and to assess the benefits of moving Regional Parks' work/office locations to a more centralized location.		Ongoing
DR-11.5	Incorporate employee EV charging needs (based on increasing employee commute ZEVs to 45 percent by 2030 and 100 percent by 2045) into Measure DR-9's EV charging infrastructure study and plan.		Phase 1
DR-11.6	Provide employees free EV charging at work and provide employees who use personal vehicles for work rebates to purchase an EV.		Ongoing
DR-11.7	Align with County-wide strategies to promote and encourage employee participation in programs to reduce employee commute VMT. Explore opportunities to provide incentives to employees in partnership with the Regional Parks Foundation. Additionally, provide employees consolidated information on the benefits of owning EVs and information on available incentives and rebates to purchase EVs.		Ongoing

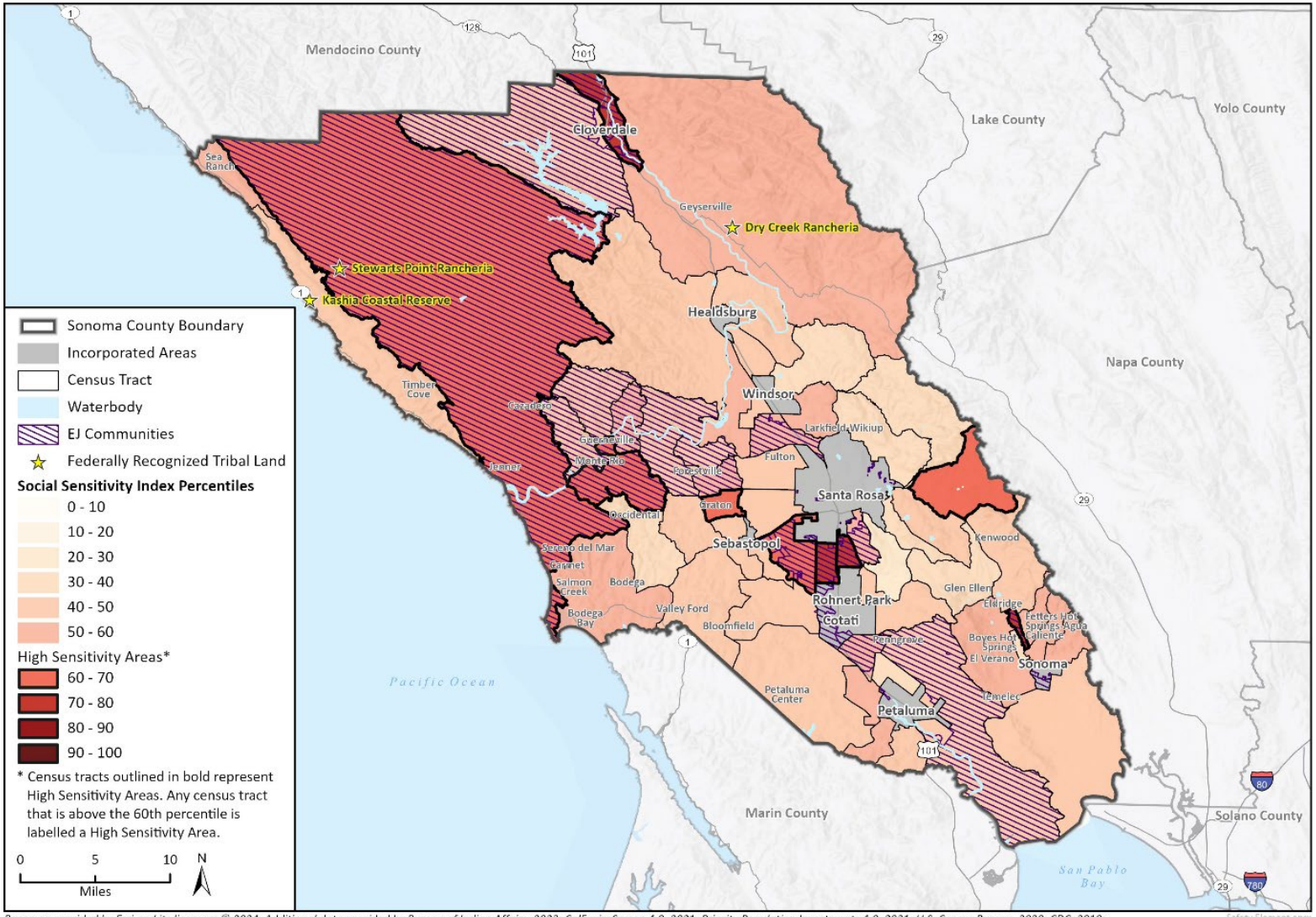
 Structural Change  Education  Partnerships  Feasibility  Funding  Equity

2.6 Sector 3 Community Resilience

Climate change will disproportionately harm vulnerable populations who have fewer resources to adapt. As part of the Sonoma County Climate Change Vulnerability Assessment, the County of Sonoma identified social sensitivity and Environmental Justice Communities in unincorporated Sonoma County by census tract (County of Sonoma 2024). These are census tracts most at risk from climate change. Figure 5 shows locations of social sensitivity and of Environmental Justice Communities in the County. Environmental Justice Communities are located throughout the County, with most located in west, central, and south County. All high social sensitivity census tracts overlap with Environmental Justice Communities, except for two census tracts: one directly east of Santa Rosa and another near Graton. Stewart's Point Rancheria, Kashia Coastal Reserve, and Dry Creek Rancheria are also considered to be EJ Tribal Communities in Sonoma County.

Various measures and actions in this sector focus on these climate vulnerable and Environmental Justice census tracts, pinpointing the communities most sensitive to climate change. Since Regional Parks are vital for community resilience in the Sonoma Region, it is crucial to continue to improve access for these vulnerable populations. The measures in this sector focus on increasing park attendance and access for members of vulnerable census tracts, adjusting park programming to include education on mitigation and resilience, and analyzing visitor GHG emissions and creating a plan for emissions reduction.

Figure 5 Populations Made Sensitive to Climate Change by Systems and Environmental Justice Communities in Sonoma County



Basemap provided by Esri and its licensors © 2024. Additional data provided by Bureau of Indian Affairs, 2023; CalEnviroScreen 4.0, 2021; Priority Population Investments 4.0, 2021; U.S. Census Bureau, 2020; CDC, 2010; American Community Survey (ACS) 2017-2021 5-year estimates, Table(s) B25070, B25091 & ACS, LEAD tool, 2018; Social Sensitivity Percentile Scores calculated by Rincon Consultants, Inc., 2022.

Safety Element.aprx
Fig X Social Sensitivity Analysis

Sector 3 Community Resilience

Measure CR-1: Park Access –By 2030, increase number of park visitors that live in census tracts considered to be climate vulnerable and Environmental Justice communities by 10%. and to 20% by 2045.			
Action Number	**Action**	**Pillar**	**Phase**
CR-1.1	Gain insights on visitor demographics through crowd-sourced data, to monitor whether park access actions are increasing the proportion of park visitors that live in census tracts that are considered to be climate vulnerable or Environmental Justice communities. Use this data to also track how people commute to the parks. Monitor census tract demographics on an annual basis, beginning in 2024.		Ongoing
CR-1.2	Increase Tribal access by launching a Tribal parks pass and extending eligibility to non-federally recognized Tribes by 2026 Develop an accessible Tribal parks pass application process to limit barriers for Tribal communities to sign-up. Engage with Tribal communities to spread awareness of Tribal parks pass. (*Strategic Plan Action*)		Phase 1
CR-1.3	Increase partnerships with County schools, particularly schools in areas with limited park access and have been underserved by parks.		
CR-1.4	Continue targeted engagement with partners to increase use of the Vehicle Entry Pass, which provides 12 months of free parking to Sonoma County residents with limited incomes.		Phase 1
CR-1.5	Coordinate with the existing County-led update to the County ADA Transition Plan and augment with additional information where necessary to assess ADA compliance and accessibility (e.g., mobility, sight, and sound), and kid-friendly facilities at parks. Map the features for inclusion in the Ag + Open Space Park Gap Analysis and Amenities Assessment and provide a public inventory of accessibility to inform visitors. Include an analysis of going beyond ADA compliance and enhancing the opportunities for people with access needs (e.g., providing all-terrain power wheelchairs, sand wheelchairs, mobility aids, wheelchair tracks for navigating uneven landscapes). Use the results of the audit to implement upgrades of park facilities to enhance park access.		Phase 1
CR-1.6	Provide materials and maps designed for people with access needs and offer free internet, where feasible, to facilitate the use of assisted technology so everyone can experience the benefits of parks equitably.		
CR-1.7	Evaluate the need to update policy eliminating the use of synthetic herbicides or insecticides on playing fields, plazas, playgrounds, picnic areas, and campgrounds. Evaluate the need to update signage in areas that have been sprayed to eradicate invasive species.		Ongoing
CR-1.8	Work with Tribal communities to develop a gathering policy for basket weavers and other forms of Tribal cultural practices to prevent pesticide exposure and protect the health and wellbeing of Tribal communities by 2028.		Phase 2

 Feasibility  Equity  Partnerships  Education  Structural Change

Measure CR-2: Park Programming – Adjust park programming to include educational opportunities on climate adaptation and mitigation at 15% of parks by 2034 and 50% of parks by 2045.			
Action Number	**Action**	**Pillar**	**Phase**
CR-2.1	Partner with cities, the Spring Lake Environmental Discovery Center, Sonoma Clean Power, Sonoma Water, and Tribes to develop and distribute climate adaptation and mitigation educational materials and resources (financial and technical) and maintain a bulletin board that is regularly updated to provide more short-term and time sensitive communication. Share wildfire resilience resources on parks land where vegetation management is occurring and planned.		Ongoing
CR-2.2	Partner with non-profits, community-based organizations (e.g., local farmers market, Sonoma County Community Garden Network, and School Garden Network), and Tribes to develop community gardens that practice Regenerative Neighborhood Development (modeled by Sweet Water Foundation) and showcase culturally relevant food production, native plants, pollinators, as well as drought tolerant, shade friendly, fire-resistant gardening practices, and defensible space. Locate these community gardens in parks serving vulnerable populations and in areas with access to water and electricity for gardeners and year-round access. Use community garden partners to demonstrate water conservation with water catchment and watershed protection. Support partners in holding community events such as cooking classes for foods and plants grown in the garden and use gardens as a location for distributing Regional Parks developed educational materials.		Ongoing
CR-2.3	Implement and annually update the Regional Parks Emergency Protocols to adjust park operations during extreme weather events such as high wind, bad air days, and extreme heat.		Ongoing
CR-2.4	Secure funding (e.g., from the Integrated Climate Adaptation and Resiliency Program (ICARP) Office of Planning and Research (OPR) Extreme Heat and Community Resilience Program) to adjust park programming and operations to sustain/maintain park access.		Phase 1
CR-2.5	Include assessments as needed, as part of the master planning process and ongoing engagement efforts, to understand if current park programming is meeting the needs of Sonoma County's diverse demographics, including Tribal communities and populations from climate vulnerable census tracts.		Phase 1
CR-2.6	In partnership with Tribal governments, citizens, and communities, establish Tribal engagement guidelines, or a set of principles and strategies, in alignment with County-wide Tribal engagement efforts as part of the General Plan update, to increase participation of Tribal members in Regional Parks decision-making processes related to CARP implementation. Key aspects of Tribal engagement guidelines will include the timely and interactive process to respectfully seek, discuss and consider Tribes' views in an effort to build trust over time and in a manner that respects and furthers the interest of Tribes and Regional Parks. Regional Parks will: • Complete surveys of Tribal communities to determine how they would like to be engaged regarding Regional Park projects and initiatives. • Support a multi-departmental Tribal Relationship Coordinator position to facilitate ongoing engagement with Tribes. • Establish meaningful dialogue early on in CARP action implementation so Tribes know how information from engagement affects implementation. • Establish guidelines to share information with Tribes while protecting their confidential information. • In partnership with Tribes, provide cultural competency training for Regional Parks employees on Tribal engagement.		Phase 1

Measure CR-2: Park Programming – Adjust park programming to include educational opportunities on climate adaptation and mitigation at 15% of parks by 2034 and 50% of parks by 2045.			
CR-2.7	Use the Tribal engagement guidelines (CR-2.6) to improve Tribal engagement during the master planning process.		Phase 1

 Education  Partnerships  Structural Change  Funding  Feasibility  Equity

Measure CR-3: Visitor Emissions – Analyze visitor GHG emissions and develop a plan to reduce emissions by 10% by 2030. and 30% by 2045.			
Action Number	**Action**	**Pillar**	**Phase**
CR-3.1	Implement and advertise results of a GHG emissions reduction tracking system such as surveys or crowd-sourced data platforms to monitor visitor vehicle miles traveled (VMT) and related GHG emissions.		Phase 1
CR-3.2	Evaluate the proximity of existing Sonoma County Transit and City bus routes and stops to Regional Parks. Work closely with Sonoma County Transit to modify routes and stops so they coincide with park locations and promote existing transit routes linking climate vulnerable census tracts to parks. Focus expanding public transit for parks serving populations from climate vulnerable census tracts and parks along the Russian River. Work with Sonoma Marin Area Rail Transit on access to the rail system (i.e., connection to the Santa Rosa North SMART Station).		Phase 1
CR-3.3	Grow the park's shuttle system to reduce visitor emissions, reduce congestion, and improve connectivity of parks with populations from climate vulnerable census tracts and Tribal communities. Consider public and private partnerships to expand the geography and usefulness of the shuttle system.		Ongoing
CR-3.4	Continue to partner with Metropolitan Transportation Commission, Sonoma County Transportation Authority, and other transportation partners to secure funding and support implementation of the Complete Streets Policy and Countywide Bicycle & Pedestrian Master Plan by expanding Class I bike paths and trails that increase access to parks and improve connectivity to parks through alternative modes of transportation (e.g., buses, trails, and bicycle paths). Prioritize connectivity that increases access for populations from climate vulnerable census tracts.		Ongoing
CR-3.5	Evaluate effectiveness of reducing parking availability and increasing parking pricing (permanently or during peak seasons for highly frequented parks) in parks that are well served by alternative transportation modes (e.g., shuttles, buses, trails, bicycle paths, or other forms of transit) to assist in shifting behavior in mode choice by visitors. Engage directly with populations from climate vulnerable census tracts during the study by discussing whether the existing Vehicle Entry Pass (for low-income households), Senior pass, Americans with Disabilities Act Pass, and Veteran Pass help to adequately avoid inequitable outcomes from unfair pricing.		Phase 2
CR-3.6	As part of new parks and park renovation projects, Identify parks that need new or improved bike parking areas, bike amenities, and pedestrian access. Focus improvements in parks serving populations from climate vulnerable census tracts.		Phase 1
CR-3.7	Provide signage at parks well served by alternative transportation modes (e.g., shuttles, buses, trails, bicycle paths, or other forms of transit) that educates visitors on the sustainable options for visiting parks.		Ongoing
CR-3.8	Partner with Sonoma Clean Power to pilot an electric bike program for use by Regional Parks staff and visitors.		Phase 2

 Structural Change  Feasibility  Partnerships  Funding  Equity  Education

3 Funding and Implementation

The Sonoma County Regional Parks CARP serves as a strategic roadmap for increasing resilience of Regional Parks while aiding the County of Sonoma in achieving its GHG emissions reduction targets. The CARP outlines implementable measures that align with state legislation and lay the groundwork for future carbon neutrality by 2045. Given that solid waste is the largest source of GHG emissions for Regional Parks, a cost-effectiveness analysis was conducted for select solid waste actions to prioritize actions and optimize resources. This section also includes implementation and monitoring considerations to guide successful implementation of the CARP.

3.1 Cost Effectiveness of Solid Waste Actions

While some of the CARP measures and actions are already budgeted for and, in some cases, underway, other actions will require additional resources for implementation. Given that solid waste was the largest source of GHG emissions for Regional Parks, accounting for 47 percent of total emissions in 2019, a cost-effectiveness analysis was conducted for waste management actions in the CARP. This analysis enables resource optimization, prioritization, and informed decision-making. Regional Parks specifically analyzed the cost-effectiveness of three key waste management actions listed below and included in Table 5:

- **Action DR -5.4** Through signage, art installations, and Regional Parks' community activities and events, educate community members on the impacts of waste, proper disposal methods for organic waste and reasons to avoid contamination. Include information on local composting efforts within parks.
- **Action DR-6.2** Partner with Zero Waste Sonoma to install more refillable water stations using CalRecycle grant funds.
- **Action DR-6.7** Partner with Zero Waste Sonoma and Recology to reduce solid waste sent to landfill by removing 25 percent of the trash receptacles offered, reducing trash pick-up truck trips by 25 percent, and generally improving waste-sorting. Increase CCNB contract amount to expand the number of parks with recycling and compost services.

Table 5 Cost Effectiveness of Key Waste Management Actions

Measures	Benefits to Quantify	$/ton Non-organic Waste	$/metric ton Additional Avoided GHG Emissions
DR-5.4	Diversion of organic waste to soil sequestration rather than to landfills	$1,121	$8
DR-6.2	Avoided disposable water bottle production and deliveries by truck	n/a	$260
DR-6.7	Reduced garbage truck trips	n/a	-$1,638*

*The negative dollar amount indicates a cost savings per metric ton of avoided GHG emissions.

The results of this analysis indicate the following:

- **Action DR-5.4** will divert more waste to compost waste streams, avoiding greenhouse gas emissions at a cost of approximately $8 per metric ton.
- **Action DR-6.2** will avoid greenhouse gas emissions at a cost of approximately $260 per metric ton through reduced use of disposable water bottles.
- Reducing truck trips per **Action DR-6.7** will save money because it will reduce truck operational costs, and avoided greenhouse gas emissions will be realized as a savings of approximately $1,638 per metric ton.

For a description of the methodology used to calculate the cost effectiveness of these actions, please refer to Appendix D.

3.2 Implementation and Monitoring

As technology advances and new state laws are enacted, Regional Parks will need to regularly monitor and update the measures and actions included in this CARP. This ongoing process will ensure that Regional Parks adapts to new developments and refines actions as needed.

Effective implementation of the CARP hinges on continuous progress monitoring and tracking over time. Successful execution requires collective involvement in this tracking process. To facilitate this, Regional Parks created Appendix E Implementation and Tracking Spreadsheet. Appendix E details each measure and action, along with implementation notes, success metrics, emissions reduction information, responsible staff and supporting county department, alignment with the Strategic Plan, information on climate vulnerable and Environmental Justice communities, and a mechanism for tracking target goals annually.

4 Conclusion

The Sonoma County Regional Parks CARP represents a comprehensive and forward-thinking approach to addressing climate change impacts within our parks. By implementing the outlined measures and actions and continuously monitoring progress, we can significantly reduce GHG emissions and enhance the resilience of our parks. Our parks serve as vital hubs of community resilience, providing essential green spaces that support the well-being and adaptability of our communities. Through collaborative efforts and strategic resource allocation, we can ensure that our parks remain vibrant and sustainable for future generations.

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