SECTION 1: EXECUTIVE SUMMARY

What's a Climate Action Plan?

A Climate Action Plan (CAP) is a tool that any organization can use to develop the programs and actions needed to reduce greenhouse gas emissions (GHGs), which are the pollutants that cause climate change. Generally these CAPs are focused on this *'mitigation'* aspect of climate change, but some also lay out a strategy for *'adaptation'*, or how the organization will plan to deal with the effects of climate change such as sea level rise, or increased flooding, heat waves, and wildfires. San Rafael's CAP is called the Climate Change Action Plan and mainly deals with mitigation.

Background

San Rafael has a rich history of climate action and environmental protection. Mayor Al Boro signed on to the Mayor's Climate Protection Agreement in 2006. The first Climate Change Action Plan was adopted in 2009. San Rafael received the first state-wide Beacon Award for Sustainability by the Institute for Local Government in 2013. Several hundred citizens volunteer on behalf of the environment each year, totaling thousands of hours of volunteer work worth hundreds of thousands of dollars in in-kind contributions. San Rafael has thousands of acres of open space and parks and is a Tree City USA community. These are just a few of the actions and programs San Rafael has undertaken over the years.

In 2017 the City Council identified updating the Climate Change Action Plan as a high priority in the annual Sustainability Priorities. A 20-member Green Ribbon Working Group was identified by Councilmember Kate Colin, the City Manager's Office, and the President of Sustainable San Rafael. This Working Group included people from various neighborhoods, businesses, high schools, and organizations in order to get a diverse set of voices and perspectives. Throughout the year they participated in a series of meetings with subject matter experts to develop measures for each section of the Plan. Throughout the summer of 2018, the City solicited input from a variety of community members through meetings, pop-up events at community gathering spots, online surveys, a business mixer, and in-person surveys at organizations and activities. This has all been synthesized into the following Plan.

There is broad scientific agreement that in order to stave off the worst effects of climate change, communities need to reduce their greenhouse gas emissions by 80% below 1990 levels by the year 2050. But time is of the essence. We are already seeing the effects of climate change locally and throughout the world with hotter temperatures, more severe storms, and more volatile and unpredictable weather. San Rafael has met the State GHG reduction target for 2020 and is on track to meet its more stringent local target by 2020. These emissions come from residents, businesses, and visitors, with only less than 1% coming from government operations and facilities. Recently, the State of California set interim reduction targets of 40% below 1990 levels by 2030 in order to stay on track. This updated Plan, coming from broad community input, sets out a road map to do just that. We're all in this together; we can do this.

[image: MSS, CMSA anaerobic digesters/Food to Energy]

What's Been Done So Far: San Rafael Actions

San Rafael businesses, agencies, and residents have been at the forefront of mitigation efforts such as renewable energy, low-carbon transportation, composting, and water conservation. In 2010 Marin Clean Energy was adopted by the City of San Rafael and most electricity users went immediately to purchasing 50% carbon-free electricity for their homes and businesses. San Rafael was one of the first communities to participate in curbside recycling thanks to Marin Sanitary Service's (MSS) forward-thinking owners. In 2014 MSS and Central Marin Sanitation Agency began converting food scraps into energy through their innovative Food to Energy project. By the end of the 2011-2017 drought, San Rafael water users reduced their water consumption by an average of approximately 17%. And in 2017, Marin Municipal Water District began purchasing 100% renewable Deep Green electricity from MCE Clean Energy, which reduced San Rafael resident and businesses' water-related greenhouse gas emissions dramatically.

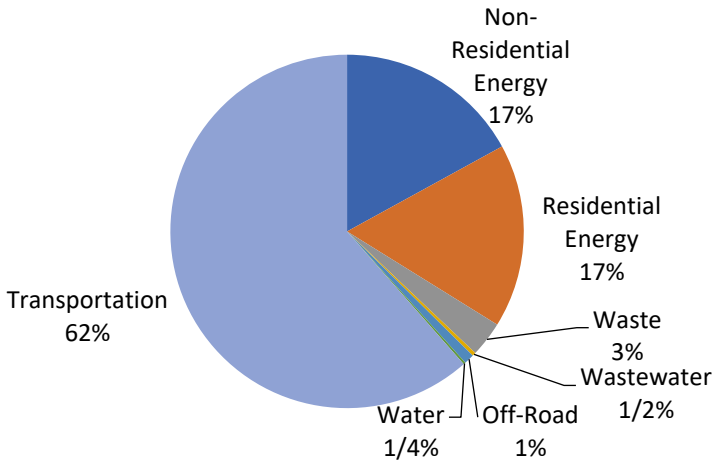
[image: San Rafael water conservation program group]

The City of San Rafael has implemented 48 of the 54 measures in the original Climate Change Action Plan, completing the majority of those that could be completed and moving most of the rest into an ongoing implementation status. Most measures will need to be continued in order to continue to get emissions reductions! *(see appendix __ for the complete list)*

Where We Are At: Emissions Trend and Status

The City prepares an annual community-wide greenhouse gas inventory to track emissions in seven sectors: residential energy, commercial energy, transportation, off-road vehicles and equipment, waste, water and wastewater. As shown in Figure 1, the majority of emissions come from vehicle trips generated by San Rafael residents and businesses. Community emissions totaled 475,790 metric tons of carbon dioxide equivalents ($MTCO_2e$) in 2005, the State's baseline year. By 2016, emissions had dropped to 389,260 $MTCO_2e$, an 18% reduction. This is well below the State target for San Rafael, which is 15% below baseline emissions by 2020, and the trendline shows that emissions are on track to meet the City's local reduction target of 25% by 2020. While emissions declined in almost all sectors, the largest reductions were due to energy conservation and efficiency, a reduction in the carbon intensity of electricity, and improvements to vehicle fuel efficiency. Emissions from City operations, which make up less than 1% of community-wide emissions, fell 20% by 2015. For more details, see the City's latest Greenhouse Gas Emissions Inventory *(see appendix __)*.

Figure 1: community EMISSIONS by sector, 2016

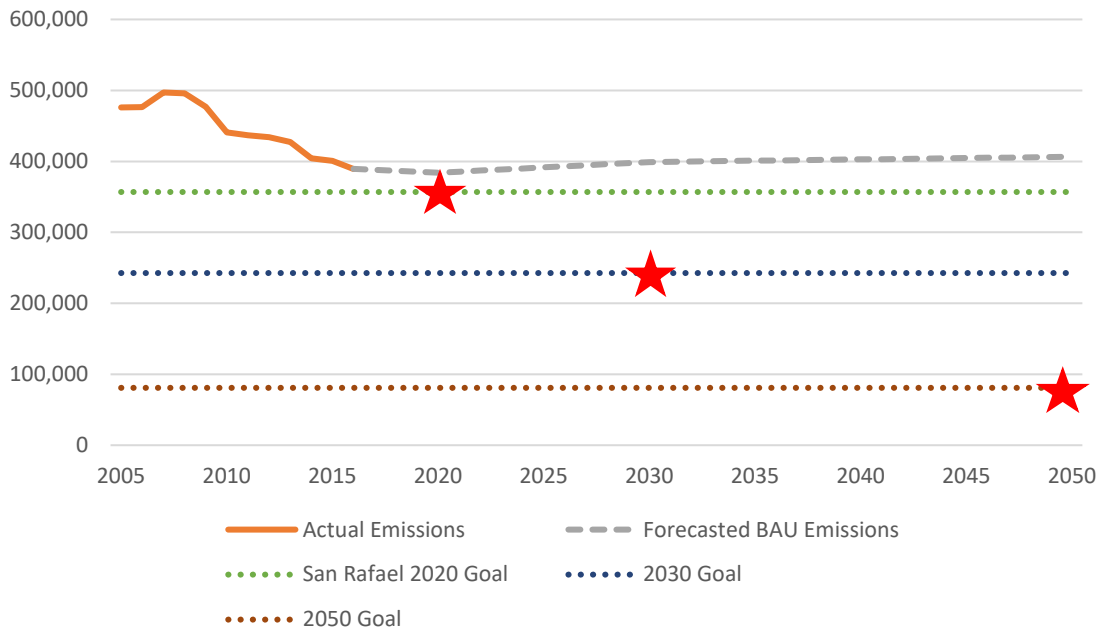


Emissions Forecast and Reduction Targets

The Climate Change Action Plan includes a "business-as-usual" (BAU) forecast in which emissions are projected in the absence of any policies or actions that would occur beyond the base year to reduce emissions. The forecasts are derived by "growing" (increasing) 2016 emissions using forecasted changes in population, number of households, and jobs according to projections developed by the Association of Bay Area Governments. Transportation emissions are projected utilizing data provided by the Metropolitan Transportation Commission, which incorporate the vehicle miles traveled (VMT) reductions expected from the implementation of the Regional Transportation Plan adopted in 2017. Emissions are expected to rise about 3 percent by 2030 and 4% by 2040. Although the regional agencies have not made official projections for 2050, continuing the trendline suggests emissions would reach approximately 406,500 $MTCO_2e$ by 2050 under the BAU forecast.

The Climate Change Action Plan establishes targets similar to the State's goals to reduce emissions to 40% below 1990 levels by 2030 and 80% below 1990 levels by 2050. In San Rafael, that means emissions would need to drop to 242,650 $MTCO_2e$ by 2030 and 80,880 $MTCO_2e$ by 2050. The Plan lays out measures that will meet the 2040 target and put the City on a trajectory to meet the 2050 goal. The community emissions trend, forecast and targets are shown in Figure 2 below.

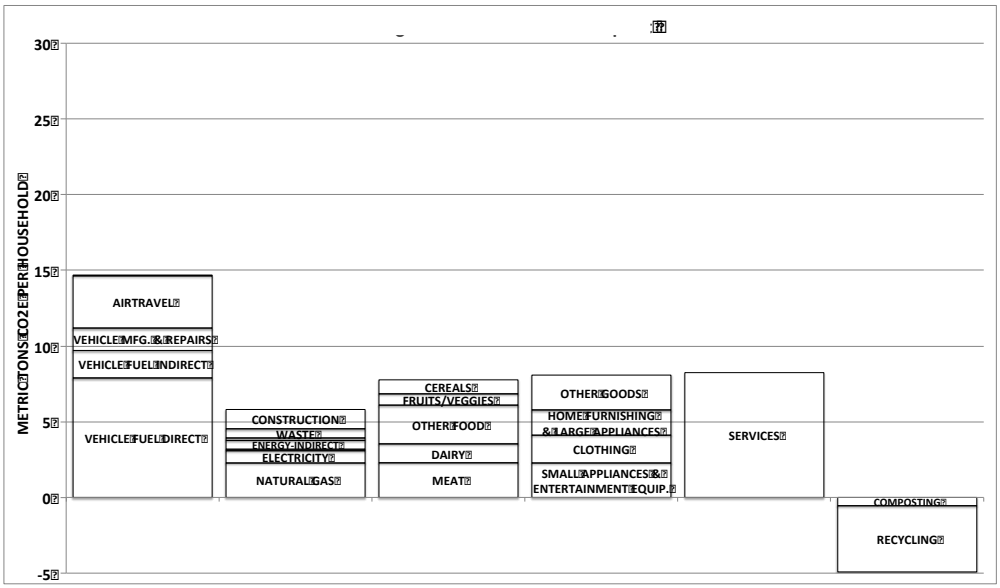
FIGURE 2: EMISSIONS TREND, FORECAST AND TARGETS



Our Carbon Footprint

The Bay Area Air Quality Management District (BAAQMD) and U.C. Berkeley developed a Consumption-Based Inventory to better understand how our purchasing habits contribute to global climate change. A consumption-based inventory includes emission sources that don't get counted in the typical "in-boundary" GHG inventory, as well as other items that are difficult to quantify like airplane travel and upstream emissions from the production, transport and distribution of food and household goods. Figure 3 shows the results of the consumption-based inventory for San Rafael households. According to this inventory, the average San Rafael household generates 44 $MTCO_2e$ per year. As a comparison, the City's community-wide emissions of 389,260 $MTCO_2e$ works out to about 17 $MTCO_2e$ per household. In essence, our consumption drives climate change more than anything and although San Rafael is meeting its state targets for strict "in-boundary" emissions reductions, we as a community have a long way to go. For more information on this and to see carbon footprints by census tract, visit the SF Bay Area Carbon Footprint Map. To learn how to measure and reduce your household carbon footprint, check out our local Resilient Neighborhoods program.

FIGURE 3: AVERAGE SAN RAFAEL HOUSEHOLD CARBON FOOTPRINT



This graph shows the relative impact of all the sources of emissions that make up a household carbon footprint. *Source: CoolClimate Network*

State Pillars & DRAWDOWN: Marin

San Rafael doesn't exist in a vacuum. While we are leveraging or trying to combat regional, state-wide, national and even international actions and trends, we also have the ability and responsibility to collaborate with other efforts and campaigns. San Rafael is known for collaborating and it's our collective imagination and cooperative efforts that make San Rafael such a successful and wonderful place to be. If you've ever been to a San Rafael City Council meeting or Climate Change Action Plan quarterly forum you will know this first-hand.

The State of California established the Six Pillars framework in 2015 when Governor Jerry Brown was inaugurated for his second term as governor. These include (1) reducing today's petroleum use in cars and trucks by up to 50 percent; (2) increasing from one-third to 50 percent our electricity derived from renewable sources; (3) doubling the energy efficiency savings achieved at existing buildings and making heating fuels cleaner; (4) reducing the release of methane, black carbon, and other short-lived climate pollutants; (5) managing farm and rangelands, forests and wetlands so they can store carbon; and (6) periodically updating the state's climate adaptation strategy: Safeguarding California.

[image: 6 Pillars]

The County of Marin, noting the need for all residents and businesses to actively reduce emissions and plan for climate adaptation has created an engagement framework based on the research and book by local author, entrepreneur, and environmentalist Paul Hawken called DRAWDOWN: Marin. DRAWDOWN: Marin is a comprehensive, science-based, community-wide campaign to do our part to slow the impacts of climate change. It is an effort to recognize our need to reduce our "carbon footprint" and to provide a road map to doing so. Similar to the State's Six Pillars, there are six areas of focus: (1) 100% Renewable Energy, (2) Low-Carbon Transportation, (3) Energy Efficiency in Buildings and Infrastructure, (4) Local Food and Food Waste, (5) Carbon Sequestration, and (6) Climate Resilient Communities.

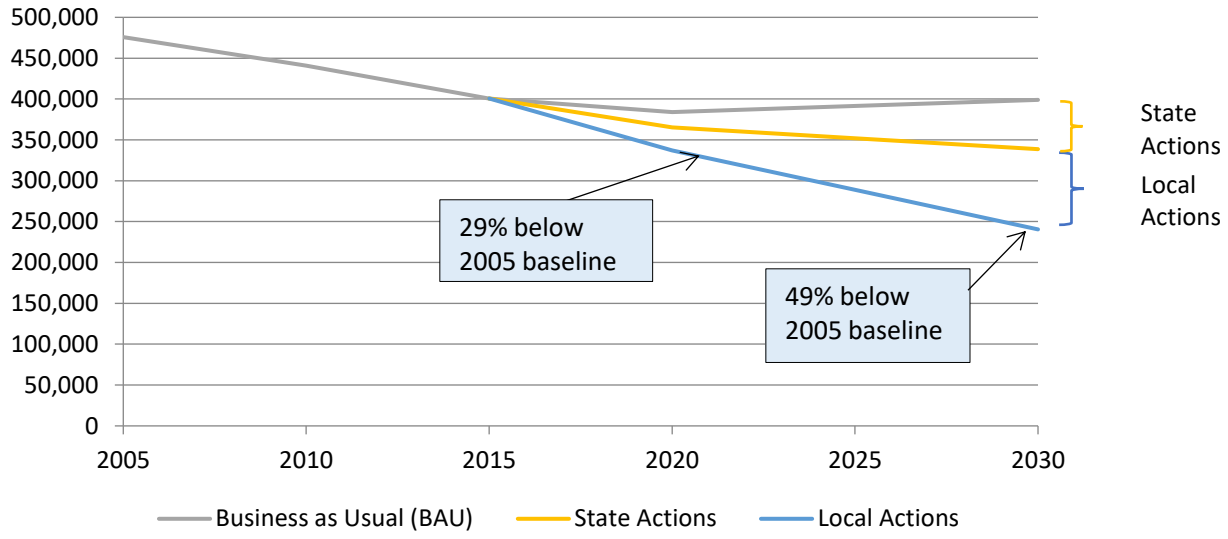
[Image: DRAWDOWN event]

Actions to Reduce Greenhouse Gas Emissions

The Climate Change Action Plan includes a variety of regulatory, incentive-based and voluntary strategies that are expected to reduce emissions from both existing and new development in San Rafael. Several of the strategies build on existing programs while others provide new opportunities to address climate change. State actions will have a substantial impact on future emissions. Local strategies will supplement these State actions and achieve additional GHG emissions reductions. Successful implementation will rely on the combined participation of City staff along with San Rafael residents, businesses and community leaders.

The following sections identify the State and local strategies included in the Climate Change Action Plan to reduce emissions in community and government operations. Emissions reductions are estimated for each strategy; combined, they show that the City should reduce emissions 29% below baseline emissions in 2020 and 49 % by 2030, which is enough to surpass the City and State goals for those years. As shown in Figure 4, State actions represent about 40% of the reduction expected through implementation of the Climate Change Action Plan while local actions represent about 60%.

FIGURE 4: CUMULATIVE IMPACT OF REDUCTION STRATEGIES



Summary of State Actions

The Climate Change Action Plan incorporates State reduction strategies that have been approved, programmed and/or adopted and will reduce local community emissions from 2016 levels. These programs require no local actions. As such, the State actions are first quantified and deducted from projected community emissions in order to provide a better picture of what still needs to be reduced at the local level to get to the overall reduction targets. State actions and emissions reductions are shown in Table 1 and detailed in the appendix.

TABLE 1: EMISSIONS REDUCTIONS FROM STATE ACTIONS

State Action	Emissions Reductions by 2030 (MTO_2e)
Light and Heavy-Duty Vehicle Regulations	56,700
Title 24 Energy Efficiency Standards	2,670
Lighting Efficiency	950
Renewable Energy Portfolio Standard	80
Residential Solar Water Heaters	30
Total	**60,430**

Summary of Local Strategies

The local mitigation measures presented in the following sections, and as summarized in Table 2 below, achieve greenhouse gas emissions reductions in the community of approximately 27,740 $MTCO_2e$ in 2020 and 97,145 $MTCO_2e$ in 2030.

TABLE 2: LOCAL EMISSIONS REDUCTION STRATEGIES

Strategy	GHG Reductions by 2030 ($MTCO_2e$)	Percent of Reductions
Low Carbon Transportation	37,200	38%
Energy Efficiency	17,865	18%
Renewable Energy	31,230	32%
Waste Reduction	10,025	10%
Water Conservation	830	1%
Sequestration and Adaptation	n/a	n/a
Community Engagement	n/a	n/a
Implementation and Monitoring	n/a	n/a
Total	**97,145**	**100%**

These local strategies will be detailed in the following sections. Together, the projected reductions from State and local actions total 157,570 $MTCO_2e$ by 2030, which meets the 40% reductions target set by the State.

SECTION 2: MEASURES

Local Measures to Reduce Greenhouse Gas Emissions

Each of the following sections provide a summary table of local measures and associated GHG reductions, followed by a description of the specific actions the City will undertake to implement each measure. The methodologies and implementation targets used to calculate emissions reductions are described in the appendix. Sometimes, there is no direct or reliable way to estimate GHG savings for a particular measure or the savings are embedded in another measure. In this case, the GHG reduction is identified as "not applicable" or "n/a." For example: Community Engagement is essential for success in many of the measures set forth throughout the Plan, but counting savings in this section would then be double-counting savings from other measures such as those in Low Carbon Transportation or Energy. People need to know about a program to take advantage of it, but the actual emissions reductions will come from participating in the program itself. Therefore, the savings is counted for that program.

Economy and Social Equity

Cities deal with a wide array of issues and pressures and must take all these issues into account when budgeting resources and balancing priorities. Housing, business retention, health and safety, and traffic congestion are some examples. Climate action can address these problems or make them worse, depending on how they are approached. A major theme in the Working Group deliberations and community feedback was around unintended consequences and making sure that measures and programs benefitted the most, not just a few. Sustainability has been described as a three-legged stool, pointing to the need to address not just the environment, but the economy and social equity as well.

One definition of social equity is the "just and fair inclusion into a society in which all can participate, prosper, and reach their full potential" (PolicyLink). Equity is the means to ensure equality for all. An example of how that might work with climate action measures is with energy efficiency. Giving rebates to homeowners to swap out inefficient appliances helps reduce energy consumption and therefore greenhouse gas emissions. But if rebates are only available to those with means to purchase new appliances it leaves out a section of the community without means. However, a program such as the Green and Healthy Homes Initiative acknowledges this and works with landlords to upgrade common areas of apartment complexes with the commitment to provide free appliance and building envelope upgrades to renters so that there is a double benefit. First, the property owner can see energy reductions, and second the renter can not only see energy reductions but can also enjoy a healthier home environment, often by increasing comfort, decreasing health hazards such as mold, and providing more reliable appliances.

The economy is the driver of prosperity and equity in a city and provides the revenue necessary for local government to enact programs that are beneficial to the whole community. Half of our community-wide emissions come from the business and commercial sector. But increased regulation can have the unintended consequence of driving up costs, deterring innovation and job growth, and stagnating

business development. However, many measures related to climate action can also have significant return on investment and end up being great business prospects. There is a delicate balance between mandating, incentivizing, and enabling businesses to reduce greenhouse emissions. On the flip side, there is great potential to work together to ensure a robust low-carbon economy that creates good jobs and benefits the whole community. California as a whole is a great example: State emissions have declined 9% since 2006, while the economy has grown 16%.

Throughout the following measures, care was taken to avoid unintended consequences for our lower-income or disadvantaged community members, as well as our business sector, and to enhance the opportunity for equity and prosperity. Great care must be taken to consider and include our diverse community members and business interests in the development and implementation of the measures.

LOW CARBON TRANSPORTATION

38% of potential reductions

More than 60% of San Rafael's community emissions comes from transportation, and up until the recent commercial success of electric vehicles, it's been hard to see how we were going to reduce transportation emissions. Sure, improvements in fuel efficiency have driven emissions down – the passenger vehicle fleet in Marin County is about 17% more fuel efficient than it was ten years ago – but vehicle miles traveled by passenger vehicle trips starting and/or ending in San Rafael have actually gone up about 2% over the same period. Surveys show that alternative transportation rates have hardly budged over the years, despite improvements in the bicycle and pedestrian network and public information campaigns to get people to carpool, bicycle, walk and take transit.

All of that is now changing with the viability of zero emission vehicles (ZEVs), especially here in San Rafael where electricity is pretty clean and expected to get cleaner. ZEVs include all-battery as well as plug-in hybrid vehicles. Marin County is a leader in ZEV adoption rates – second only to Santa Clara County – and ZEVs already comprise about 2% of all registered passenger vehicles in Marin. Our plan is to increase that rate to 25% by 2030 by building out the EV charging infrastructure and encouraging ZEV ownership through incentives, public education, and development requirements. This is an aggressive target, but one that complements the State's goal to put 5 million ZEVs on the road by 2030. Improvements in battery and charging technology, expected cost reductions, and automakers' commitments to significantly expand ZEV offerings point to an all-electric future. Of course, new cars are typically out of the reach of low-income household budgets, but programs that incentivize used EV car purchases and installation of EV chargers in lower-income neighborhoods can help ensure the benefits of EV ownership are shared by all. That said, we can't rely on ZEV's alone to meet our transportation reductions; reducing congestion, enabling better biking and walking opportunities, and incentivizing public transit all carry co-benefits and can be enjoyed by all.

What You Can Do

#1 Drive an all-electric or plug-in hybrid vehicle.

#2 Bike, walk or take transit whenever possible.

#3 Shut your car off when waiting in line at the ATM or school pick up/drop off lane.

#4 Better yet, have your child walk or bike to school.

#5 Use an electric leaf blower and lawn mower.

TABLE 3: LOW CARBON TRANSPORTATION MEASURES TO REDUCE COMMUNITY EMISSIONS

ID	Measure	GHG Reduction by 2030 ($MTCO_2e$)	Share of Reductions
LCT-C1	Electric Vehicles	30,600	83%
LCT-C2	Bicycling	1,910	5%
LCT-C3	Walking	580	2%

LCT-C4	Safe Routes to School	320	1%
LCT-C5	Public Transit	1,035	3%
LCT-C6	Employee Trip Reduction	1,030	3%
LCT-C7	Vehicle Idling	1,075	3%
LCT-C8	Parking Standards	55	<1%
LCT-C9	Smart Growth Development	n/a*	n/a
LCT-C10	Electric Leaf Blowers	110	<1%
TOTAL		36,715	100%

**Emissions reductions due to smart growth development are embedded in vehicle miles traveled projections utilized in the development of the emissions forecast. In order to avoid double-counting, they are not included here.*

LCT-C1: Electric Vehicles

Develop an Electric Vehicle Plan that will result in 25% of registered passenger vehicles in San Rafael to be electric vehicles by 2030. Consider incorporating the following actions in the plan:

- Provide free parking for electric vehicles at City parking lots and metered parking spaces.
- Provide wayfinding signage to public EV chargers.
- Work with PG&E and other entities to identify multi-family and workplace charging sites appropriate for available incentive programs, such as EV Charge Network.
- Participate in a countywide effort by MCE, PG&E and others to provide rebates for new or used electric vehicles and/or charging stations.
- Pursue opportunities to expand the City's EV charging network through innovative programs, such as installing chargers at existing streetlight locations.
- Require new and remodeled commercial and multi-family projects to install a minimum number of electric vehicle chargers for use by employees, customers, and residents.
- Require new and remodeled single-family projects to install electrical service and conduits for potential electric vehicle use.
- Require new and remodeled gas stations to provide EV fast chargers.
- Participate in regional efforts and grant programs to encourage widespread availability of charging stations.
- Target policies to support ZEV adoption, including used vehicles, in low income and disadvantaged communities.
- Participate in programs to promote EV adoption, including "Drive an EV" events and other media and outreach campaigns.
- Encourage or require, as practicable, ride hailing and delivery service companies to utilize low emission and electric vehicles.
- Promote adoption of electric bicycles.

LCT-C2: Bicycling

Encourage bicycling as an alternative to vehicular travel. Establish and maintain a system of bicycle facilities that are consistent with the City's Bicycle and Pedestrian Plan and Complete Streets policies.

- Provide bicycle racks and lockers for public use.

- Participate in a bike share program.

LCT-C3: Walking
Encourage walking as an alternative to vehicular travel. Establish and maintain a system of pedestrian facilities that are consistent with the City's Bicycle and Pedestrian Master Plan and Complete Streets policies.

LCT-C4: Safe Routes to School
Continue to support the Safe Routes to School Program and strive to increase bicycling, walking, carpooling, and taking public transit to school. Promote school participation, identify issues associated with unsafe bicycle and pedestrian facilities between neighborhoods and schools, apply for Safe Routes to School grants, and execute plans to improve pedestrian and bicycle facilities.

LCT-C5: Public Transit
Support and promote public transit by taking the following actions:

- Work with Marin Transit and Golden Gate Transit to maximize ridership through expansion and/or improvement of transit routes and schedules.
- Work with SMART, TAM, employers and others to provide first and last mile programs to maximize utilization of the train, including shuttle buses.
- Support a "Yellow School Bus" program and student use of regular transit to reduce school traffic.
- Encourage transit providers, including school buses, to use renewable diesel as a transition fuel and to purchase electric buses whenever replacing existing buses.

LCT-C6: Employee Trip Reduction
Reduce vehicle miles traveled commuting to work through the following actions:

- Work with the Transportation Authority of Marin and the Bay Area Air Quality Management District (BAAQMD) to promote transportation demand programs to local employers, including rideshare matching programs, vanpool incentive programs, emergency ride home programs, telecommuting, transit use discounts and subsidies, and other incentives to use transportation other than single occupant vehicles.
- Update the City's Trip Reduction Ordinance to reflect the most recent BAAQMD regulations and to increase the number of employers subject to the ordinance.
- Embark on an outreach and educational campaign to encourage employees to reduce vehicle trips.

LCT-C7: Parking Standards
Allow new development in the Downtown area to reduce minimum parking requirements by 20 percent from current levels. Elsewhere, reduce parking requirements based on robust transportation demand programs and proximity and frequency of transit services.

LCT-C8: Vehicle Idling

- Implement signal synchronization and intelligent traffic management systems to improve traffic flow.
- Encourage drivers and autonomous vehicles to limit vehicle idling.
- Consider adopting an ordinance to regulate idling beyond State requirements.

LCT-C9: Smart Growth Development
Prioritize infill, higher density, transit-oriented, and mixed-use development.

LCT-C10: Electric Landscape Equipment. Encourage the use of electric landscape equipment instead of gasoline-powered equipment.

TABLE 4: LOW CARBON TRANSPORTATION MEASURES TO REDUCE GOVERNMENT OPERATIONS EMISSIONS

ID	Measure	GHG Reduction by 2030 ($MTCO_2e$)	Share of Reductions
LCT-M1	Low Emission City Vehicles	235	49%
LCT-M2	Low Carbon Fuels	220	45%
LCT-M3	City Employee Commute	20	5%
LCT-M4	Electric Leaf Blowers	5	1%
TOTAL		480	100%

LCT-M1: Low Emission City Vehicles
Purchase or lease zero-emissions vehicles for the City fleet whenever feasible, and when not, the most fuel-efficient models available. Promote City adoption and procurement of zero-emission vehicles and charging infrastructure to the public.

LCT-M2: Low Carbon Fuels
Use low-carbon fuel such as renewable diesel as a transition fuel in the City's fleet, and encourage the City's service providers to do the same, until vehicles are replaced with zero-emissions vehicles.

LCT-M3: City Employee Commute
Provide City employees with incentives and/or reduce barriers to use alternatives to single occupant auto commuting, such as transit use discounts and subsidies, bicycle facilities, ridesharing services, flexible schedules, and telecommuting when practicable.

LCT-M4: Electric Leaf Blowers
Replace gas-powered leaf blowers with electric models.

ENERGY EFFICIENCY

18% of potential reductions

Increasing the efficiency of buildings is often the most cost-effective approach for reducing greenhouse gas emissions. Energy efficiency upgrades, such as adding insulation and sealing heating ducts, have demonstrated energy savings of up to 20 percent, while more aggressive "whole house" retrofits can result in even greater energy savings. Many "low-hanging fruit" improvements can be made inexpensively and without remodeling yet can be extremely cost-efficient, such as swapping out incandescent bulbs to LED bulbs, sealing air leaks, and installing a programmable thermostat. Energy Star-certified appliances and office equipment, high-efficiency heating and air conditioning systems, and high-efficiency windows not only save energy but reduce operating costs in the long run. Nonetheless, some upgrades can be expensive, particularly for low-income households, so the City participates in programs that provide rebates, free energy audits, and financing options for residents and businesses.

New construction techniques and building materials, known collectively as "green building," can significantly reduce the use of resources and energy in homes and commercial buildings. Green construction methods can be integrated into buildings at any stage, from design and construction to renovation and deconstruction. The State of California requires green building energy-efficiency through the Title 24 Building codes. The State updates these codes approximately every three years, with increasing energy efficiency requirements since 2001. The State's energy efficiency goals are to have all new residential construction to be zero net electricity by 2020 and all new residential and commercial construction to be zero net energy by 2030. Local governments can accelerate this target by adopting energy efficiency standards for new construction and remodels that exceed existing State mandates, or by providing incentives, technical assistance, and streamlined permit processes to enable quicker adoption.

What You Can Do

#1 Replace indoor and outdoor lights with LED bulbs, and turn them off when not in use.

#2 Have an energy assessment done for your home or business.

#3 Upgrade insulation, seal leaks, and install a programmable thermostat.

#4 Purchase Energy Star appliances and equipment.

#5 Unplug electronic appliances when not in use and set the thermostat to use less heat and air conditioning.

TABLE 5: ENERGY EFFICIENCY MEASURES TO REDUCE COMMUNITY EMISSIONS

ID	Measure	GHG Reduction by 2030 ($MTCO_2e$)	Share of Reductions
EE-C1	Energy Efficiency Programs	17,150	97%
EE-C2	Energy Audits	260	1.5%
EE-C3	Cool Pavement and Roofs	265	1.5%
EE-C4	Green Building Reach Code	n/a*	n/a
TOTAL		17,680	100%

**Emissions reductions due to a green building reach code are ultimately eclipsed by the State's Title 24 zero net energy goals by 2030. In order to avoid double counting, they are not included here.*

EE-C1: Energy Efficiency Programs

Promote and expand participation in residential and commercial energy efficiency programs.

- Work with organizations and agencies such as the Marin Energy Watch Partnership, the Bay Area Regional Network, Resilient Neighborhoods, and the Marin Climate & Energy Partnership to promote and implement energy efficiency programs and actions.
- Continue and expand participation in energy efficiency programs such as Energy Upgrade California, California Energy Youth Services, and Smart Lights.
- Promote utility, state, and federal rebate and incentive programs.
- Participate and promote financing and loan programs for residential and non-residential projects such as Property Assessed Clean Energy (PACE) programs, PG&E on-bill repayment, and California Hub for Energy Efficiency Financing (CHEEF) programs.

EE-C2: Energy Audits

Consider requiring energy audits for residential and commercial buildings prior to completion of sale, including identification of cost savings from energy efficiency measures and potential rebates and financing options.

EE-C3: Cool Pavement and Roofs

Use high albedo material for roadways, parking lots, sidewalks and roofs to reduce the urban heat island effect and save energy.

- Evaluate the use of high albedo pavements when resurfacing City streets or re-roofing City facilities.
- Encourage new development to use high albedo material for driveways, parking lots, walkways, patios, and roofing.

EE-C4: Green Building Reach Code

Consider adopting a green building ordinance for new and remodeled commercial and residential projects that requires green building methods and energy efficiency savings above the State building and energy codes. Consider utilizing the County's green building ordinance as a model and including the use of photovoltaic systems and all-electric building systems as options to achieve compliance.

TABLE 6: ENERGY EFFICIENCY MEASURES TO REDUCE GOVERNMENT OPERATIONS EMISSIONS

ID	Measure	GHG Reduction by 2030 ($MTCO_2e$)	Share of Reductions
EE-M1	Streetlights	110	58%
EE-M2	Energy Efficiency Audit and Retrofits	45	23%
EE-M3	Energy Conservation	35	19%
TOTAL		185	100%

EE-M1: Streetlights
Complete replacement of inefficient street, parking lot and other outdoor lighting with LED fixtures.

EE-M2: Energy Efficiency Audit and Retrofits
Work with the Marin Energy Management Team to identify and implement energy efficiency projects in municipal buildings and facilities and electrification of existing building systems and equipment that use natural gas.

EE-M3: Energy Conservation
Reduce energy consumption through behavioral and operational changes.

- Establish energy efficiency protocols for building custodial and cleaning services and other employees, including efficient use of facilities, such as turning off lights and computers, thermostat use, etc.
- Incorporate energy management software, electricity monitors, or other methods to monitor energy use in municipal buildings.
- Investigate 9/80 work schedule for City facilities where feasible and where facilities can be shut down entirely.

RENEWABLE ENERGY

32% of potential reductions

Energy that comes from renewable sources, including solar, wind, geothermal, and small hydroelectric, are the cleanest and most-environmentally friendly energy sources. Here in San Rafael, where there is an abundance of sunny days, solar energy is a particularly good energy source. According to Project Sunroof, 94% of San Rafael buildings have roofs that are solar-viable. These 14,700 roofs could generate over 470 million kWh per year, which is more than the total electricity usage in San Rafael in 2016. Solar system costs keep falling, too, which make them an attractive option for home and commercial building owners. Our Climate Change Action Plan projects that we can get about 24% of our electricity from locally produced solar energy systems by 2030, up from about 4% currently, just by maintaining the current growth rate.

When solar is not an option, due perhaps to a shady roof or a reluctant landlord, residents and business owners can purchase 100% renewable electricity from MCE Clean Energy and PG&E. MCE and PG&E electricity have a high percentage of renewable and GHG-free content, which means it's some of the cleanest electricity in the country. What's more, MCE's goal is provide 100% renewable and GHG-free electricity to all its customers by 2025. Considering that MCE currently carries about two-thirds of the total electricity load in San Rafael, that action alone will significantly reduce emissions.

Since our electricity is so clean, and getting cleaner, it's a great idea to swap out appliances and heating and cooling systems that use natural gas for ones that use electricity. If you're constructing a new home or building, consider going all-electric. Battery prices are falling, and will soon be a cost-effective option, too. Eventually, we'll need to replace the majority of natural gas appliance and equipment if we're going to hit our long-term goals. Fortunately, ongoing research and development of energy storage systems are creating new business opportunities and making an all-electric, 100% renewable future possible.

What You Can Do

#1 Switch to MCE Deep Green or PG&E Solar Choice 100% renewable electricity option.

#2 Install a solar energy system on your home or business.

#3 Replace appliances that use natural gas for ones that use electricity.

#4 Investigate electric hot water heaters and heat pumps so you can swap out heaters and furnaces that use natural gas when it's time to replace them.

TABLE 7: RENEWABLE ENERGY MEASURES TO REDUCE COMMUNITY EMISSIONS

ID	Measure	GHG Reduction by 2030 ($MTCO_2e$)	Share of Reductions
RE-C1	Renewable Energy Generation	10,605	34%

RE-C2	GHG-Free Electricity	19,255	63%
RE-C3	Building and Appliance Electrification	870	3%
RE-C4	Innovative Technologies	n/a	n/a
TOTAL		30,725	100%

RE-C1: Renewable Energy Generation
Encourage residential and commercial solar and other renewable energy installations.

- Provide permit streamlining and reduce or eliminate fees, as feasible.
- Amend building codes, development codes, design guidelines, and zoning ordinances, as necessary, to facilitate small, medium, and large-scale installations.
- Encourage installation of solar panels on carports and over parking areas on commercial projects and large-scale residential developments.
- Participate and promote financing and loan programs for residential and non-residential projects such as Property Assessed Clean Energy (PACE) programs and California Hub for Energy Efficiency Financing (CHEEF) programs.
- Encourage installation of battery storage in conjunction with renewable energy generation projects.

RE-C2: GHG-Free Electricity
Encourage residents and businesses to switch to 100 percent renewable electricity (MCE Deep Green, MCE Local Sol, and PG&E Solar Choice) and work with MCE Clean Energy to assure that it reaches its goal to provide electricity that is 100 percent GHG-free by 2025.

RE-C3: Building and Appliance Electrification
Promote electrification of building systems and appliances that currently use natural gas, including heating systems, hot water heaters, stoves, and clothes dryers.

RE-C4: Innovative Technologies
Investigate and pursue innovative technologies such as micro-grids, battery storage, and demand-response programs that will improve the electric grid's resiliency and help to balance demand and renewable energy production.

TABLE 8: RENEWABLE ENERGY MEASURES TO REDUCE GOVERNMENT OPERATIONS EMISSIONS

ID	Measure	GHG Reduction by 2030 ($MTCO_2e$)	Share of Reductions
RE-M1	Solar Energy Systems	140	28%
RE-M2	Deep Green Electricity	360	72%
TOTAL		500	100%

RE-M1: Solar Energy Systems for Municipal Buildings
Install solar energy systems at municipal buildings and facilities and investigate and pursue innovative technologies such as battery storage and demand response programs.

RE-M2: Municipal Deep Green Electricity

Continue to purchase MCE Deep Green electricity for all City facilities.

WASTE REDUCTION

10% of potential reductions

The things we buy, consume, and throw away generate a lot of greenhouse gas emissions during manufacturing, transport, distribution and disposal. The best way to reduce emissions is to purchase and consume less stuff in the first place, and then find someone who can reuse whatever you no longer need before considering recycling or disposal.

Due to the way we account for community emissions, our Climate Change Action Plan does not take credit for reducing upstream emissions. Instead, our GHG accounting is directly concerned with emissions that are created from the anaerobic decomposition of organic waste in the landfill. The decomposition process creates methane, which is 28 time more potent as a greenhouse gas than carbon dioxide. Although landfills capture most of the methane, and some like Redwood Landfill use that methane to create biogas or electricity, about one-quarter of it escapes into the atmosphere.

What You Can Do

#1 Buy only as much as you need.

#2 Buy locally grown food and eat less meat.

#3 Put your food scraps in the green can and/or compost them at home.

#4 Donate extra food and used clothing and housewares to charities.

#5 Don't be a "wishful" recycler. Be scrupulous about how you sort your recyclables.

The good news is that it is relatively easy to divert organic material from the landfill. Paper and cardboard can be recycled. Food scraps, some paper (like napkins and paper towels), and yard waste can be composted, either at home or at the landfill. Surplus food can be donated to non-profits that distribute it to the needy. About half of the organic material that is put into the landfill is "recoverable." The measures below are geared to making that happen by 2030, starting with encouraging residents and businesses to divert, recycle and compost organic waste. To meet our diversion target, the City will consider adopting an ordinance that mandates recycling and, as a last resort, setting trash collection fees that enable the waste hauler to invest in machinery that can sort trash and recover all compostable and recyclable materials before they are sent to the landfill.

TABLE 9: WASTE REDUCTION MEASURES TO REDUCE COMMUNITY EMISSIONS

ID	Measure	GHG Reduction by 2030 ($MTCO_2e$)	Share of Reductions
WR-C1	Commercial Organic Waste	1,510	16%
WR-C2	Residential Organic Waste	800	8%
WR-C3	C&D and Self-Haul Waste	170	2%
WR-C4	Mandatory Waste Diversion	2,990	31%
WR-C5	Waste Processing Infrastructure	4,220	44%

WR-C6	Extended Producer Responsibility	n/a	n/a
WR-C7	Inorganic Waste	n/a	n/a
TOTAL		9,680	100%

WR-C1: Commercial Organic Waste
Work with Zero Waste Marin, Marin Sanitary Service, and non-profits such as Extra Food to divert commercial organic waste from the landfill through recycling, composting, and participation in waste-to-energy and food recovery programs.

- Conduct outreach and education to businesses subject to State organic waste recycling mandates (AB 1826) and encourage compliance with the law.
- Refer new and major remodel commercial and multi-family residential project proposals to the City's waste hauler for review and comment, and require projects to provide adequate waste and recycling facilities and access as feasible.
- Encourage commercial and multi-family property owners to require responsible use of on-site recycling facilities in lease and rental agreements and to train and regularly evaluate janitorial, landscape, and other property management services.

WR-C2: Residential Organic Waste
Work with Zero Waste Marin, Marin Sanitary Service, and other organizations to educate and motivate residents to utilize curbside collection services and home composting for food waste.

WR-C3: Construction & Demolition Debris and Self-Haul Waste
Require all loads of construction & demolition debris and self-haul waste to be processed for recovery of materials as feasible. Investigate creation of an ordinance requiring deconstruction of buildings proposed for demolition or remodeling when materials of significant historical, cultural, aesthetic, functional or reuse value can be salvaged.

WR-C4: Mandatory Waste Diversion
Adopt an ordinance requiring mandatory subscription to and participation in waste diversion activities, including recycling and organics collection provided by Marin Sanitary Service. Consider including phased implementation of the ordinance, penalties, and practical enforcement mechanisms.

WR-C5: Waste Processing Infrastructure
Review and revise the Town's franchise agreement with Marin Sanitary Service to ensure waste reduction and diversion targets are met. Consider investing in new solid waste processing infrastructure to remove recoverable materials (recycling and organics) from the waste stream and reduce contamination. Require regular residential and commercial waste audits and waste characterization studies to identify opportunities for increased diversion and to track progress in meeting targets.

WR-C6: Extended Producer Responsibility. Encourage the State to regulate the production and packaging of consumer goods and take-back programs. Encourage on-demand delivery services like

Amazon and Blue Apron to reduce packaging waste and investigate requirements and incentives for same.

WR-C7: Inorganic Waste. Promote reuse, repair, and recycling of inorganic materials, and encourage reduced use of packaging and single use items.

TABLE 10: WASTE REDUCTION MEASURES TO REDUCE GOVERNMENT OPERATIONS EMISSIONS

ID	Measure	GHG Reduction by 2030 ($MTCO_2e$)	Share of Reductions
WR-M1	Waste from Public Facilities	260	76%
WR-M2	Waste from City Operations	85	24%
TOTAL		345	100%

WR-M1: Waste from Public Facilities
Increase opportunities for recycling, reuse, and composting at City facilities.

WR-M2: Waste from City Operations
Embark on an educational and social marketing-based campaign to increase recycling, composting, reuse, and waste reduction within municipal operations. Conduct periodic waste audits of City facilities to understand where opportunities for increased diversion lie and to track progress.

WATER CONSERVATION

1% of potential reductions

San Rafael is no stranger to periodic droughts and the need to conserve water, and the community has responded by reducing per capita water use by about 25%, from 152 gallons per person per day (gpcd) in 2005 to 114 gpcd in 2016. In addition to installing low-flow fixtures (showerheads, faucets and toilets) and water-efficient appliances (clothes washers and dishwashers), residents and businesses are planting native, drought-tolerant species and even replacing lawns with attractive, low-water use gardens. Good thing, because as temperatures continue to rise, we will experience more droughts and more intense heat waves than before.

Our Greenhouse Gas Inventory counts emissions that are generated from the energy used to pump, treat and convey water from the water source to San Rafael water users. Far more emissions are created from the energy that is used to heat water, but those emissions are counted in the residential and commercial sectors. Therefore, the water sector comprises a much smaller share of community emissions than one might expect.

The water agencies that supply San Rafael's water are committed to using 100% renewable energy in their operations. Marin Municipal Water District (MMWD) began purchasing Deep Green electricity from MCE in 2017, and Sonoma County Water Agency, which provides 20-25% of MMWD's water, started purchasing 100% renewable electricity in 2015. As a result, emissions from the water sector will go down to nearly zero, but the overall contribution to community emissions reduction is small.

What You Can Do

#1 Replace your lawn with a drought-tolerant garden.

#2 Install a drip irrigation system and check it regularly for leaks.

#3 Install low water flow faucets, showerheads and toilets.

#4 Buy water-efficient dishwashers and clothes washers when it's time to replace them.

TABLE 11: WATER CONSERVATION MEASURES TO REDUCE COMMUNITY EMISSIONS

ID	Measure	GHG Reduction by 2030 ($MTCO_2e$)	Share of Reductions
WC-C1	Community Water Use	830	100%

WC-C1: Community Water Use

Reduce indoor and outdoor water use in residential and commercial buildings and landscaping.

- Work with Marin Municipal Water District (MMWD) and other organizations to promote water conservation programs and incentives.

- Educate residents and businesses about local and State laws requiring retrofit of non-compliant plumbing fixtures during remodeling and at resale.
- Ensure all projects requiring building permits, plan check, or design review are reviewed by MMWD.
- Encourage the installation of greywater systems and the use of recycled water where available.

TABLE 12: WATER CONSERVATION MEASURES TO REDUCE GOVERNMENT OPERATIONS EMISSIONS

ID	Measure	GHG Reduction by 2030 ($MTCO_2e$)	Share of Reductions
WC-M1	Municipal Water Use	<1%	100%

WC-M1: Municipal Water Use

Reduce indoor and outdoor water use in municipal facilities and operations.

- Replace high water use plants and inefficient irrigation systems with water-efficient landscaping.
- Investigate synthetic turf that uses organic infill for ball fields and parks to reduce water, herbicide use, and maintenance costs, while increasing field use throughout the year.
- Replace inefficient plumbing fixtures with high-efficiency fixtures.
- Use recycled water as available and practicable.

SEQUESTRATION AND ADAPTATION

Less than 1% potential reductions

California is already experiencing the effects of climate change. Every year, it seems like the news gets grimmer: more wildfires, more heat waves, longer droughts, more intense storms, less snow pack, and less fresh water. Annual average air temperatures have already increased by about 1.8 °F in California, and that number will likely double even if the world can reduce emissions 80% by 2050. San Rafael needs to be prepared for the likely impacts of climate change, including flooding from more intense storms and sea level rise, health impacts from heat exposure and poor air quality, and safety risks from the increased likelihood of wildfires and landslides.

Sea level rise is a particular concern to San Rafael, where many homes, businesses, and industrial and recreational facilities are at risk for flooding. Sea level has already risen 8" in San Francisco Bay and is expected to rise another 10 inches by 2040. Within this short time period, the Canal area, the Kerner Business District, and other shoreline development will likely experience tidal flooding. The Canal neighborhood residents, the majority of whom are lower-income and Latino, will be some of the first people impacted by sea level rise at their front doors.

Storm surges coupled with a 10" sea level rise could flood a greater area – up to 10% of San Rafael's land area – including Peacock Gap and the industrial and commercial area of Anderson Drive. By the end of the century, sea level is projected to rise 2.4 to 3.4 feet, and possibly as much as 5 feet. At the higher end, nearly 2,500 buildings, or 13% of all San Rafael buildings, could face some level of tidal flooding. A comprehensive assessment of San Rafael's vulnerable assets was completed in 2017. For more information, see the Marin Shoreline Sea Level Rise Assessment. While the Climate Change Action Plan contains some measures that address adaptation, a more complete set of goals, policies and programs are contained in the San Rafael Local Hazard Mitigation Plan and will be incorporated in the City's updated General Plan.

What You Can Do

#1 Plant trees appropriate to your situation.

#2 Add compost to your soil.

#3 Purchase carbon offsets for airplane flights and other emission that are difficult to mitigate.

#4 Find out if your home or business is vulnerable to sea level rise at Our Coast Our Future.

In addition to adaptation strategies, this section contains measures to sequester carbon dioxide through planting and preservation of trees and other vegetation and the development of carbon-rich soils. Carbon offsets are often used to fund these types of carbon sequestration projects and can be purchased to offset emissions that are difficult to otherwise mitigate, such as airplane flights. We haven't credited emission reductions for these actions because we don't count sequestered carbon in the community greenhouse gas inventory, but we recognize that sequestration is a critical component to meeting our carbon reduction goals.

TABLE 13: SEQUESTRATION AND ADAPTATION MEASURES TO REDUCE COMMUNITY EMISSIONS

ID	Measure
SA-C1	Urban Forest
SA-C2	Carbon Sequestration
SA-C3	Carbon Offsets
SA-C4	Sea Level Rise
SA-C5	Climate Change Adaptation

SA-C1: Urban Forest

Increase carbon sequestration and improve air quality and natural cooling through increasing tree cover in San Rafael.

- Plant additional trees on City-owned land, including public parks, open space, medians, and rights of way, where feasible.
- Review parking lot landscape standards to maximize tree cover, size, growth, and sequestration potential.
- Regulate and minimize removal of large trees and require planting of replacement trees.
- Require that the site planning, construction and maintenance of new development preserve existing healthy trees and native vegetation on site to the maximum extent feasible. Replace trees and vegetation not able to be saved.
- Encourage community members to plant trees on private land. Consider creating a tree giveaway event or providing lower-cost trees to the public through a bulk purchasing program.
- Encourage the creation of community gardens on public and private lands by community groups.
- Provide information to the public, including landscape companies, gardeners and nurseries, on carbon sequestration rates, drought tolerance, and fire resistance of different tree species.
- Manage trees and invasive species in the open space for forest health and reduction of fuel load.
- Require new development, redevelopment, and infrastructure projects to implement best management practices as feasible, including low-impact development techniques, the minimal use of non-pervious surfaces in landscape design, and the integration of natural features into the project design, to naturally filter and biodegrade contaminants and to minimize surface runoff into drainage systems and creeks.

SA-C2: Carbon Sequestration

Increase carbon sequestration in the built environment, developed landscapes, and natural areas.

- Encourage use of building materials that store carbon, such as wood and carbon-intensive concrete.
- Encourage composting to develop healthy, carbon-rich soils.
- Manage parks and open spaces to steadily increase carbon in vegetation and soil.
- Increase the extent and carbon sequestration potential of bay wetlands, through improvements such as horizontal levees.

SA-C3: Carbon Offsets

Reduce the impact of greenhouse gas emissions through the purchase of carbon offsets.

- Encourage community members to purchase carbon offsets to reduce their carbon footprint.
- Consider partnering with a local non-profit organization to promote a carbon offset program.
- Focus on offsetting emissions that are difficult to mitigate otherwise, such as airplane travel.

SA-C4: Sea Level Rise

Prepare for and adapt to a rising sea level.

- Consider the potential for sea level rise when processing development applications that might be affected by such a rise. Use current Flood Insurance Rate Maps and National Oceanic and Atmospheric Administration (NOAA) recommendations associated with base flood elevation adjustments for sea level rise in the review of development proposals. Adopt requirements to assess sea level rise risks on new development, infrastructure, and transit corridors.
- Prepare a guidance document for incorporating sea level rise into the City's capital planning process.
- Work with local, County, state, regional, and federal agencies with Bay and shoreline oversight and with owners of critical infrastructure and facilities in the preparation of a plan for responding to rising sea levels. Make sure all local stakeholders are kept informed of such planning efforts.
- Consider developing flood control projects and modifying the City's land use regulations for areas subject to increased flooding from sea level rise.
- Update GIS (Geographic Information System) maps to include new data as it becomes available; utilize GIS as a tool for tracking sea level rise and flooding, and make available to the public.

SA-C5: Climate Change Adaptation

Prepare for and respond to the expected impacts of climate change.

- Incorporate the likelihood of sea level rise and extreme heat and storm events in the City's Local Hazard Mitigation Plan.
- Incorporate the likelihood of climate change impacts into City emergency planning and training.
- Coordinate with water districts, wildlife agencies, flood control and fire districts, Marin County, and other relevant organizations to develop a comprehensive plan addressing climate change impacts and adaptation strategies. Address human health and the health and adaptability of natural systems, including the following:

    a. Water resources, including expanded rainwater harvesting, water storage and conservation techniques, water reuse, water-use and irrigation efficiency, and reduction of impervious surfaces.

    b. Biological resources, including land acquisition, creation of marshlands/wetlands as a buffer against sea level rise and flooding, and protection of existing natural barriers.

c. Public health, including heat-related health plans, vector control, safe water, and improved sanitation.

d. Environmental hazard defenses, including seawalls, storm surge barriers, pumping stations, and fire protection.

- Ensure fair and robust inclusion of lower-income households and our diverse communities in the planning and response to climate change impacts, including sea level rise, public health, and emergency preparedness.

COMMUNITY ENGAGEMENT

1% of potential reductions

The Climate Action Plan contains actions that the City can undertake to reduce its own emissions by about 1,500 $MTCO_2e$, bringing the emissions from municipal operations down to 56% below 2005 levels. However, since emissions from governmental operations make up less than 1% of community-wide emissions, that is just a drop in the bucket.

The fact is that our residents, businesses, workers, and visitors will have to do their part to ensure we meet our reduction targets. The City can compel some of these actions by adopting ordinances and building regulations, but much of the success of our plan will depend on informing our community members and encouraging them to take action on their own. This section details the ways in which the City will seek public engagement and work with local businesses and community groups to achieve the emissions reductions identified for measures in other sections of the Plan.

What You Can Do

#1 Sign up for Resilient Neighborhoods and join a Climate Action Team.

#2 Commit to reducing your carbon footprint by taking the actions identified in this Plan.

The City has been partnering with Resilient Neighborhoods since 2009 to educate San Rafael residents on ways they can reduce their carbon footprint. The program organizes Climate Action Teams of up to 12 households that meet five times over two months to learn about strategies and resources to improve home energy efficiency, shift to renewable energy, use low-carbon transportation, conserve water, reduce waste, and adapt to a changing climate. To start, participants calculate their household carbon footprint and then take actions to reduce their greenhouse gas emissions by at least 5,000 pounds or 25%. Over 350 San Rafael residents have participated in the program.

TABLE 14: COMMUNITY ENGAGEMENT MEASURES TO REDUCE COMMUNITY EMISSIONS

ID	Measure
CE-C1	Community Education
CE-C2	Community Engagement
CE-C3	Advocacy
CE-C4	Innovation and Economic Development
CE-C5	Green Businesses

CE-C1: Community Education
Work with community-based outreach organizations, such as Resilient Neighborhoods, to educate and motivate community members on ways to reduce greenhouse gas emissions in their homes, businesses, transportation modes, and other activities.

CE-C2: Community Engagement
Implement a communitywide public outreach and education campaign to inform residents, businesses, and consumers about the impacts of climate change and the ways individuals and organizations can reduce their GHG emissions and create a more sustainable, resilient, and healthier community. Create an overarching theme to articulate a long-term goal, motivate community members, and brand a comprehensive suite of GHG-reduction programs. Prioritize promotion of programs that have the greatest greenhouse gas reduction potential. Emphasize and encourage citizens' involvement in reaching the community's climate goals, including innovative means of tracking milestones and comparing San Rafael's performance with other communities and with state, national and global benchmarks.

- Conduct outreach to a wide variety of neighborhood, business, educational, faith, service, and social organizations.
- Conduct outreach and education to the Latino community by using media, organizations, and gathering places favored by Latinos and translating materials into Spanish.
- Inform the public about the benefits of installing energy and water efficient appliances and fixtures, electrifying homes and commercial buildings, installing solar energy systems, and purchasing 100% renewable electricity.
- Inform the public about the benefits of using carbon-free and low-carbon transportation modes, such as driving electric vehicles, walking, bicycling, taking public transportation, and ridesharing.
- Utilize and tailor existing marketing materials when available.
- Partner with MCE, PG&E, MMWD, Marin Sanitary Service, Transportation Authority of Marin, Marin Transit, Golden Gate Transit, SMART, and other entities to promote available financing, audits, rebates, incentives, and services to the San Rafael community.
- Utilize the City's website, newsletters, social media, bill inserts, public service announcements and advertisements, recognition programs, and other forms of public outreach.
- Create stories and “shareable content” that can be used by bloggers, businesses, non-profits, social media, and traditional media.
- Use creative methods to engage the public, such as games, giveaways, prizes, contests, simple surveys, digital tools, and “pop-up” events.
- Utilize community-based social marketing and other social science-based techniques to effect behavior change.
- Participate in countywide outreach and education efforts, such as Drawdown Marin.

CE-C3: Advocacy
Advocate at the state and federal levels for policies and actions that support the rapid transition to GHG-free energy sources, electrification of buildings and the transportation fleet, and other impactful measures to sharply reduce greenhouse gas emissions.

CE-C4: Innovation and Economic Development
Convene an economic development and innovation working group to explore public-private partnerships and develop ways to decarbonize our local economy while spurring sustainable enterprise and equitable employment.

CE-C5: Green Businesses
Encourage local businesses to participate in the Marin County Green Business Program.

IMPLEMENTATION AND MONITORING

Plans are only effective if they're implemented and results are carefully evaluated. The City will prepare an annual assessment of the progress it is making on implementing the measures contained in this Climate Change Action Plan and continue to quantify community and greenhouse gas emissions to determine if we are on track to meet our reduction targets.

What You Can Do

#1 Get involved! Attend City Council meetings to voice your support for actions contained in this Plan.

TABLE 15: IMPLEMENTATION AND MONITORING MEASURES TO REDUCE COMMUNITY EMISSIONS

ID	Measure
CE-C1	Annual Monitoring
CE-C2	Update GHG Emissions Inventories
CE-C3	Funding Sources
CE-C4	Update the Climate Change Action Plan
CE-C5	Project Compliance Checklist

IM-C1: Annual Monitoring
Monitor and report on the City's progress annually. Create an annual priorities list for implementation.

IM-C2: Update GHG Emissions Inventories
Update the greenhouse gas emissions inventory for community emissions annually and every five years for government operations.

IM-C3: Funding Sources
Identify funding sources for recommended actions, and pursue local, regional, state and federal grants as appropriate. Investigate creation of a local carbon fund or other permanent source of revenue to implement the Climate Change Action Plan.

IM-C4: Update the Climate Change Action Plan
Update the Climate Change Action Plan regularly to incorporate new long-term reduction targets and strategies to meet those targets.

IM-C5: Project Compliance Checklist
Develop a project compliance checklist to use when reviewing development proposals, use permit applications, and building permit applications to ensure compliance with Climate Action Plan measures.