

**San Rafael Climate Change Action Plan**  
**Greenhouse Gas Emissions Reduction Strategy**  
**2013 Annual Report**

This annual report has been prepared to support the City's continued use of the Climate Change Action Plan (CCAP) as a qualified greenhouse gas (GHG) reduction strategy, as defined by the California Environmental Quality Act and supported by the Bay Area Air Quality Management District's (BAAQMD) GHG Plan Level Guidance.

**Background**

In 2011, the City completed an update to the CCAP to allow the City to utilize the CCAP as a qualified GHG reduction strategy pursuant to section 15183.5 of the California Environmental Quality Act (CEQA) Guidelines. A qualified greenhouse gas reduction strategy, once adopted following certification of an environment impact report or adoption of an environmental document, may be used in the cumulative impacts analysis of later projects such as development or infrastructure projects, thereby sparing these projects the time and expense of developing project-specific GHG emissions analyses and required mitigation measures. The City routinely evaluates all projects seeking a planning approval for compliance with the City's CCAP.

In 2012 and 2013, the City utilized the GHG emissions reduction strategy in reviewing and taking action on many projects that would have typically required the preparation of individual GHG assessments. During this time, approximately 30 projects were verified for compliance with this strategy utilizing a compliance checklist. Projects benefiting from the use of the compliance

checklist included, among others, the Northgate Mall Renovation (amendment for Home Goods), the new Davita Dialysis medical office building (3<sup>rd</sup> Street), the 1144 Mission Avenue residential condominiums, and the PG&E site soil remediation project (999 3<sup>rd</sup> Street).

Approximately 150 other smaller projects were approved without the use of the verification checklist as the use and improvements involved in these projects would not result in additional GHG emissions above the current baseline. Several large projects were processed during this period which required the preparation of an individual GHG assessment. Individual GHG emissions assessments were prepared for the Marin Sanitary Service Master Plan and the San Rafael Corporate Center Master Plan allowing medical office use.

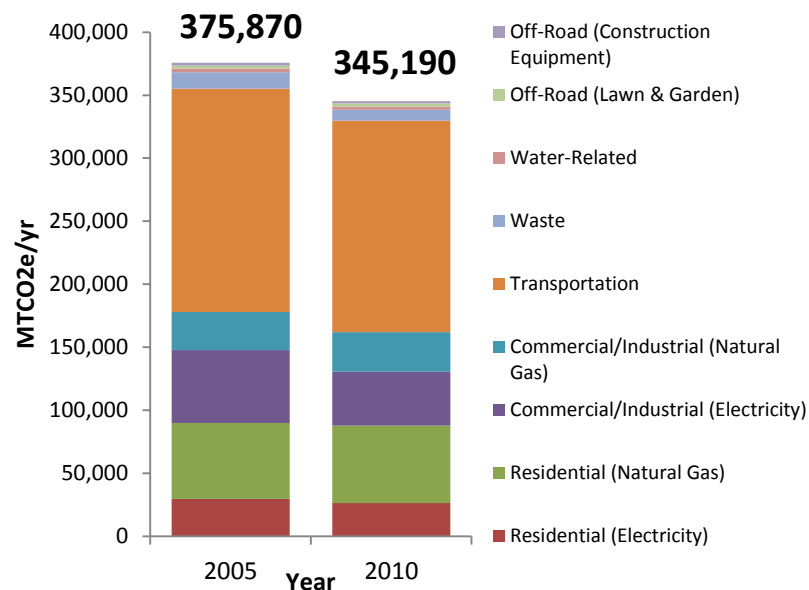
As part of the 2011 CCAP update, the City committed to preparing an annual assessment of the City's GHG emissions, progress toward achieving the local and state-recommended GHG reduction targets, and status of state and local policies implemented to reduce GHG emissions. This report fulfills the City's monitoring and reporting policies included in the CCAP.

**2005 and 2010 GHG Emissions Inventories**

In 2012 and 2013, the City participated in a project through the Marin County Energy Watch Partnership to update the 2005 baseline GHG emissions inventory and to prepare an inventory of 2010 GHG emissions. Both inventories include GHG emissions from communitywide sources and municipal operations. The work effort was led by the Marin Climate and Energy Partnership and, in addition to the City of San Rafael, included updated inventories for Belvedere, Fairfax, Larkspur, Mill Valley, Novato, Ross, San Anselmo, Sausalito, and Tiburon.

The updated 2005 and 2010 inventories for all 10 cities were prepared using a consistent methodology, satisfying BAAQMD guidance to address greenhouse gas emissions, and the Governor’s Office of Planning and Research (OPR) guidance to use the U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions released in 2012. The emissions inventory results for 2005 and 2010 for community activities are identified below.

Between 2005 and 2010, emissions decreased approximately 8% from 375,870 to 345,190 MTCO<sub>2</sub>e.<sup>1</sup>



<sup>1</sup> To emphasize the estimated nature of the GHG emissions inventory, we have rounded all emissions to the nearest ten. Numbers have been revised slightly to reflect updated data.

### Annual Monitoring and Reporting

The City utilizes a Microsoft Excel-based monitoring and reporting tool that integrates the 2005 and 2010 baseline emissions inventories, GHG emissions forecast, and reduction measures to facilitate the preparation of annual assessments. The implementation and monitoring tool identifies key metrics the City needs to track on an annual basis, and it provides a template to summarize the City's annual emissions and reduction measure implementation progress.

### 2013 GHG Emissions Assessment

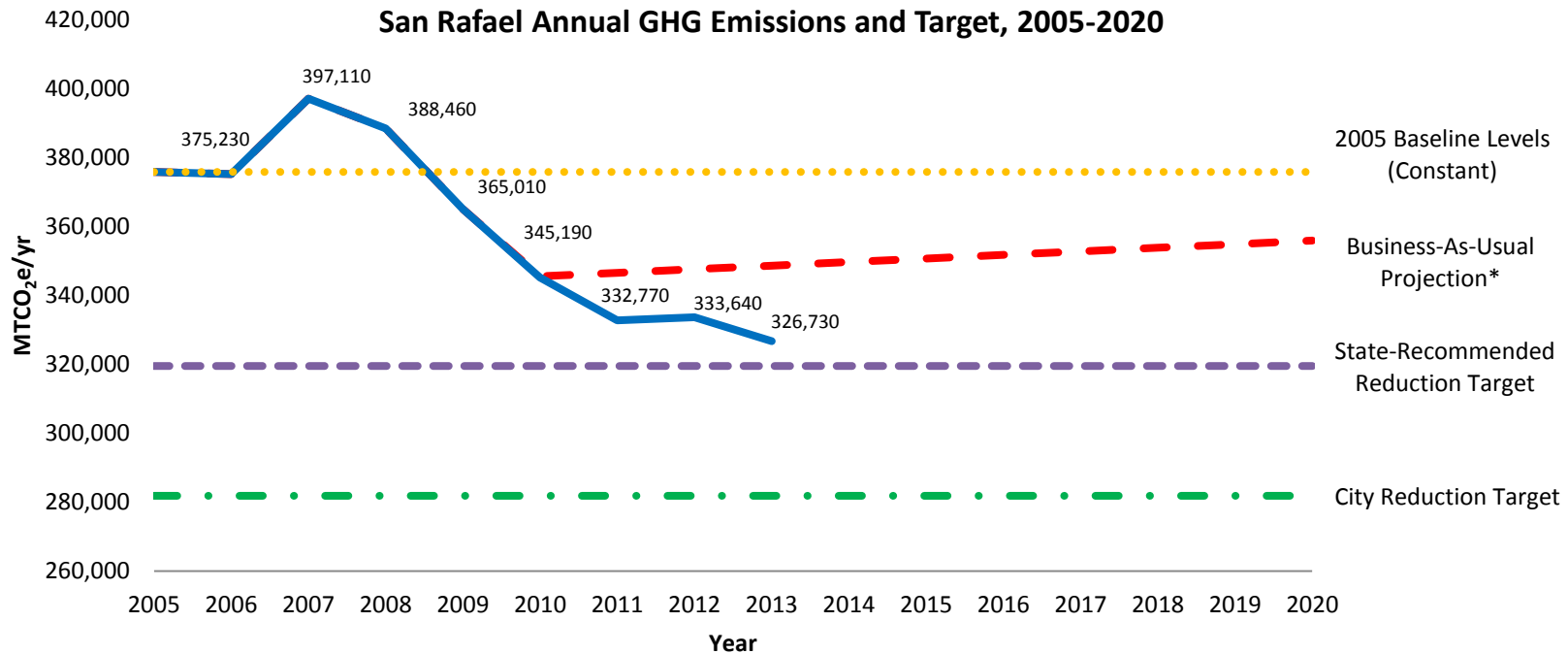
In 2013, San Rafael's community emissions decreased approximately 13% below 2005 emissions levels, and dropped approximately 5% between 2010 and 2013. The largest percent decreases in emissions came from the waste disposal (-32%) and construction equipment (-31%) sectors, while the largest overall decrease in emissions came from the transportation (-22,820 MTCO<sub>2</sub>e) and non-residential energy (-13,130 MTCO<sub>2</sub>e) sectors. The likely reasons for these emissions decreases are described in further detail in the remainder of this report.

Year	Residential Energy	Non-Residential Energy	Transportation	Waste	Water & Wastewater	Lawn & Garden	Construction	Total	% Change from 2005
2005	89,710	88,120	177,340	12,970	2,980	2,420	2,330	375,870	0%
2006	91,190	82,320	180,370	13,750	2,960	2,420	2,220	375,230	0%
2007	98,730	98,370	179,900	12,590	2,990	2,420	2,110	397,110	6%
2008	98,700	96,510	175,030	10,790	3,000	2,420	2,000	388,460	3%
2009	95,240	86,500	167,150	9,090	2,720	2,420	1,890	365,010	-3%
2010	87,690	74,290	167,860	8,600	2,560	2,420	1,780	345,190	-8%
2011*	89,810	72,830	155,080	8,340	2,540	2,440	1,730	332,770	-11%
2012	82,270	77,860	158,110	8,660	2,610	2,460	1,680	333,640	-11%
2013	81,600	74,990	154,520	8,880	2,660	2,470	1,610	326,730	-13%
<b>% Change from 2005</b>	-9%	-15%	-13%	-32%	-11%	2%	-31%	-13%	

\*GHG emissions have been revised from the 2011 Greenhouse Gas Reduction Strategy Annual Report, which incorrectly reported a 13% decline in emissions from 2005 levels for 2011.

**Overall GHG Emissions Progress Toward Target**

The City’s emissions in 2013 were 13% lower than the 2005 baseline year, and the City will need to reduce emissions 7,270 MTCO<sub>2</sub>e over the next 6 years to achieve the State-recommended GHG reduction target of 15% below baseline by 2020. The City will continue to work toward meeting and exceeding the State-recommended reduction target and achieving the City’s adopted target of 25% below baseline levels by 2020. By conducting annual monitoring and reporting the City can regularly assess progress towards both targets, and adjust programs and policies to ensure the City’s CCAP can continue to serve as a qualified GHG reduction strategy.



\* The Business as Usual Projection looks at how emissions are likely to grow between the years 2010 and 2020 if additional efforts to reduce emissions are not implemented.

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**Major Emissions Sources**

The following sections provide a year-by-year analysis of the changes in GHG emissions from the City’s largest sources: electricity, natural gas, transportation, and waste. Whenever possible, each section discussion includes the change in emissions from previous years, the likely influence of state and local programs or policies on reducing emissions, and progress toward target achievement based on each sector’s contribution to the overall GHG reduction target.

**Electricity Use Activity and GHG Emissions**

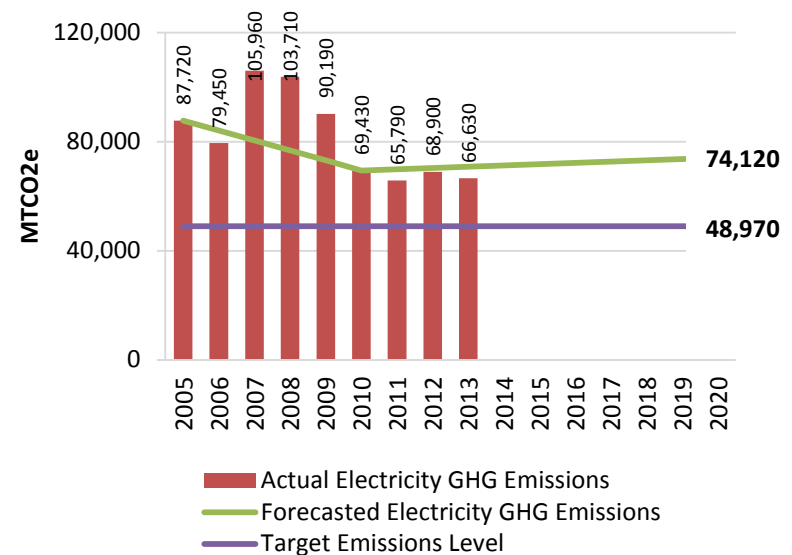
Electricity related greenhouse gas emissions in the residential and non-residential sectors decreased from 69,430 MTCO<sub>2</sub>e to 66,630 MTCO<sub>2</sub>e between 2010 and 2013. This 4% decrease in emissions occurred despite a 2% increase in the amount of electricity used from 339 million kWh in 2010 to 348 million kWh in 2013. The decreased emissions from the electricity sectors are a result of the increased use of Marin Clean Energy (MCE) by San Rafael residents and businesses.<sup>2</sup> In 2013, MCE electricity was approximately 27% less carbon intensive than PG&E electricity, and MCE provided approximately 66% of total electricity used in the community.

Efforts to improve energy efficiency (both electricity and natural gas use) in the community in 2012 and 2013 included:

- New energy-efficient HVAC Installation at City Hall

- Continued LED/high-efficiency streetlight conversions and lighting retrofits in parking garages and City Hall
- Memorandum of Understanding with Solar SEED Project to provide solar installations for City facilities and several other entities in the North Bay
- Support and coordination of the Greening for Profit and Resilient Neighborhoods programs
- Support of the solar feed-in tariff at the San Rafael Airport
- Support and promotion of Home Upgrade California and Smart Lights programs

**Annual Electricity Emissions and Target, 2005-2020**



<sup>2</sup> All customers in San Rafael were eligible to enroll in MCE in July 2012.

### Natural Gas Use Activity and GHG Emissions

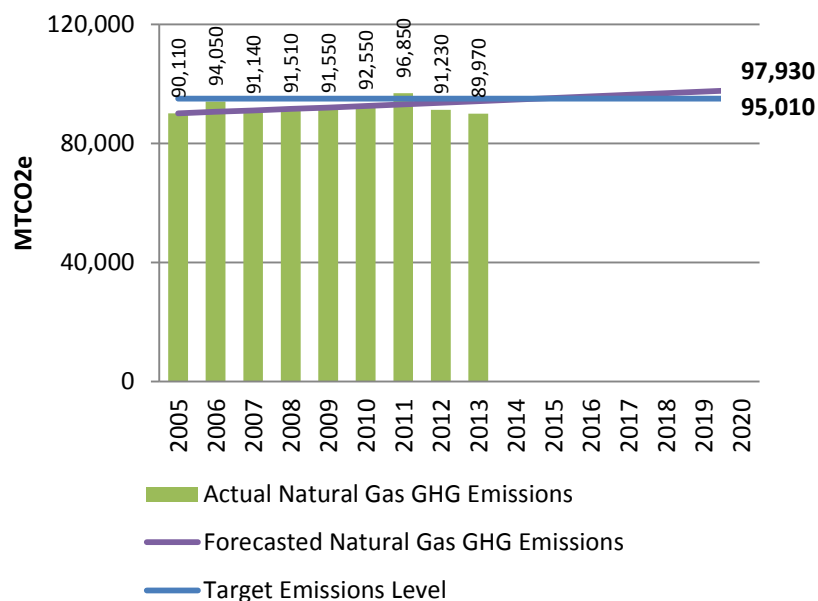
Natural gas is used in residential and commercial activities to provide space heating and to power equipment. Use of natural gas is highly variable depending on the weather conditions in a given year. This variability has led natural gas use consumption to fluctuate from year to year, from a low of 16.8 million therms in 2013 to a high of 18.1 million therms in 2011.

Natural gas presents fewer opportunities to decrease associated emissions and therefore the target GHG emissions from this sector are less aggressive than other sectors.

### Transportation Activity and GHG Emissions

According to the updated GHG Emissions Inventory prepared in 2013, transportation activities accounted for approximately 47% of the City's emissions in 2005. Emissions from transportation peaked in 2006 at 180,370 MTCO<sub>2</sub>e and have steadily declined hitting a low of 154,520 MTCO<sub>2</sub>e in 2013. Decreased emissions in the transportation sector are due to a combination of more fuel efficient and alternatively fueled cars and a reduction in the amount of vehicle miles traveled. The California clean car fuel standards and regular turnover of the vehicle fleet have resulted in a 9% decrease in average emissions generated, from 1.08 pounds per mile in 2005 to 0.98 pounds per mile in 2013.

**Annual Natural Gas Emissions and Target, 2005-2020**

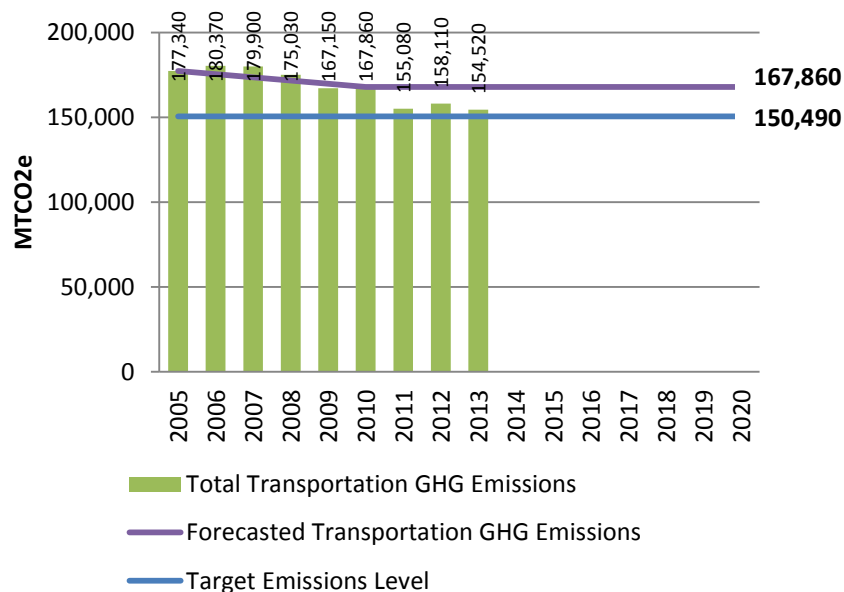


While it is difficult to pinpoint exactly how each land use and transportation policy affects emissions, the City has undertaken many efforts to reduce emissions from transportation. These recent efforts included:

- Conducted design and operation work for SMART Rail planning
- Initiated two Non-motorized Transportation Pilot Program projects related to pedestrian and bicycle infrastructure

- Implemented an employee commute pilot program
- Added additional electric vehicle charging stations at City parking lots
- Continued to implement the Bicycle and Pedestrian Master Plan
- Promoted Bike to Work Day in the community

**Annual Transportation Emissions and Target, 2005-2020**

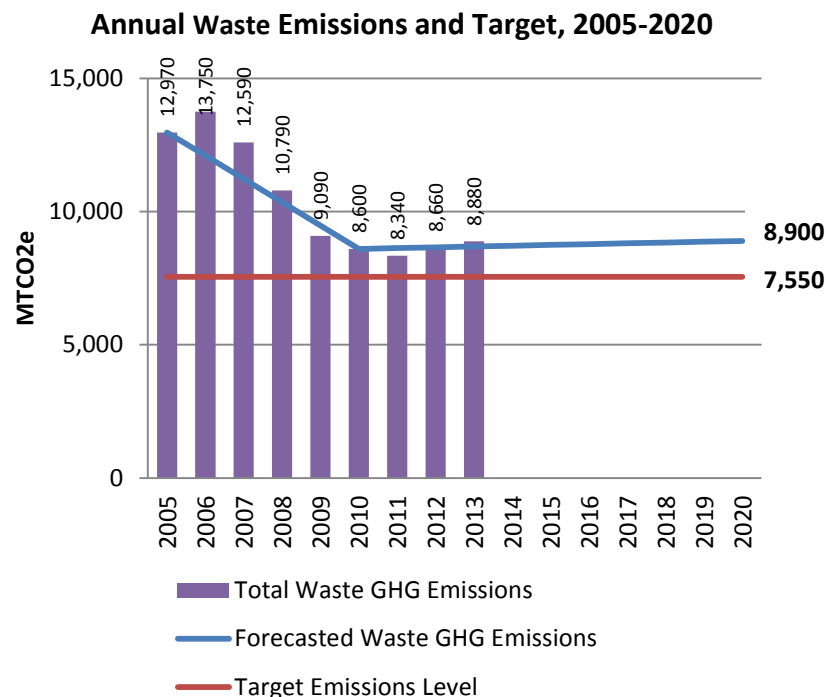


**Waste Disposal Activity and Emissions**

Waste disposal and associated GHG emissions in the community declined 36% between 2005 and 2011, but has since increased 6%. With an expansion in the types of materials collected and recycled, the waste generated by the San Rafael community hit a low of 39,846 tons in 2011, with alternative daily cover totaling 4,489 tons.

The associated decrease in emissions from waste disposal is a result of the community’s and County’s goals to move toward Zero Waste by 2025 as well as the following efforts accomplished in 2012 and 2013:

- Implemented recycling fund and zero waste planning and reporting requirements with the City’s waste hauler
- Conducted commercial / multi-family recycling ordinance outreach
- Implemented an ordinance banning polystyrene takeout food containers
- Conducted Marin Sanitary Service rate structure analysis and focus groups
- Implemented Paint Care program
- Adopted a Single Use Bag Reduction Ordinance
- Hired two interns to assist with Zero Waste efforts at City facilities and in the community



- Utilized City Manager’s Snapshot, social media, and press to promote sustainability efforts
- Won a Beacon Award for Sustainability
- Supported and promoted local green festivals, lectures, workshops and activities
- Participated in and supported the Marin Climate and Energy Partnership, Chamber Green Committee, Electric Vehicle Working Group, and Marin School of Environmental Leadership, among others
- Participated in county-wide adaptation planning processes

While San Rafael has made significant progress in reducing GHG emissions since 2005, the City will need to continue to implement policies and programs that further reduce emissions to achieve the 2020 GHG reduction target. The City Council’s Sustainability Subcommittee continued the practice of setting annual priorities from the GHG Reduction Strategy to implement in 2014. In 2015 the Subcommittee was replaced with one City Council Liaison, who helped set annual priorities for 2015 in the same fashion. These priorities for 2014 and 2015 included actions from all four of the major sectors listed above.

Continuing to implement GHG reduction measures and regularly reporting on the City’s progress will ensure that the City’s CCAP can continue to serve as a qualified GHG reduction strategy and provide streamlining opportunities for new projects in San Rafael.

**Additional Efforts and Priorities**

In addition to the programs and actions described above, the City pursued a range of outreach activities and participated in several multi-agency efforts, including:

- Hosted quarterly CCAP implementation meetings with the public
- Supported a robust City Employee Green Team and Employee Commute Committee