City of Millbrae Final Climate Action Plan

Executive Summary

October 2020

RICAPS
Regionally Integrated Climate Action Planning Suite

Acknowledgements

Reuben D. Holober, Mayor
Ann Schneider, Vice Mayor
Anne Oliva, Councilmember
Gina Papan, Councilmember
Wayne J. Lee, Councilmember

Millbrae City Manager
Thomas C. Williams

Millbrae City Staff
Shelly Reider
Khee Lim
Meghan Kelly

The Climate Action Plan was developed using the Regionally Integrated Climate Action Planning Suite (RICAPS) funded by a grant from the Bay Area Air Quality Management District (BAAQMD) and by California utility customers, administered by Pacific Gas and Electric Company (PG&E) under the auspices of the California Public Utilities Commission and with matching funds provided by the City and County Association of Governments of San Mateo County (C/CAG).

RICAPS Project Consultant: DNV GL – Ben Butterworth, Blake Herrrschaft, Katie Green

RICAPS Staff: Sandy Wong (C/CAG), Kim Springer (County of San Mateo), Susan Wright (County of San Mateo)

Executive Summary

The Climate Action Plan (Plan) is designed to be a blueprint of our community's response to the challenges posed by climate change. Climate change is a global problem; however, through local actions the City can do its part to contribute to reducing greenhouse gas (GHG) emissions from local sources. Climate scientists around the world, represented by the Intergovernmental Panel on Climate Change (IPCC), have an unequivocal position: human activity is changing the Earth's climate through the release of GHG emissions resulting from the combustion of fossil fuels. The longer communities delay taking action, the greater the risk humans face of irreversibly depleting non-renewable resources and harming our environment. However, it is conceivable, and increasingly foreseeable, that humans will delay action so long that useful policy and programs will become infeasible and both human civilization and the biosphere will be permanently damaged.

The City of Millbrae (City) cannot solve the climate crisis alone. Working in coordination with San Mateo County, the State of California (State), and the Federal government, the City has committed to taking steps to reduce GHG emissions and create new programs and services that will support the community and businesses in doing the same. The Plan offers ways to make homes more energy efficient and increase the amount of locally produced renewable energy. It recommends "smart" development patterns that emphasize vibrant neighborhoods and "complete streets" that allow people to go about their business on foot, by bicycle, or via public transportation. It provides transit solutions and offers ways to reduce waste that would otherwise go to landfills. Finally, the Plan outlines measures that will continue to make municipal government operations an efficient and environmentally responsible organization.

Why the City of Millbrae has a Climate Action Plan

The City of Millbrae, with our partner the City and County Association of Governments (C/CAG) of San Mateo County, and with partial grant funding from the Bay Area Air Quality Management District (BAAQMD) and Pacific Gas and Electric Company (PG&E), has developed the Climate Action Plan in order to achieve a number of objectives, including:

- **To demonstrate environmental leadership –** We as a community can rise to the difficult challenge of reducing the impact of climate change by taking reasonable steps to reduce our GHG emissions.
- **To save money and promote green jobs –** Residents, businesses, and government will reduce their utility costs through increased energy and water efficiency. A focus on efficiency creates job opportunities within the community that contribute to protecting our environmental resources.
- **To comply with letter and spirit of State environmental initiatives –** California is taking the lead in tackling climate change while driving the new energy markets and fostering new environmental services. As such we have a responsibility to help the State meet its goals to reduce greenhouse gas emissions.
- **To promote sustainable development –** By developing the Climate Action Plan according to BAAQMD District guidelines, a new class of sustainable development projects, such as mixed use and transit-oriented developments, can be fast-tracked through the California environmental review process.

We have developed this Climate Action Plan to implement measures to reduce greenhouse gases through environmental leadership and stewardship of our local environment.

Greenhouse Gas Inventory and Forecast

The emissions inventory provides an important foundation for the Climate Action Plan, providing a baseline year, 2005, against which progress toward the City goal of reducing GHG emissions of 32% by 2025 and 49% by 2030 can be measured. The Plan includes a business-as-usual (BAU) forecast of GHG emissions, which will enable the City of Millbrae to estimate the amount of emissions reductions needed to meet its goal.

In the base year of 2005, approximately 150,643 metric tons of carbon dioxide equivalent (MTCO2e) were emitted in Millbrae from the residential, commercial, industrial, transportation, waste, and municipal sectors.[1] For the community-wide inventory, the municipal emissions are included in the commercial/industrial sector. Burning fossil fuels in vehicles and for energy use in buildings and facilities is the largest contributor to the City's GHG emissions.

Table 1 provides a summary of total city-wide (i.e. community and municipal) GHG emissions.

Table 1: 2005 Community Emissions by Sector

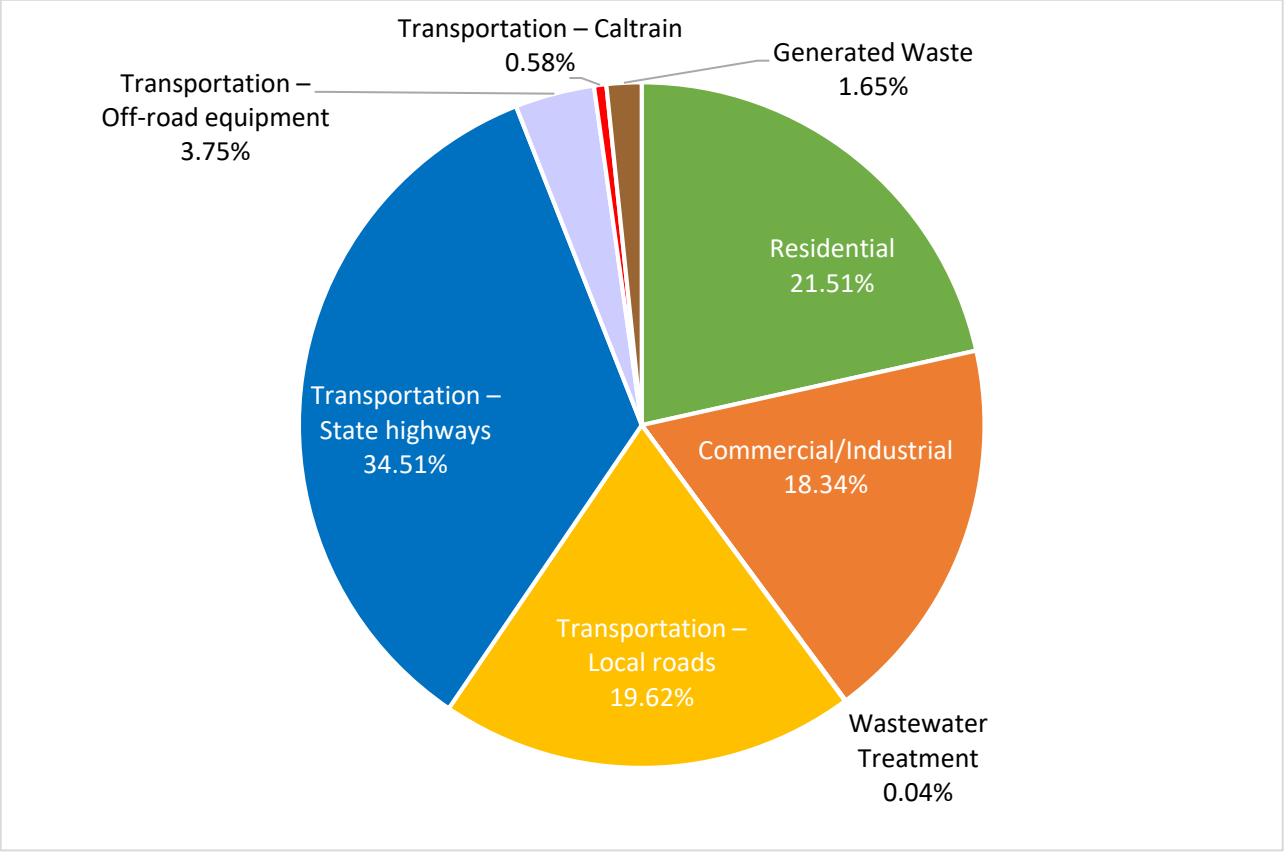
Sector	GHG Emissions ($MTCO_2e$)	Percentage of GHG Emissions
Residential	32,405	21.5%
Commercial/Industrial	27,633	18.3%
Transportation – Local roads	29,558	19.6%
Transportation – State highways	51,981	34.5%
Transportation – Off-road equipment	5,645	3.7%
Transportation – Caltrain	873	0.6%
Generated Waste	2,486	1.7%
Wastewater Treatment	62	0.04%
TOTAL	**150,643**	**100%**

The residential, commercial, and industrial sectors represent emissions that result from electricity and natural gas used in both private and public sector buildings and facilities. The transportation sector includes emissions from private, commercial, and fleet vehicles driven within the City's geographical

[1] Carbon dioxide equivalent is a unit of measure that normalizes the varying climate warming potencies of all six GHG emissions, which are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). For example, one metric ton of methane is equivalent to 21 metric tons of CO_2e. One metric ton of nitrous oxide is 210 metric tons of CO_2e.

boundaries as well as the emissions from transit vehicles and the City-owned fleet. Off-road equipment includes lawnmowers, garden equipment, and construction, industrial, and light commercial equipment. Figure 1 shows the proportion of Millbrae's total GHG emissions from all major sources for 2005.

Figure 1: Community Emissions by Sector (2005)



As shown above, the four largest sectors of emissions are either related to transportation (State highways and local roads) or building energy use (residential and commercial/industrial).

The City of Millbrae Reduction Target

The City of Millbrae is committing to reducing community-wide greenhouse gas emissions 49% by 2030, a reduction of 92,025 metric tons of carbon dioxide equivalent.

The City of Millbrae is committed to an emissions reduction target of 49% below the baseline 2005 levels by 2030 and an interim target of 32% below baseline levels by 2025. This goal is selected to be consistent with California SB 32 and the BAAQMD guidelines for a qualified GHG emissions reduction strategy and to be achievable by City-supported measures identified in the Plan. The target for SB 32 is a 40% reduction from the 1990 baseline by 2030, however, few California cities performed a 1990 baseline, with Millbrae's first inventory being performed for 2005. Emissions in California continued to increase from the period of 1990-2005. Based on direction from California Air Resources Board, cities are to assume that a 15% reduction

from 2005 levels will be equivalent to 1990 levels. The resulting savings requirement versus 2005 levels is 49% as shown in the equations below:

- 2005 emissions = 100 / 0.85 = 117.46% of 1990 emissions
- 2030 emissions target = {(117.64% - (100% - 40% [SB 32 mandated savings])) / 117.64%} = 49% required emissions savings versus 2005 baseline.

Figure 2 illustrates how the BAU emissions are estimated to increase, thus widening the emissions reductions needed by 2025 and 2030. Figure 2 also shows the emissions reductions expected from State level actions, and the reductions needed to reach the City's emissions target.

Table 2 shows the baseline emissions, forecasted emissions, targeted emissions, and emissions needed to reach the targets.

Figure 2: Millbrae GHG Reduction Target (32% below 2005 levels by 2025 and 49% below 2005 levels by 2030)

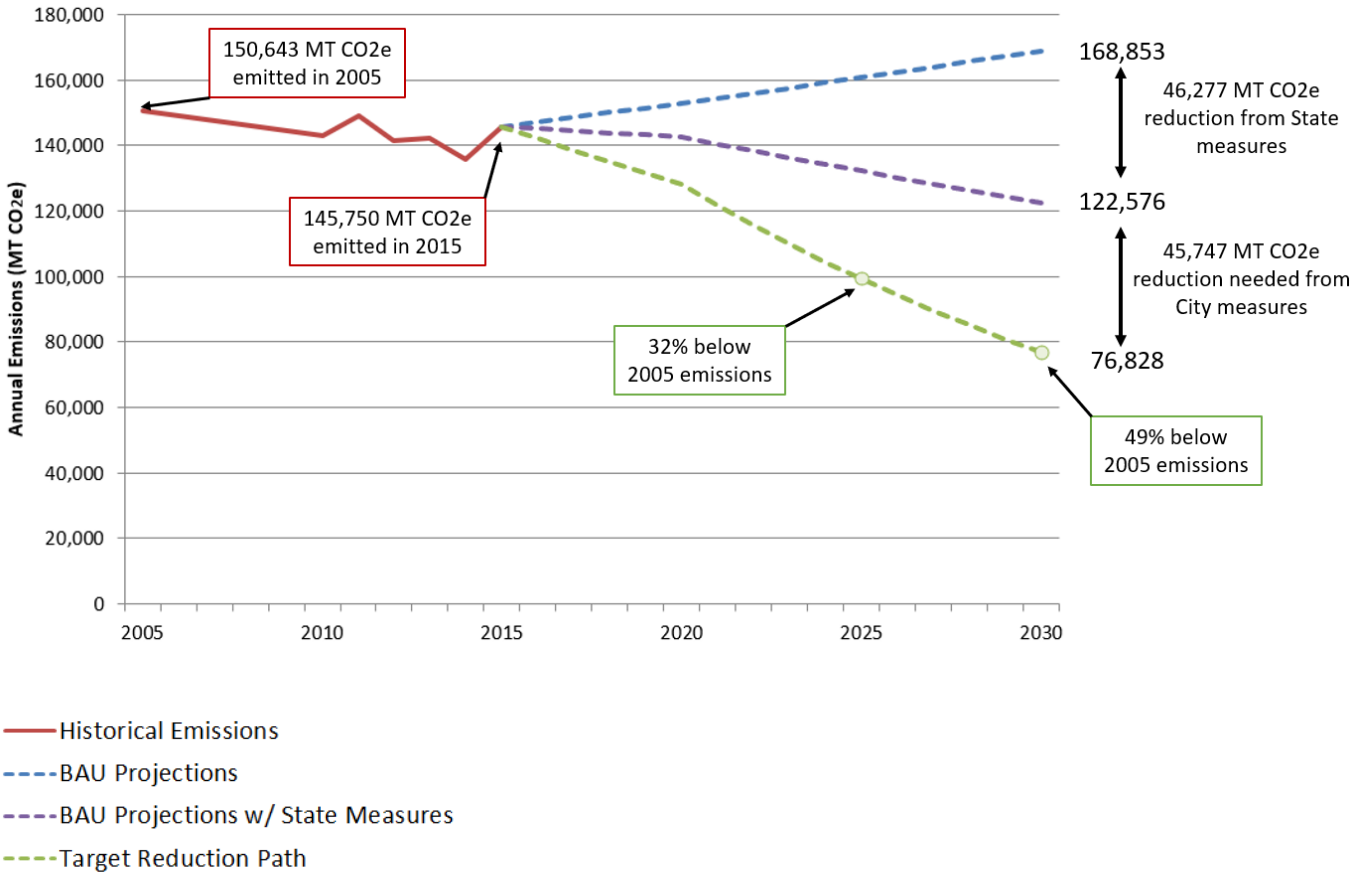


Table 2: GHG Emissions Projection and Reduction Target

Description	Emissions ($MTCO_2e$)
2005 Base Year Emissions:	150,643
2025 Target Emissions at 32% below 2005:	102,437
2025 BAU Emissions:	160,682
2025 Required Reduction:	**58,245**
2030 Target Emissions at 49% below 2005:	76,828
2030 BAU Emissions:	168,853
2030 Required Reduction:	**92,025**

Climate Action Strategies

The Climate Action Plan is a beginning of a journey towards a more sustainable Millbrae. In the Plan, the citizens and business community of Millbrae will find policies and programs that aim to reduce emissions, save energy (and money), and help the City of Millbrae continue to be a beautiful and healthy place to live, work, and play as time goes on.

By adopting the Plan, the City is committing to take action to reduce GHG emissions. The Plan provides a prioritized list of actions, or “measures”. Many of the strategies in the Plan are already in progress or underway. The City benefits from its longstanding leadership in environmental programs, and a number of the measures included in the Plan extend current environmental programs that will help achieve its goals. Some of the other strategies are newly proposed policies or programs, each of which should be further studied before being implemented. Some of the emissions reductions will come from State and countywide transportation strategies that are essential in order for the City to achieve the emissions reduction goal by 2030. In addition, the Plan contains a mix of voluntary strategies and mandatory policies. Of the 43 measures included in the Plan, 21 are new programs or policies. While implementation dates have been allocated to the various measures, dates may change based on financial considerations and other conditions outside of the City’s control.

The programs and policies described give Millbrae a viable path towards reducing emissions that, combined with emissions reductions resulting from countywide programs and State and regional policies, will meet the emissions reduction goals adopted by the City Council and established in Assembly Bill (AB) 32 and Senate Bill (SB) 32.

The Climate Action Plan includes the descriptions of the measures. The following section is an outline of all of the measures.

Summary of Measures

A summary of all the emission reduction measures is provided in Table 3.

Table 3: Summary of All Measures

#	Measure	Description	GHG Reduction in 2030 (MTCO2e)	Cont. of Current Measure ?	Measure Start Year
1	**Commercial Green Building Ordinance**	The City will continue to adopt the latest version of the CALGreen Code for non-residential new construction and major remodels for applicable updates outside of the Reach Codes.	497	Yes	N/A
2	**Residential Green Building Ordinance**	The City will continue to adopt the latest version of the CALGreen Code for residential new construction and major remodels for applicable updates outside of the Reach Codes.	146	Yes	N/A
3	**Residential Energy Retrofit Incentives and Rebates**	Through marketing and outreach, the City promotes participation in residential energy efficiency programs, including BayREN's Home+ program, San Mateo County Energy Watch and PG&E's efficient appliance rebates. City will encourage residential energy audits.	2,872	Yes	N/A
4	**Commercial Energy Efficiency Programs**	Through marketing and outreach, the City promotes participation in commercial energy efficiency programs and demand response programs offered by SMC Energy Watch and PG&E – including PGE's appliance rebates, 0% energy efficiency financing, and demand response programs. City will encourage commercial energy audits.	1,657	Yes	N/A
5	**Residential Energy Conservation Program**	Initially start a voluntary residential energy conservation program, whereby the City would encourage minimum energy efficiency and water efficiency standards at the time of building sale. Transition to mandatory residential energy conservation ordinance over time.	607	No	2021 (voluntary) / 2023 (mandatory)
6	**Commercial Energy Conservation Program**	Initially start a voluntary commercial energy conservation program, whereby the City would encourage minimum energy efficiency and water efficiency standards at the time of building sale. Transition to mandatory commercial energy conservation ordinance over time.	458	No	2021 (voluntary) / 2023 (mandatory)
7	**Free or Subsidized Shade Trees**	Implement City program to reduce energy consumption associated with cooling homes through the provision of free or subsidized shade trees for buildings with eastern, western or southern exposures.	23	No	2021
8	**Electrical Panel Upgrades in Existing Buildings**	Leverage incentives and resources provided by PCE, BayREN, and PG&E to encourage residents and offices to upgrade electric panels in order to accommodate all-electric technologies including solar PV, battery storage, air source heat pumps, heat pump water heaters, electric dryers, electric stoves, and electric vehicles.	6,480	No	2020

#	Measure	Description	GHG Reduction in 2030 (MTCO2e)	Cont. of Current Measure ?	Measure Start Year
9	**Residential & Commercial All-Electric Ordinance**	Update building code to mandate that residential and commercial new construction and major remodels be built to an all-electric standard, including electric heating, cooling, and water heating.	1,617	No	2021
10	**Promote Solar Installations**	Continue to participate in bulk purchase program such as the Peninsula SunShares Program. Promote the installation of solar among residents and businesses in the community.	1,527	Yes	N/A
11	**Participate in Community Choice Aggregation**	Through Peninsula Clean Energy, the City will continue to provide greener renewable electricity to citizens and businesses.	7,320	Yes	N/A
12	**New Non-Residential Buildings Solar Requirement**	Update building code to mandate that all commercial new construction and major remodels install a solar PV system at time of construction.	616	No	2021
13	**Pairing Battery Storage with Solar PV Systems**	Provide education and outreach on the benefits of pairing battery storage with solar PV systems to stakeholders, including businesses, residents, and contractors.	872	No	2020
14	**Energy Efficient Street Lighting**	Continue to replace street, signal, parks, and parking lot lighting with efficient lighting.	64	Yes	N/A
15	**Environmentally Preferred Purchasing Policy - Energy**	Continue to implement Administrative Standard Procedures which includes a sustainable purchasing policy prioritizing Energy Star equipment.	4	Yes	N/A
16	**Participate in Community Choice Aggregation: Municipal**	The City has elected and will continue to elect to “opt up” to ECO100 (100% renewable) electricity service through PCE.	142	Yes	N/A
17	**Energy Efficiency in Municipal Buildings**	Continue to audit city facilities for energy efficiency opportunities and implement energy efficient (EE) retrofits. The City participates in San Mateo County Energy Watch and leveraged benchmarking to identify opportunities for EE upgrades and track energy performance. Leverage other programs that provide funding.	273	Yes	N/A
18	**Renewable Energy Installation for Municipal Properties**	Evaluate installation of solar carport system at Millbrae City Hall/Library parking lots.	68	No	2022
19	**Municipal Green Building Policy**	The City will follow the CALGreen Codes and consider certification for LEED Silver or Gold status or equivalent. New construction will follow adopted Reach Codes for building electrification.	5[2]	No	2021
20	**Water Conservation Incentives**	Continue promoting existing and new rebates for water efficient appliances and fixtures.	102	Yes	N/A

[2] These projections assume that any new facilities are built to LEED Silver standards or equivalent.

#	Measure	Description	GHG Reduction in 2030 (MTCO2e)	Cont. of Current Measure ?	Measure Start Year
21	**Water Efficient Landscape Ordinance and CALGreen Indoor Water Efficiency Requirements**	Continue implementation of the State Model Water Efficient Landscape Ordinance (MWELO) and CALGreen indoor water efficiency requirements.	43	Yes	N/A
22	**Residential "Graywater Ready" New Construction**	Encourage new construction projects to be built "graywater ready" by educating applicants during the design phase of projects.	11	No	2021
23	**Smart Growth Development**	Continue Smart Growth Policy that prioritizes infill, higher density, transportation oriented, and mixed-use development.	624	Yes	N/A
24	**Walkable / Bikeable Street Landscape**	Remake urban landscape to make walking and biking more desirable such as bike lanes, bike parking, traffic calming, beautification, etc.	873	Yes	N/A
25	**Safe Routes to School**	Continue to support the City's Safe Route to Schools program by establishing bike trails and safe pedestrian routes to local schools (infrastructure) and educating the community about the program.	50	Yes	N/A
26	**Electric Vehicle Education and Outreach**	Increase number of electric vehicles that are owned by residents, commuters, and visitors to the City through education and outreach focused on the benefits of electric vehicles.	5,555	Yes	N/A
27	**Local Farmers' Market**	Support the farmers' market to encourage local shopping for locally-grown food and reduce VMT associated with acquiring produce.	6	Yes	N/A
28	**Bike Sharing**	Explore bike sharing program to have bikes located at the BART Station, downtown, and elsewhere.	118	No	2021
29	**Car Sharing**	Encourage car sharing companies to open pods in town.	131	No	2021
30	**Shuttle Program**	Increase shuttle service within city limits to connect areas not covered by public transit.	249	No	2021
31	**EV Charging Infrastructure in Existing Buildings**	Leverage incentives from PCE to expand charging infrastructure in public properties, multi-unit dwellings, and workplaces.	11,558	No	2020
32	**EV Charging Infrastructure in New Construction**	Adopt Reach Code to update the residential and commercial building code to increase the mandated percentage of parking spaces designed to accommodate electric vehicle charging equipment and also increase the mandated percentage of parking spaces devoted to clean air vehicles (EVs, PHEVs, carpools).	878	No	2021
33	**Shared Electric Bikes and Scooters**	Modify existing City infrastructure to accommodate shared electric bikes and scooters that provide last-mile solutions to residents and commuters. Infrastructure enhancements including dedicated off-street parking spaces and on-street corrals to accommodate shared electric bike and scooter parking and prevent conflicts with pedestrians.	830	No	2021

#	Measure	Description	GHG Reduction in 2030 (MTCO2e)	Cont. of Current Measure ?	Measure Start Year
34	**Electric Transportation Network Company (TNCs) Vehicles**	Develop policies, such as a revenue neutral fee that only applies to internal combustion engine TNCs, to encourage the use of EV TNCs in the community. Utilize funds generated by fees to provide discounts on EV TNC rides. Provide designated drop-off locations and charging locations for EV TNCs to facilitate EV adoption.	887	No	2021
35	**Public Employee Commuting Program**	Continue with the commute alternatives program to promote and incentivize public transportation, carpooling, biking, etc.	2	Yes	N/A
36	**Clean Fleet Policy**	Prioritize purchase of battery electric, plug-in hybrid electric, and traditional hybrid vehicles. Maintain existing vehicles for optimum mileage. Encourage staff to drive minimally and efficiently. Expand on the idling policy.	42	No	2020
37	**Landfill Diversion Rate Goal**	Increase participation in recycling programs and weekly collection of recyclables and organic waste to achieve 85% diversion.	289	Yes	N/A
38	**Sustainable Food Service Ware**	Amend the existing Sustainable Food Service Ware ordinance to require that all food ware is compostable and to reduce the use of other single-use items in food services.	Supporting Measure	No	2021
39	**Commercial Organics Recycling Ordinance**	AB 1826 requires all businesses and multi-family complexes with more than five units to sort and recycle organic material. Provide enforcement to ensure compliance with ordinance**.**	Supporting Measure	Yes	N/A
40	**Environmentally Preferred Purchasing Policy - Waste Reduction**	Revise the Administrative Standard Procedures on Reuse and Recycling to strengthen sustainable purchasing procedures.	Supporting Measure	Yes	N/A
41	**Sustainable Vendor Policy at Public Events**	Continue to work with event organizers for recycling cardboard, paper, containers and food/organics at public events, and for using compostable/recyclable food service ware.	Supporting Measure	Yes	N/A
42	**Municipal Zero Waste Policy**	Implement policy to achieve 95% diversion in City operations by 2030.	3	No	2020
43	**Bay Area Green Business Program**	Continue implementing this program that allows businesses to brand themselves as green by following sustainable practices.	110	Yes	N/A

Meeting the Emissions Targets

In summary, the measures described in the Plan, combined with state-wide legislation and initiatives and countywide transportation programs, will enable the City to meet its emissions reduction target of 49% below 2005 levels by 2030 and the interim target of 32% below 2005 levels by 2025. Table 4 shows the contribution of the state-wide initiatives along with the community and municipal operations Climate Action Plan measures. As shown in Figure 2 and Table 2, the City needs to achieve a 92,025 $MTCO_2e$ of GHG emissions reduction by 2030 to meets its goal. The total estimated GHG reductions accounted for in the Plan total 93,887 $MTCO_2e$ by 2030 (49.68% below 2005 levels), as shown in Table 4.

Table 4: Meeting the 2030 Target

State Initiative	Sector	2030 Reduction in City's emissions (MT CO2e)
Advanced Clean Cars Program	On-road Transportation	27,207
Low Carbon Fuel Standard	Off-road Transportation	1,223
Caltrain Electrification	Trains	1,045
Renewable Portfolio Standard	All Electricity	5,360
100% ZNE New Residential (2020)	Residential Energy	1,279
50% ZNE Existing Commercial (2030)	Commercial Energy	8,157
Organic Waste Diversion SB 1383	Disposed Waste	2,007
A. Total State-wide Initiative Emissions Reductions		46,277
B. Total City Climate Action Plan Reductions		47,609
C. Total Expected Emissions Reductions /(A+B)		93,887
D. City of Millbrae Emissions Reduction Requirement		92,025
E. Meets/exceeds State goals? (C > D)		Yes

Conclusion

While the challenge of climate change is unprecedented, local-level solutions can reduce emissions, improve energy efficiency, promote economic development, and improve the quality of life for the community, both residents and businesses.

The City of Millbrae has taken a significant step toward a more sustainable future with the Climate Action Plan. The Plan has identified areas and opportunities to reduce GHG emissions through the community and municipal operations, along with state-wide and county-wide efforts, to ultimately achieve its environmental goals and GHG emissions reduction targets. The City is poised to reap the benefits of a clean energy economy, with policies that can increase the demand for local green jobs.

These are difficult issues that will take a unified approach working with the State of California, County of San Mateo, and local citizens and businesses to achieve the GHG emissions reduction goals. There is a lot that one person can do individually, and Appendix D: 10 Steps to Reduce Your Carbon Footprint of the Plan provides 10 ways individuals can reduce their GHG footprint and help safeguard the environment for future generations.

While creation of the Plan is an important first step, the Plan will remain a living document, to be updated as technology and policies progress, and to support the City's efforts to manage GHG emissions for a sustainable future for all.