



CUPERTINO

CITY OF CUPERTINO CLIMATE ACTION PLAN



JANUARY 2015

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EXECUTIVE SUMMARY

This Climate Action Plan (CAP) defines Cupertino's path toward creating a healthy, livable, and vibrant place for its current and future residents to live, learn, work, and play. The strategies outlined in this CAP seek to not only reduce greenhouse gas emissions, but also provide energy, water, fuel, and cost savings for the City, its community members and businesses, further improving Cupertino's already high quality of life. The plan also represents another example of a successful partnership between engaged community members and City staff to jointly plan for Cupertino's sustainable future and continue to lead by example on important environmental issues.

Cupertino has a rich history of environmental leadership, showcased throughout its operational spectrum including policy adoption (e.g., Mayor’s Climate Protection Agreement, Bay Area [Climate Compact](#), General Plan [Sustainability Element](#)), program design (e.g., city-wide [organics collection](#), [Green@Home](#), [GreenBiz](#)), and infrastructure investment (e.g., Don Burnett Bicycle Pedestrian Bridge, Stevens Creek [Restoration Plan](#) and Project, [streetlight retrofit](#) project). Despite this progress, City leaders driving these efforts recognize that there is more to do to safeguard Cupertino’s natural resources for future use and enjoyment. Specifically, delays in addressing the effects of climate change will accelerate the potential for irreversible damage by depleting nonrenewable resources, harming the shared environment on which we depend and impairing the community we all call home. To address this growth risk, the City of Cupertino worked with our community to develop its first Climate Action Plan (CAP), a strategic document that provides a roadmap for our community and municipal government to accelerate our environmental advancements by strategically working to abate our climate impacts, which arise from local greenhouse gas (GHG) emissions. The CAP builds from the City’s broad past and ongoing environmental efforts and identifies opportunities for additional action to achieve even greater emissions reductions. The CAP also serves to support California’s statewide climate change efforts through identification of actions that can be taken locally, by residents, businesses, and the City itself, to ensure the state’s ambitious reduction goals are achieved. As an incentive for voluntarily taking such bold local action, the CAP can also provide benefits to future development projects within Cupertino through a streamlined environmental review process, allowed as part of the California Environmental Quality Act. Aligned with the community’s vision as defined in its General Plan, the CAP will serve as a blueprint to ensure Cupertino’s long-term quality of life and vitality.

This document seeks to answer a series of questions to more fully inform the City’s emissions reduction efforts and effectively engage the community in this process. It begins with an introduction to the purpose of preparing a Climate Action Plan, details the elements of the City’s Plan, shares linkages with state law, and offers an overview of the City’s current greenhouse gas emissions generated.

Purpose of a CAP

As directed by the City’s General Plan Sustainability Element, the CAP seeks to identify emissions reduction strategies that are informed by the goals, values, and priorities of our community. CAPs prepared in California also typically provide a process through which communities can contribute to the state’s climate protection efforts, recognizing that:

1. cities are the population and business centers where emissions are generated, and
2. local governments can serve as a direct connector to policies, programs, and infrastructure to reduce these emissions at their source.

In partnership with the Santa Clara County Office of Sustainability and the Pacific Gas and Electric Company (PG&E), the City of Cupertino developed this CAP as part of a regional effort to support achievement of five objectives:

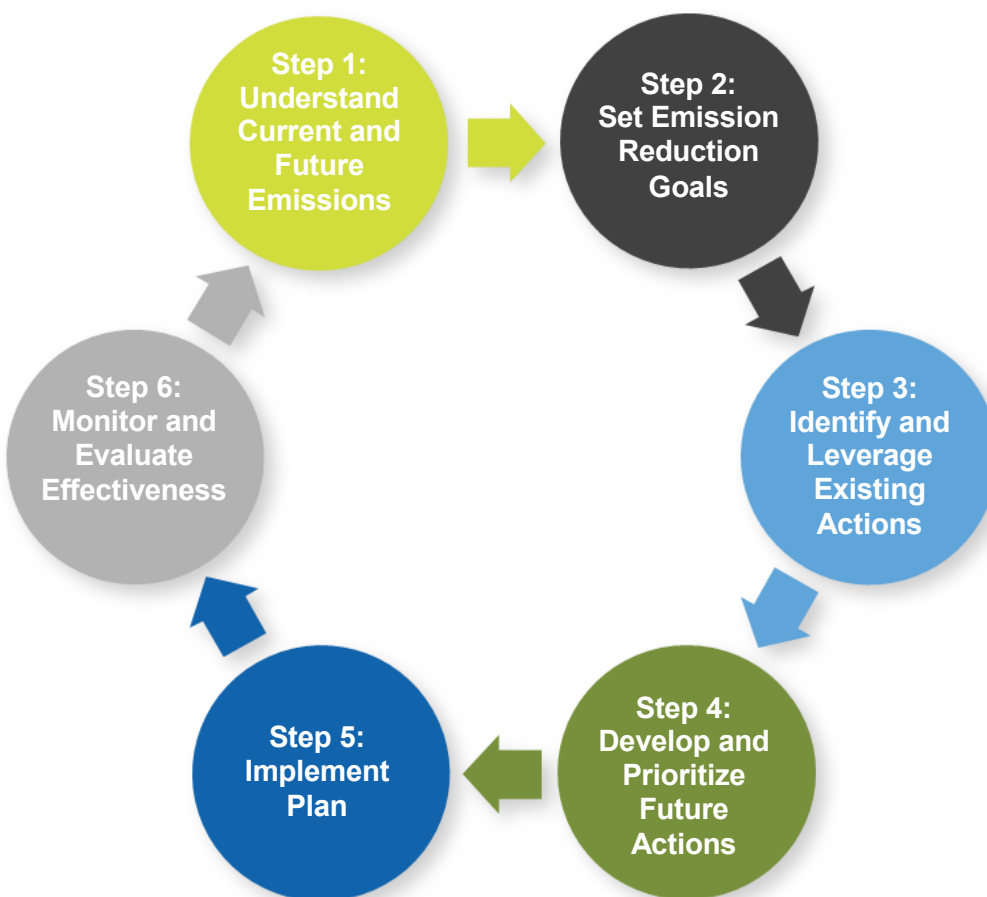
- **To demonstrate environmental leadership** – Cupertino as a community can rise to the difficult challenge of reducing the impact of climate change by defining measurable, reportable, verifiable climate actions to reduce its contribution to local and global GHG emissions that can serve as a model for small cities in the state and nationwide.
- **To save money and promote green jobs** – Residents, businesses, and government can reduce their utility costs through increased energy and water efficiency, and a focus on efficiency can create job opportunities within the community that contribute to protecting our shared environmental resources.
- **To comply with the letter and spirit of state environmental initiatives** – California is taking the lead in tackling climate change while driving new energy markets and fostering new environmental services. As coordination with cities serves as the keystone to achieving statewide greenhouse gas emissions reductions, Cupertino has a responsibility to help the state address emissions sources that arise in our geography and meet its goals to reduce these emissions.
- **To promote sustainable development** – By developing this Climate Action Plan to reinforce General Plan policies and align with the Bay Area Air Quality Management District guidelines, a new class of sustainable development projects, such as mixed use and transit oriented developments, can be fast-tracked (i.e., “streamlined”) through the California Environmental Quality Act (CEQA) review process by not requiring GHG emissions for proposed projects consistent with the CAP.
- **To support regional climate change efforts** – Cupertino developed its CAP through a county-wide effort that established consistency in the local response to the climate change issue, and created a framework to collaborate regionally on implementation of different CAP programs. This partnership elevates the credibility of local climate action planning by allowing transparency, accountability, and comparability of the plans’ actions, performance, and commitments across all participating jurisdictions.

In realizing these CAP-driven goals, the City also hopes to advance actionable ways our community can engage in initiatives that can improve our environment and overall quality of life.

Components of a CAP

A CAP is a tool that many cities in California are using to quantify their share of statewide GHG emissions and establish action steps toward achieving a local emissions reduction target. A CAP provides a set of strategies intended to guide GHG emissions reduction efforts, typically through a combination of statewide and local action. Figure ES.1 illustrates the basic steps of the CAP development process.

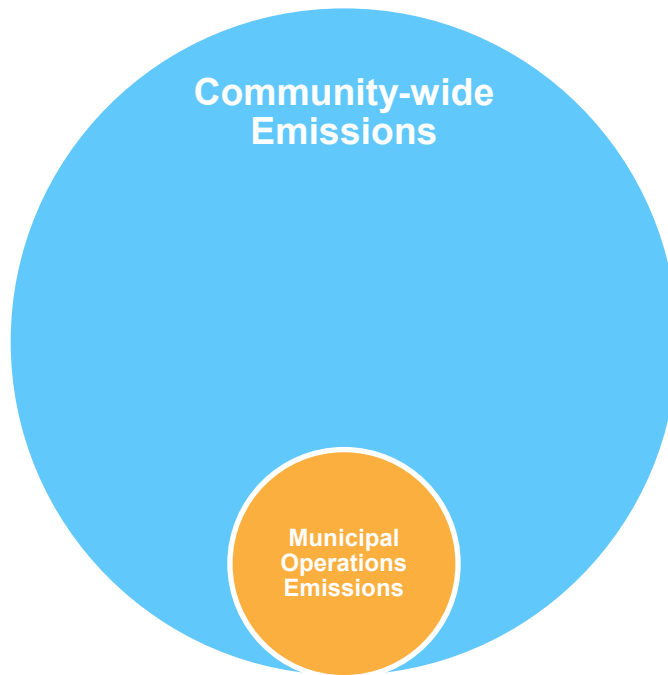
Figure ES.1 – CAP Development Process



COMMUNITY-WIDE AND MUNICIPAL OPERATIONS PERSPECTIVES

Using this CAP development process, the City of Cupertino’s CAP analyzes climate change strategies through two different lenses. The **community-wide** perspective considers the total impact of emissions-generating activities and reduction opportunities within the City’s jurisdictional boundaries. This approach relies upon the participation from residents, businesses, and local government employees to achieve community-wide reduction targets. The **municipal operations** perspective considers only those emissions resulting from the provision of local government services. Reduction strategies associated with municipal operations describe ways for the City to continue to provide a high-level of service to its residents, while more efficiently consuming resources. Municipal operations emissions can be considered a subset of the community-wide emissions, as shown in Figure ES.2, and typically represent 2-5% of total community-wide emissions. In Cupertino, emissions from government activities make up less than 1% of total community-wide emissions. However, development of the municipal operations components of this CAP reinforces the City’s commitment to emissions reductions, and includes strategies that will lay the foundation for deeper reduction opportunities throughout the community.

Figure ES.2 – Relationship of Community-wide and Municipal Operations Emissions



In addition to reducing GHG emissions, many of the strategies included in this plan will also help make Cupertino a more attractive place to live – lowering energy and water bills through conservation, improving bicyclist and pedestrian safety, improving local air quality, and extending the operational life of local landfills through waste diversion activities. Chapters 3 and 4 identify other “co-benefits” associated with the CAP’s measures, beyond their emissions reduction potential.

DOCUMENT CONTENT

This document is structured according to the following seven chapters:

- **Chapter 1 – Climate Change and Cupertino** provides an overview of the CAP and introduces the current state of climate change science, as well as the state’s vision for a lower emissions future.
- **Chapter 2 – Greenhouse Gas Emissions and Targets** describes the components of an emissions inventory, and then presents the community-wide and municipal operations inventories for 2010. It describes the process for forecasting future emissions and presents the community-wide and municipal operations emissions forecasts for years 2020, 2035, and 2050. It concludes with a discussion of the CAP’s emission reduction targets.
- **Chapter 3 – Community-wide Reduction Measures** presents the goals, measures, and actions that can be implemented at the community-wide level to achieve the community’s emissions reduction target for 2020. It also describes a pathway for future

progress towards the 2035 target, outlining the large-scale actions that would need to occur to make that target attainable.

- **Chapter 4 – Municipal Operations Reduction Measures** presents the goals, measures, and actions that can be implemented with regards to the local governments' provision of services in order to achieve the City's reduction target. Similar to Chapter 3, this chapter also considers a pathway towards the City's longer-term targets in 2035 and 2050 in order to continue leading by example.
- **Chapter 5 – Personal Actions** describes the steps that Cupertino's residents, local businesses, and our schools can take starting today to kick-off the implementation phase of the CAP in their own homes, neighborhoods or organizations.
- **Chapter 6 – Adaptation and Resiliency** shares next generation goals for Cupertino's climate agenda, building upon state and regional resources that identify the social, economic, and environmental vulnerabilities that our changing climate presents. It also offers a resilience framework that will enable our community to plan, adapt, and thrive.
- **Chapter 7 – Benchmarks and Next Steps** provides a schedule and framework for CAP implementation, including a description of future inventory updates, measure tracking and revisions, and comprehensive CAP updates.

CAP PREPARATION

The City prepared this CAP as part of a Santa Clara County regional climate mitigation and adaptation initiative named [Silicon Valley 2.0](#) (SV 2.0). As part of this shared effort, the cities of Cupertino, Gilroy, Morgan Hill, Mountain View, San Jose, Saratoga and unincorporated Santa Clara County prepared CAPs to achieve the climate mitigation objectives of the SV 2.0 project. Through this effort, a common list of reduction measures was developed from which individual jurisdictions selected their preferred list. This approach provided a framework for overlapping initiatives regionally to allow collaboration through resource and knowledge sharing when it comes time to implement the plans.

This regional approach also included joint preparation of baseline emissions inventories and forecasts for the purpose of using a consistent methodology and common reduction targets and timelines. This will allow CAP comparisons from one jurisdiction to the next in support of future collaboration opportunities. Early project meetings among the participants also established a local network of colleagues across jurisdictions to build the foundation of this regional collaboration framework.

Cupertino's CAP was also prepared with input from community members, elected officials, and government employees. Two community open house workshops were held to introduce the CAP project and gather public comments on the types of reduction measures it should include and the role that Cupertino should play in contributing to the state's emissions reduction goals. Additional focus group meetings were held with members of the local business community to ensure the CAP was developed in way that would not impair Cupertino's excellent reputation as

a business center. Public study sessions with the Planning Commission and City Council provided further refinement to the collection of measures included in the plan and described in Chapters 3 and 4. Additionally, City employee feedback was collected to accurately represent the City's past programmatic successes in sustainability and focus the CAP on the best opportunities for new or expanded local action. Through this open process Cupertino developed a strategy that has resident, business, and City support, which will help in the transition from the planning phase to CAP implementation.

Relation to the California Environmental Quality Act

One of the considerations for the City in deciding to prepare its Climate Action Plan was the ability to provide future project California Environmental Quality Act (CEQA) streamlining benefits. Local governments may prepare a Plan for Reduction of Greenhouse Gases that is consistent with the state's emission reduction goals as described in Assembly Bill 32. By preparing such a plan, the City can streamline CEQA review of subsequent plans and projects that are consistent with the GHG reduction strategies and targets in the plan (this is often referred to as "streamlining"). To meet the standards of a qualified GHG reduction plan, Cupertino's CAP must achieve the following criteria (which parallel and elaborate upon criteria established in state CEQA Guidelines Section 15183.5[b][1]):

- Complete a baseline emissions inventory and project future emissions
- Identify a community-wide reduction target
- Prepare a CAP to identify strategies and measures to meet the reduction target
- Monitor effectiveness of reduction measures and adapt the plan to changing conditions
- Adopt the CAP in a public process following environmental review

This approach allows jurisdictions to analyze and mitigate the significant effects of GHGs at a programmatic level, by adopting a plan for the reduction of GHG emissions in a public process following environmental review. As part of the implementation process, the City will establish the means by which it will determine consistency of future proposed projects (e.g., development projects, plans, and other actions subject to CEQA review) with the CAP. Later, as individual projects are proposed and found to be consistent with the CAP, project-specific environmental documents may rely on the GHG emissions reductions measures in the CAP to determine that estimated project-level GHG emissions would be less-than-significant in their cumulative impacts analysis.

Emissions Inventories and Forecasts

Baseline inventories of community-wide and municipal operations emissions for 2010 were prepared to serve as the starting point for the CAP's analysis. The baseline inventories were then used to forecast future emissions growth for 2020, 2035, and 2050 under a business-as-

usual (BAU) scenario. This BAU scenario assumes historic trends describing energy and water consumption, travel, and solid waste generation will remain the same in the future. Therefore, emissions forecasts demonstrate what emissions levels are likely to be under a scenario in which no future statewide or local actions are taken to curtail emissions growth (beyond what was already in place as of the 2010 baseline year). BAU emissions forecasts are important because they are used to calculate the amount of emissions reductions necessary to achieve the City’s future reduction targets.

Growth factors for these future scenarios were based upon the General Plan’s estimated growth in population, employment, and vehicle miles traveled under the highest growth scenario. As the CAP and General Plan Amendment development ran in tandem, the CAP was designed to address the highest projected emissions anticipated to arise from future development in the City based on build out of the General Plan’s Land Use diagram. However, if an alternative General Plan scenario is adopted (i.e., a scenario other than the highest growth scenario), the resulting emissions under that build out scenario are expected to be lower than the levels assumed in this CAP, and therefore fewer reductions would be required to achieve the City’s emissions targets.

Table ES.1 shows Cupertino’s community-wide emissions baseline and BAU forecasts by sector for 2010, 2020, 2035, and 2050. Figure ES.3 illustrates this data, showing that the Energy sector is the greatest contributor to the community’s emissions profile, followed by the Transportation sector. Off-Road Sources, Solid Waste, Wastewater, and Potable Water contribute relatively less to the inventory. Cupertino’s community-wide emissions are forecasted to increase by 63% by 2050 (see Figure ES.4), based upon the growth factors utilized for the General Plan as described above.

Table ES.1 Community-wide BAU Emissions (2010 - 2050)				
Emission Sector	2010 Emissions (MT CO₂e/yr)	2020 Emissions (MT CO₂e/yr)	2035 Emissions (MT CO₂e/yr)	2050 Emissions (MT CO₂e/yr)
Energy	169,547	195,535	234,518	273,500
<i>Electricity Subtotal</i>	<i>85,452</i>	<i>100,062</i>	<i>121,977</i>	<i>143,894</i>
Residential	25,427	27,239	29,958	32,677
Commercial	60,025	72,823	92,020	111,217
<i>Natural Gas Subtotal</i>	<i>84,095</i>	<i>95,473</i>	<i>112,540</i>	<i>129,607</i>
Residential	49,986	53,549	58,894	64,238
Commercial	34,109	41,924	53,647	65,369
Transportation	104,112	119,641	142,569	165,371
Off-Road Sources	22,390	27,519	35,214	42,909
Solid Waste	5,403	6,215	7,558	8,714
Wastewater	4,640	5,325	6,318	7,285
Potable Water	1,197	1,374	1,630	1,880
Total	307,288	355,610	427,807	499,659

Source: AECOM 2014

Note: MT CO₂e = metric tons of carbon dioxide equivalent; column sums may not match total shown due to rounding

Figure ES.3 – Community-wide Emissions by Sector - 2010

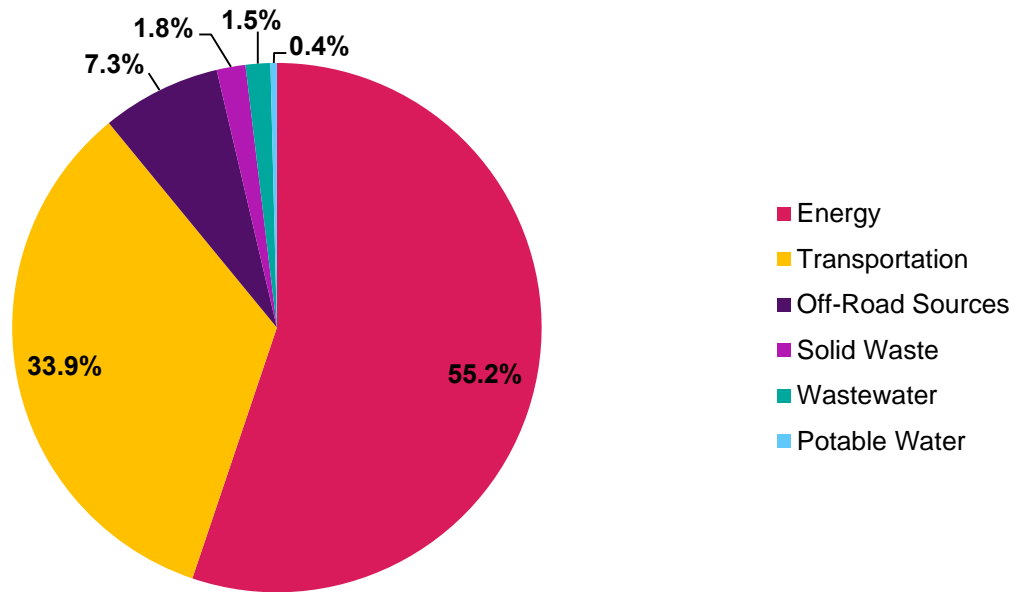


Figure ES.4 – Community-wide Emissions Forecasts by Sector – 2020, 2035, 2050

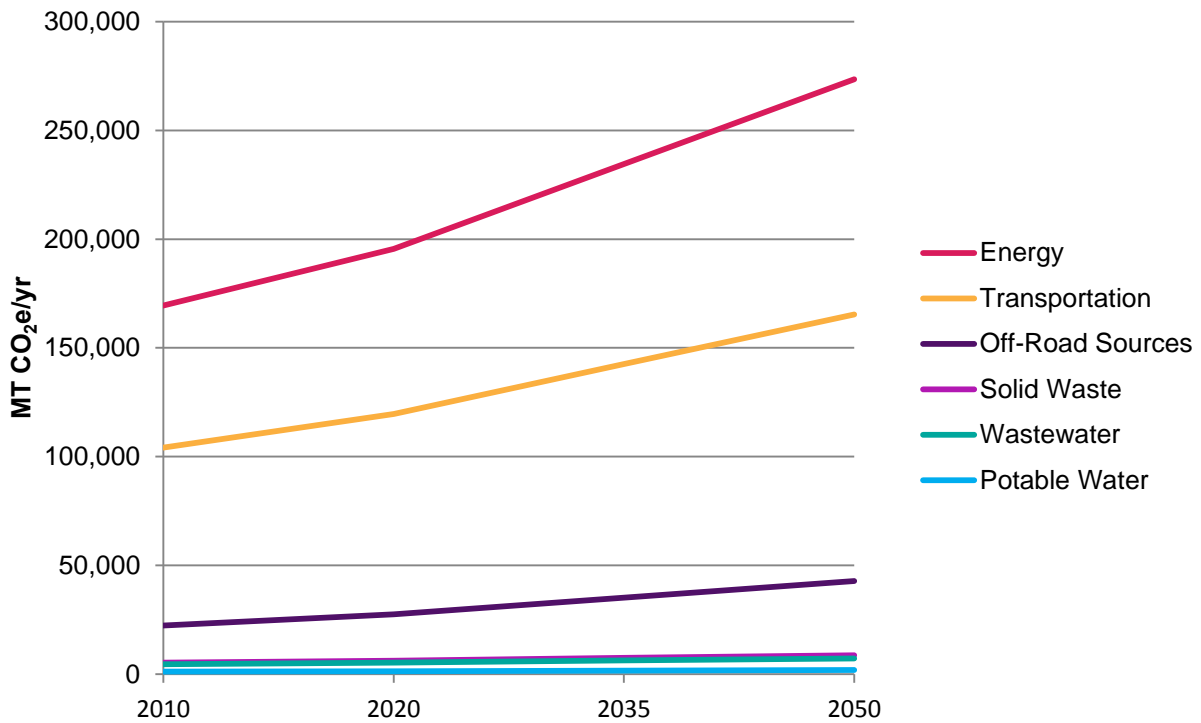


Table ES.2 shows emissions associated with Cupertino’s municipal operations for the same planning years as the community-wide inventory. Figure ES.5 illustrates the municipal operations inventory, showing that the Facilities sector contributes approximately 70% of total emissions, with the City’s Vehicle Fleet contributing another 24%. The remaining emissions come from the Solid Waste and Water Services sector. This mirrors the community-wide inventory with energy-related emissions (i.e., Facilities) and transportation-related emissions (i.e., Vehicle Fleet) contributing the largest share of total emissions. Municipal operations emissions are forecast to increase by 17% by 2050, a much slower rate than shown in the community-wide forecasts, since government services do not increase at a one-to-one ratio with the community’s population and employment growth (see Figure ES.6). Appendix B describes the methodology used to prepare both the community-wide and municipal operations inventories and forecasts.

**Table ES.2
Municipal Operations Business-as-Usual Emissions (2010 - 2050)**

Emission Sector	2010 Emissions (MT CO ₂ e/yr)	2020 Emissions (MT CO ₂ e/yr)	2035 Emissions (MT CO ₂ e/yr)	2050 Emissions (MT CO ₂ e/yr)
Facilities	1,249	1,299	1,370	1,436
Building Energy	837	871	918	962
Public Lighting	412	428	452	473
Vehicle Fleet	424	449	486	521
Solid Waste	95	99	105	110
Water Services	7	7	8	9
Total	1,775	1,855	1,969	2,076

Source: AECOM 2013

Note: MT CO₂e = metric tons of carbon dioxide equivalent; column sums may not match total shown due to rounding

Figure ES.5 – Municipal Operations Emissions by Sector - 2010

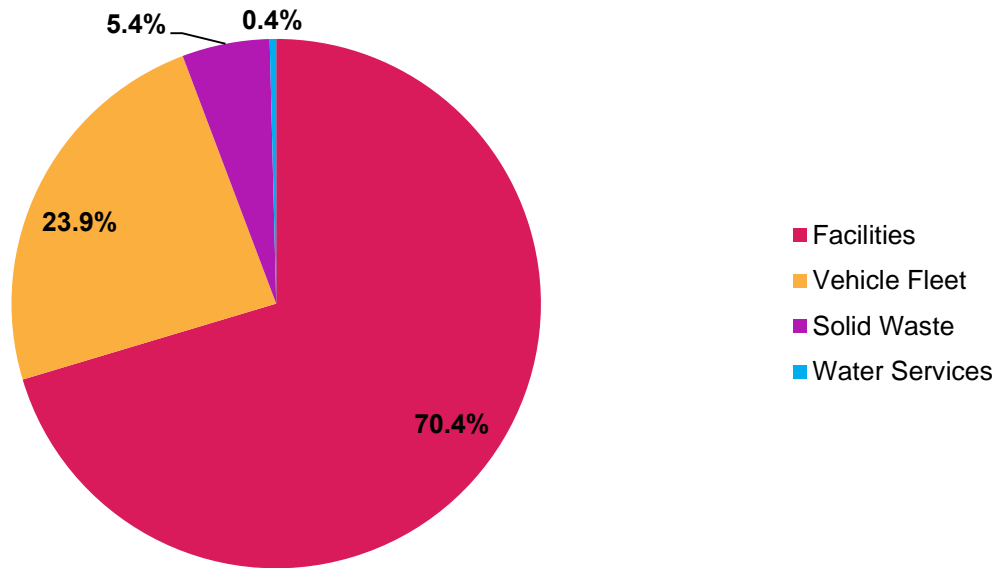
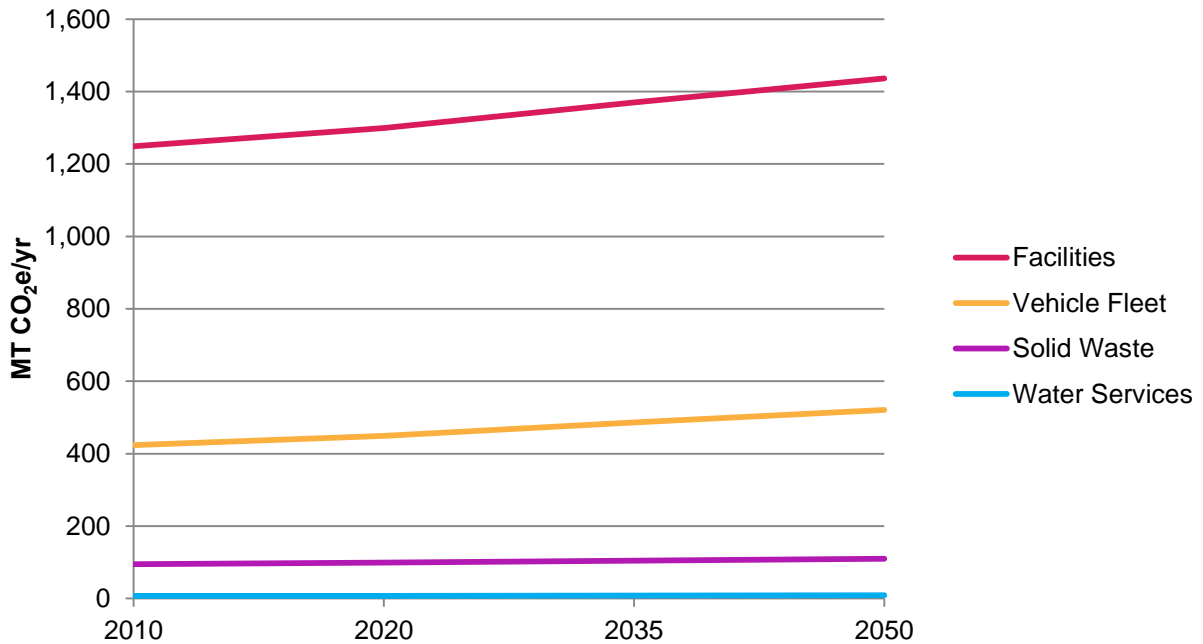


Figure ES.6 – Municipal Operations Emissions Forecasts by Sector – 2020, 2035, 2050



Reduction Targets

The CAP's primary goal is to create a roadmap to reduce greenhouse gas emissions in Cupertino. Setting an emissions reduction target for future years serves as a concrete quantifiable metric to help focus City strategies to that end. The targets selected in this CAP are designed to support statewide emissions reduction efforts and to enable use of recently enacted CEQA streamlining benefits. Much like creating a retirement savings plan for your family, establishing a clear and attainable target can focus and motivate staff and community members to reach these future goals. Targets also help drive long-term strategies and elevate transparency and accountability to achieve the objectives of this CAP.

The state's near-term emissions reduction goal, as defined in Assembly Bill 32, is to return to 1990 levels by 2020. Most local governments do not have baseline inventory data for 1990, so the Air Resources Board and the Bay Area Air Quality Management District have developed guidance suggesting that a reduction of 15% below the CAP's baseline year by 2020 can approximate a return to 1990 levels. Governor Schwarzenegger also signed Executive Order S-3-05, which includes a longer-term target to achieve emissions of 80% below 1990 levels by 2050. To demonstrate consistency with the state's long-range target, this CAP also includes targets for 2050, as well as interim year 2035 targets to serve as a midpoint check-in between 2020 and 2050. Based on the state's 2050 target and the fact that this CAP uses a 2010 baseline year, Cupertino has defined its longer-term targets as 49% below baseline levels by 2035 and 83% below baseline levels by 2050 (see Chapter 2 for further details on the target selection process). Table ES.3 shows the community-wide and municipal operations reduction targets for these three planning years. Figures ES.7 and ES.8 illustrate the community-wide and municipal operations BAU emissions forecasts, respectively, compared to their corresponding reduction targets.

**Table ES.3
Community-wide and Municipal Operations Reduction Targets**

Community-wide Emissions Reduction Targets				
	2010 (MT CO₂e/yr)	2020 (MT CO₂e/yr)	2035 (MT CO₂e/yr)	2050 (MT CO₂e/yr)
BAU Emissions	307,288	355,610	427,807	499,659
Reduction Target	-	15% below 2010 levels	49% below 2010 levels	83% below 2010 levels
	307,288	261,195	156,717	52,239
Reductions Needed	-	94,415	271,090	447,420
Municipal Operations Emissions Reduction Targets				
	2010 (MT CO₂e/yr)	2020 (MT CO₂e/yr)	2035 (MT CO₂e/yr)	2050 (MT CO₂e/yr)
BAU Emissions	1,775	1,855	1,969	2,076
Reduction Target	-	15% below 2010 levels	49% below 2010 levels	83% below 2010 levels
	1,775	1,509	905	302
Reductions Needed	-	346	1,064	1,774

Figure ES.7 – Community-wide BAU Emissions and Targets

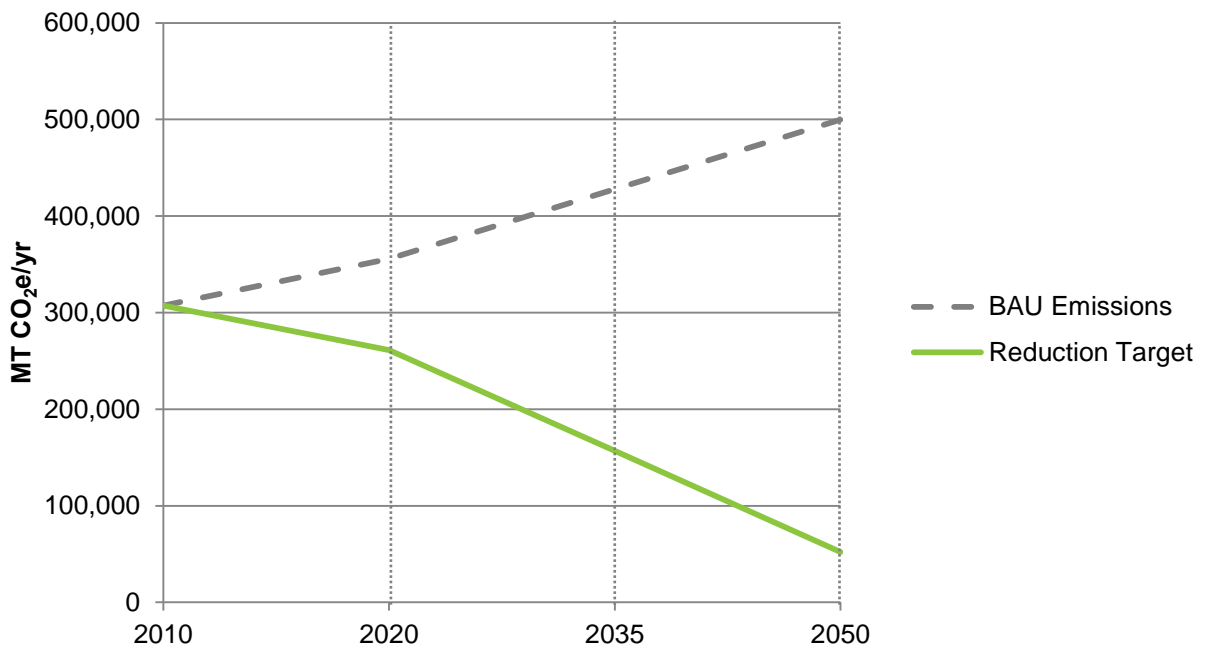
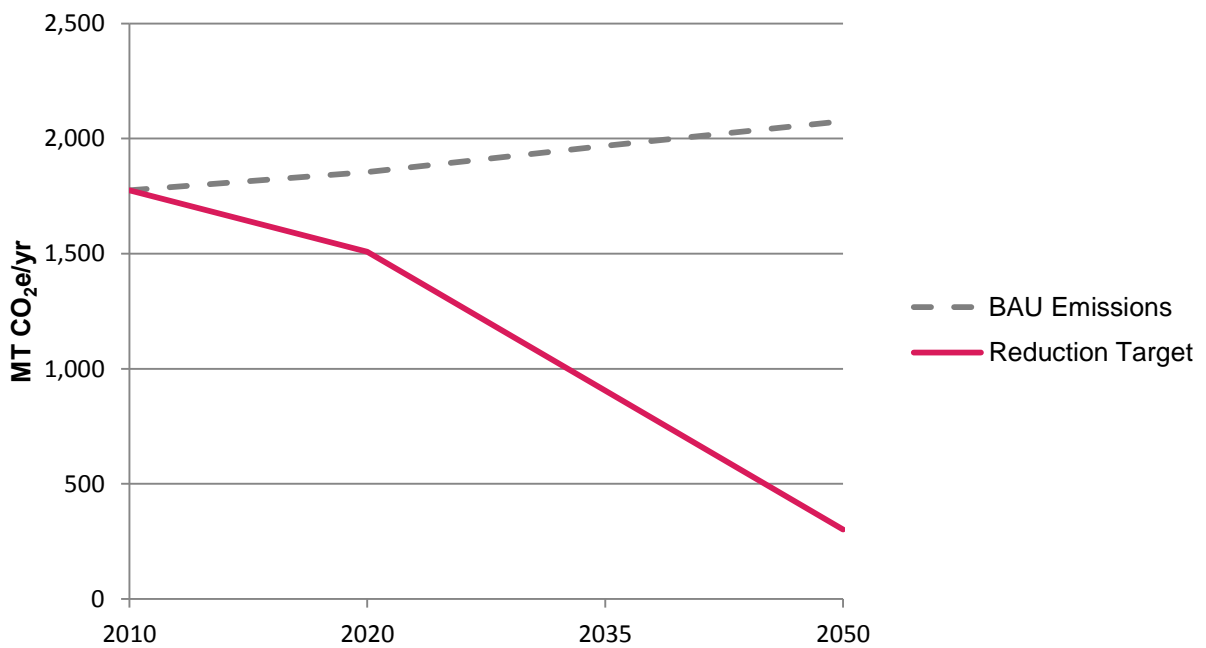


Figure ES.8 – Municipal Operations BAU Emissions and Targets



Greenhouse Gas Emissions Reduction Strategies

Chapters 3 and 4 describe the reduction strategies developed to achieve the City's emissions targets. As the foundation of its CAP approach, the City has identified bold, overarching goals that guide its pursuit of the emissions reduction targets, which include:



Reduce Energy Use / Improve Facilities: recommends ways to increase energy efficiency in existing buildings and increase use of renewable energy community-wide.



Encourage Alternative Transportation / Convert Vehicle Fleet: encourages transit, carpooling, walking, and bicycling as viable transportation modes to decrease the number of single-occupancy vehicle trips within the community, and facilitates a shift towards cleaner, alternative fuel vehicles.



Conserve Potable Water: promotes the efficient use and conservation of water in buildings and landscapes.



Reduce Solid Waste: increases waste diversion through recycling and organics collection, and reducing consumption of materials that will otherwise end up in landfills.



Expand Green Infrastructure: enhances the City's existing urban forest and landscapes on public and private land.

The City's CAP strategies comprise a framework of goals, measures, and actions through which the near-term (i.e., 2020) targets can be achieved, and progress can be made on the longer-term (i.e., 2035, 2050) targets. The reduction strategies are defined by the previously presented goals, which align with different emissions sectors (with the exception of Green Infrastructure which is not an emissions source because carbon dioxide released as a result of the natural carbon cycle (i.e., plant growth, death, and decay) is considered a biogenic emissions source and is not included in emissions inventories). Reduction measures then describe how each goal can be achieved, and actions describe the specific steps to be taken during the implementation process. Figure ES.9 illustrates the hierarchy of goals, measures, and actions, using the municipal operations strategy as an example.

Figure ES.9 – Hierarchy of Goals, Measures, and Actions



EMISSION REDUCTION MEASURES

Chapter 3 describes 20 community-wide reduction measures and their corresponding action steps for implementation. The measures were selected based on existing City programs, policies, or actions to leverage these past efforts and to identify opportunities for expansion or new efforts. Table ES.4 presents a summary of these measures, organized according to their corresponding goal, and presents the 2020 emissions reduction estimates that would result from their implementation. Chapter 3 provides more detail than that summarized in Table ES.4, including how these actions contribute to the City’s longer-term reduction targets. Several measures are described as “Supporting Measures” because no emissions reductions are directly associated with that measure (or cannot be accurately quantified at this time). However, these supporting measures still play an important role in the implementation of other measures and achievement of the City’s reduction targets. For example, programs that share information and provide educational resources on energy efficiency to the public and City staff cannot be accurately quantified as a discrete action. However, increasing knowledge about energy conservation techniques, financing, and success stories is widely believed to be an important driver to increase voluntary participation in such activities. As shown at the bottom of Table ES-4, the combination of CAP measures, statewide actions, and the contribution of municipal operations reductions will allow the City to achieve its 2020 target of 15% emissions reductions below the 2010 baseline level. Chapter 3 provides details of each measure, including:

- descriptions of how it will reduce emissions
- estimates of reduction potential by 2035
- actions steps defining the implementation process
- responsibilities for leading the implementation process
- co-benefits associated with the measure in addition to emissions reductions, and
- progress indicators to allow progress tracking and monitoring.

Chapter 3 also presents a discussion about how these measures can help lay the foundation upon which the City can make progress towards its long-term 2050 target. However, specific 2050 reductions are not estimated in this CAP for each measure due to the numerous variables and assumptions that are required to estimate actions so far into the future.

**Table ES.4
Community-wide Reduction Measures**

Reduction Goals and Measures		2020 Reductions (MT CO ₂ e/yr)
REDUCE ENERGY USE		10,125
C-E-1	Energy Use Data and Analysis	400
C-E-2	Retrofit Financing	8,150
C-E-3	Home & Commercial Building Retrofit Outreach	Supporting Measure
C-E-4	Energy Assurance Plan	Supporting Measure
C-E-5	Community-wide Solar Photovoltaic Development	1,575
C-E-6	Community-wide Solar Hot Water Development	Supporting Measure
C-E-7	Community Choice Energy Option	Supporting Measure
ENCOURAGE ALTERNATIVE TRANSPORTATION		3,775
C-T-1	Bicycle & Pedestrian Environment Enhancements	Supporting Measure
C-T-2	Bikeshare	Supporting Measure
C-T-3	Transportation Demand Management	925
C-T-4	Transit Route Expansion	Supporting Measure
C-T-5	Transit Priority	Supporting Measure
C-T-6	Transit-Oriented Development	Supporting Measure
C-T-7	Communitywide Alternative Fuel Vehicles	2,850
CONSERVE WATER		325
C-W-1	SB-7X-7	325
C-W-2	Recycled Water Irrigation Program	Supporting Measure
REDUCE SOLID WASTE		275
C-SW-1	Zero Waste Goal	Supporting Measure
C-SW-2	Food Scrap and Compostable Paper Diversion	150
C-SW-3	Construction & Demolition Waste Diversion Program	125

**Table ES.4
Community-wide Reduction Measures**

Reduction Goals and Measures	2020 Reductions (MT CO ₂ e/yr)
EXPAND GREEN INFRASTRUCTURE	200
C-G-1 Urban Forest Program	200
STATEWIDE REDUCTIONS	80,261
Renewable Portfolio Standard	34,267
2013 California Building Energy Efficiency Standards	866
AB 1109 – Lighting Efficiency	5,059
Pavley I and II and Low Carbon Fuel Standard	36,535
Vehicle Efficiency Regulations	3,534
MUNICIPAL OPERATIONS REDUCTIONS	700¹
TOTAL COMMUNITY-WIDE REDUCTIONS	95,661
Reductions Needed in 2020	94,415
Emissions Reduction Level Achieved	15.4% below 2010 baseline

1 See Table ES-4 for Municipal Operations reduction measures

Similarly, Chapter 4 presents the goals, measures, and actions that will contribute to the City’s municipal operations reduction targets. Table ES.5 summarizes the 14 proposed measures, (including one statewide measure), and presents their associated GHG emissions reductions anticipated from implementation by the year 2020. As with the community-wide measures, the municipal operations measures are organized according to overarching goals and include two supporting measures that are not quantified. Based on the City’s numerous past efforts to reduce energy use in its facilities, conserve water in landscape irrigation and indoor plumbing use, divert solid waste from landfills, and shift its vehicle fleet towards alternative fuel models, the City is estimated to exceed its 2020 reduction target and achieve reductions of nearly 35% below 2010 levels (assuming these CAP measures are implemented by 2020). This represents significant progress towards the next target year in 2035. Chapter 4 presents the same details for municipal operations measures as described above for the community-wide measures. It also considers what long-term actions would need to occur for the City to achieve its ambitious 2050 reduction target.

**Table ES.5
Municipal Operations Reduction Measures**

Reduction Measures	2020 Reductions (MT CO ₂ e/year)
FACILITIES GOAL	552
M-F-1 Sustainable Energy Portfolio	- ¹
M-F-2 Renewable or Low-Carbon Electricity Generation	108
M-F-3 Advanced Energy Management	91
M-F-4 Existing Building Energy Retrofit	41
M-F-5 New Building Energy Performance	Supporting Measure
M-F-6 Public Realm Lighting Efficiency	125
M-F-7 Landscape Water Conservation	1
Statewide Actions	186 ²
VEHICLE FLEET GOAL	66
M-VF-1 Low Emission and Alternative Fuel Vehicles	48
M-VF-2 Alternative Fuel Infrastructure	Supporting Measure
M-VF-3 Behavior / Fuel Conservation	19
SOLID WASTE GOAL	82
M-SW-1 Waste Reduction	64
M-SW-2 Food Scrap and Compostable Paper Diversion	16
M-SW-3 Construction and Demolition Waste Diversion	2
TOTAL 2020 CAP REDUCTIONS	700
Reductions Needed in 2020	346
Emissions Reduction Level Achieved	34.9% below 2010 baseline

Notes: Columns may not total to values shown due to rounding

¹ Emissions reductions associated with implementation of Measure M-F-1 were omitted from the Facilities Sector subtotal for 2020; See the Measure M-F-1 discussion in Chapter 4 for more information on its role in future target achievement.

² The Renewable Portfolio Standard requires California's utilities to provide 33% of their electricity from renewable sources by 2020. Several CAP measures, if implemented, would result in lower municipal electricity use in 2020 than that estimated in the emissions forecasts shown in Table ES.2. To avoid double-counting the cumulative effects of each measure, this table presents the RPS reductions assuming full implementation of Measures M-F-2 through M-F-7 by 2020. If any of these measures are not fully implemented by 2020, then reductions associated with the RPS would increase as a greater amount of electricity demand would be subject to the effects of this regulation. This table further assumes that Measure M-F-1 is not implemented prior to 2020. If Measure M-F-1 is implemented prior to 2020, then reductions associated with the RPS would decrease based on the level of clean electricity purchased as part of Measure M-F-1.

Additional Considerations

As shown in Tables ES.4 and ES.5, the goals, measures, and actions included within this CAP have been designed to achieve the City's near-term 2020 reduction targets. Chapters 3 and 4 also consider the on-going effects of these measures as compared to the City's longer-term targets. A variety of factors and uncertainties can influence the ability to achieve the 2035 and 2050 targets, including:

- accuracy of emissions forecasts,
- actual population and employment growth within the community,
- development of new emissions-reducing technologies (or, emissions-generating technologies), and
- continued influence of state-level actions related to climate change planning.

This CAP is a living document that needs regular monitoring and updates to ensure the City is making real progress towards its reduction targets in the context of ever-changing social and financial priorities. Though Cupertino already has a long history of leadership in environmental stewardship and sustainability planning, this CAP provides an extension of those past local successes into a space of planetary influence. To that end, this CAP also represents another example of how the community and City government are partnering to ensure the city remains a vibrant, healthy, and attractive community for residents and businesses in the future.