



CITY MANAGER'S OFFICE

CITY HALL
10300 TORRE AVENUE • CUPERTINO, CA 95014-3255
TELEPHONE: (408) 777-3223 • FAX: (408) 777-3366
CUPERTINO.ORG

CITY COUNCIL STUDY SESSION

Meeting: December 1, 2020

Subject

Climate Action Plan 2.0 initial draft goals and vision statement

Recommended Action

Provide input and direction on the Climate Action Plan 2.0 initial draft goals and vision statement

Background

Cupertino's current Climate Action Plan (CAP) was adopted by City Council in 2015 and outlines greenhouse gas (GHG) emission targets and goal areas of reducing energy use, encouraging alternative transportation, conserving potable water, reducing solid waste, and expanding green infrastructure. Since then, new legislation as well as new technology has emerged. For example, the California Air Resource Board (ARB) developed a 2017 Scoping Plan that recommends that local governments use emissions intensity metrics to develop GHG targets for 2030 and beyond, and that local governments define both absolute emissions and emissions intensity targets for their GHG reduction analyses.¹ This guidance also suggests that local governments that had been using a 2020 target and planning horizon should update to targets that are focused on the 2030 and 2050 state goals. In addition, in September 2018, the City Council adopted a Climate Emergency Declaration which directs staff to continue with the aggressive implementation of the CAP goals, policies, and programs, calling for an emergency mobilization effort to end citywide greenhouse gas emissions as quickly as possible and education for residents about climate change.

As part of the Fiscal Year 2020-2021 City Work Program, the City will be updating the CAP, to be known as CAP 2.0, and adding an adaptation planning component. Gaining leadership guidance through considering goals and a vision statement to guide the process is a key component.

¹ California Air Resources Board. The 2017 Climate Change Scoping Plan, page 99

Discussion

The purpose of this study session is to inform the Council on our recent progress, give an overview of the State policies and guidelines driving our update, and a review of recent CAP updates from peer agencies. The City is seeking Council and public feedback for these questions:

- How aggressive or conservative should we set our target date for a carbon neutral Cupertino, relative to the statewide targets?
- What are the vision statements that should guide the technical analysis and public engagement process for the remainder of this project?

The goals and vision statement of the CAP 2.0 will guide the technical analysis and community outreach for the remainder of this fiscal year. Specifically, setting target dates for carbon emissions goals will show alignment with California state targets, as discussed further on in this report.

Further analysis and updates to the Cupertino greenhouse gas forecast is underway to evaluate the cost and impact of the mitigation and adaptation strategies under consideration. CAP targets and goals will be revisited with the Council as necessary when this study has advanced. There are many uncertainties today, getting public and leadership input on these draft targets provides valuable input on direction, urgency, and approach.

Climate Action Plan 2.0: Draft Goals and Vision

The proposed goals and vision statement are outlined below and following sections go into these approaches in greater detail that the Council can consider when providing feedback and valuable local context to the guidance provided by the state. On October 15, 2020, the Sustainability Commission provided input. On November 19, the Commission recommended these goals and vision statement to the Council.

1. Achieve community-wide carbon neutrality no later than the year 2040
2. Achieve negative net carbon emissions after the year 2045
3. Achieve carbon neutrality in city-owned facilities and operations no later than the year 2030
4. Establish a mid-term 2030 carbon emissions target of 50% below a 2010 baseline
5. Establish a Zero Waste Community target date of 2035
6. Adopt the following vision to guide the update process:
 - a. **Equity:** Activate and celebrate the multiracial character of Cupertino. Take every effort to include traditionally under-represented voices and those who might be displaced by climate hazards in the planning and selection of strategies, as well as business, faith groups, neighborhoods, and schools. Create a plan that reflects the diversity of the city and sets us on a path towards a more welcoming and inclusive City.

- b. **Innovation:** Develop measures in short-term and long-term action plans that position Cupertino as a leader in climate innovation and technological development, new ways of working and studying, and commit to educating the community on innovative strategies at least once a year.
- c. **Urgency and Flexibility:** Establish a frequent cadence of updates to the near-term action plans, with the aim to both focus community resources and stay flexible in a fast-moving world. Work with haste commensurate with the Climate Emergency Declaration that Council adopted in 2018 and the unprecedented opportunity that climate and waste plans present to our community by taking bold steps in the early planning horizon.
- d. **Resilience and Adaptation:** Establish climate adaptation measures such as green infrastructure and protecting biodiversity that keeps Cupertino residents and businesses safe, productive, and happy while climate risks accelerate.

Carbon Neutrality and Negative Net Emissions

The proposed goals #1 through 3 relate to Governor Brown's Executive Order (EO) B-55-18, which calls for carbon neutrality by 2045 and for the state to maintain net negative emissions thereafter. This executive order introduces the concept of balancing carbon emissions and carbon sequestration within the state. A carbon-neutral city is defined in the EO as achieving net-zero annual emissions by first reducing emissions as much as possible, then balancing any remaining emissions with removal of carbon dioxide from the air. The Sustainability Commission considered the state-wide goal of a carbon-neutral California by 2045 and recommends that Cupertino adopt a goal of community-wide carbon neutrality by 2040 (5 years in advance of the state goal), negative emissions after 2045 (the same as the state goal), and a carbon-free municipal operation by 2030. The Commission recommended setting an aggressive new carbon goal for City operations to set a positive example for the rest of the community and to generate interest in innovative partnerships.

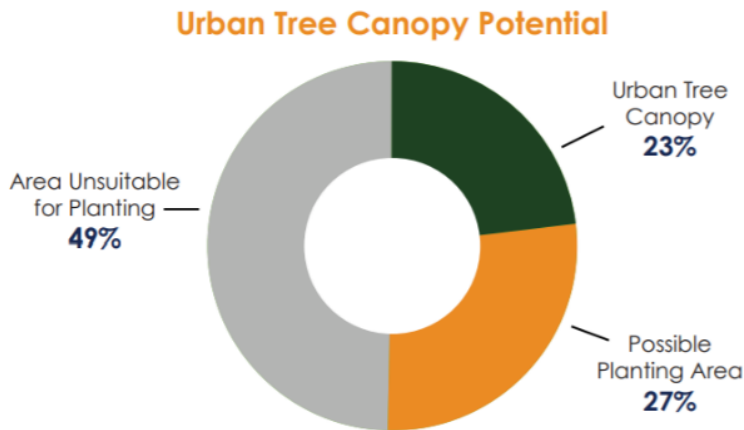
In January 2020, the Lawrence Livermore National Laboratory (LLNL) released a study finding that, not only is carbon neutrality possible, but that California can once again be a global climate leader by demonstrating how to remove significant amounts of CO₂ from the atmosphere.²

Acknowledging that some sources of GHG emissions will be difficult or impossible to decarbonize completely, California needs negative emissions to achieve its goal of carbon neutrality by 2045. Negative emissions involve the removal of CO₂ from the atmosphere through methods such as plants storing CO₂ as biomass or machines concentrating CO₂ for underground storage.

² https://www-gs.llnl.gov/content/assets/docs/energy/Getting_to_Neutral.pdf

During the CAP 2.0 update, the City plans to engage with a technical consultant to understand which strategies Cupertino could pursue. Example strategies to develop negative emissions sources include expanding the urban forest and riparian areas and managing our natural assets as carbon sinks.

As an illustrative example, the Cupertino urban tree canopy study identifies 1,983 acres of additional plantable space. A rough estimate of the negative emissions from doubling the urban tree canopy would remove approximately 6,300 tonnes of CO₂e per year from the air.³



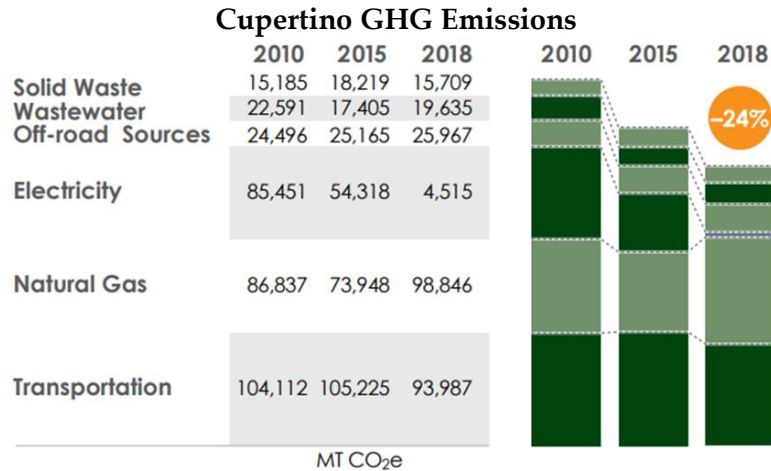
Mountain View and Menlo Park have established carbon-neutrality goals by 2045 and 2030 respectively. Palo Alto also has set a carbon-neutrality strategy which relies in part on purchasing carbon offsets for their natural gas supply. A table of comparison cities is included in Attachment A.

Mid-term 2030 Carbon Emissions Target of 50% Below a 2010 Baseline

The City's 2015 Climate Action Plan has goals of reducing GHGs 15% by 2020, 49% by 2035 and 83% by 2050. These goals were set by aligning with the State Air Resources Board (ARB) guidance from 2008. However, the ARB updated their guidance in 2017 and the proposed CAP 2.0 goal #4 to reduce emissions 50% below 2010 levels by 2030 would be needed to remain in alignment with those updates. As of the 2018 GHG inventory, Cupertino has exceeded the 2020 goal with a 24% reduction, as shown in the following chart. Based on past performance, the 2030 goal appears achievable in Cupertino, however significant changes in technology, land use, and behavior will likely be necessary. Analysis is currently underway to align these figures with ARB guidelines and create a per-capita emissions calculation.⁴

³ Estimated using the Cupertino Tree Grow application. <https://pg-cloud.com/Cupertino/>

⁴ Setting a per-capita emissions calculation is recommended by the 2017 ARB guidelines, and a step in creating a target aligned with both science-based targets and the Paris Agreement. <https://icleiusa.org/localizing-the-paris-agreement/>



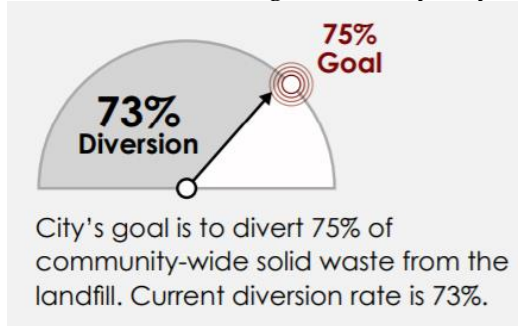
For comparison, the City of San Jose has targeted a 6.5% reduction in emissions each year until 2050. Sunnyvale has a goal to reduce emissions 56% below 1990 levels by 2030. Palo Alto has a goal to reduce emissions 90% below 2005 levels by 2030. Menlo Park set a goal to reduce emissions 90% below 2005 levels by 2030, but due to complications from the COVID-19 pandemic, funding cuts scaled back the needed actions to reach that goal. More examples from other cities can be found in Attachment A.

Current initiatives in our region and large-scale trends will impact Cupertino’s ability to achieve the next emissions reduction targets. Below are some examples of the technology and policy drivers that will impact the next decade of emissions in Cupertino. There are many uncertainties, however it appears the policy in California will remain focused on developing solutions to the next set of challenges for reducing emissions.

- Building Decarbonization Action Plan, from Silicon Valley Clean Energy (SVCE)
- Community-Wide Electrification Streamlining project, from SVCE
- State-wide and regional incentive programs for homeowners and business
- Cupertino’s all-electric code for new construction
- Hydrogen and battery technology and market advances
- The introduction of biofuels into the natural gas pipeline
- The status of PG&E as the investor-owned utility
- New housing developments close to jobs in Cupertino
- Large-scale trends in employee commutes
- Uncertainty in the negative carbon emission sources that can be developed in Cupertino
- Transit services and regional transit connections
- Governor Newsom’s executive orders on zero-emission vehicles and land conservation (October 2020)

Zero Waste Communities

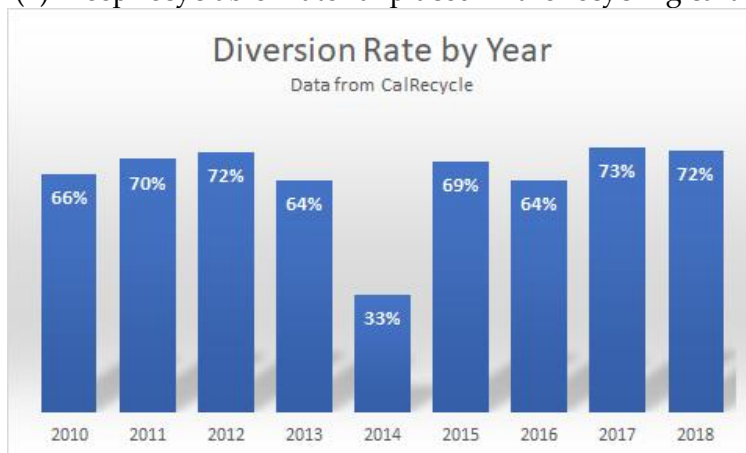
The proposed goal #5 calls for Cupertino to be a Zero Waste Community by 2035. A Zero Waste Community is defined by CalRecycle as one that diverts 90% or more of its waste from landfills and incinerators. Council adopted a Zero Waste Policy in 2017 which states that the City will reach 75% waste reduction by 2025. This goal is reasonable and will give the City 10 years to achieve the remaining 15% reduction.



The City tracks how much Cupertino waste goes to the landfill versus recycling and composting. Methane, a potent GHG, is released when food scraps, paper, and other organic materials rot in a landfill. The City offers organics collection service to divert food, food soiled paper, and yard waste from the landfill and to reduce emissions. In 2018 and 2019, a city-wide waste characterization study found nearly 80% food waste was not being diverted. The results indicated organic food waste was consistently the top material being misplaced. The City is using the results of this study to adjust its programming and outreach efforts.

A recent study by Cascadia Consultants indicated that the greatest opportunity for Cupertino is not for residents to recycle more - they are already recycling nearly as much as is possible - but to:

- (1) Increase the capture rate for compostables, specifically for food scraps and soiled paper; and to a lesser degree
- (2) Keep recyclable material placed in the recycling cart free from contamination.



Cupertino's 2018 CAP progress report shows that the City has achieved a 73% diversion rate based on CalRecycle pounds per person per day, against a goal of 75%. This places

Cupertino is on track to reach the targets set out in the 2017 Zero Waste Policy, and shows that a 2035 goal for Zero Waste is a conservative target that will serve as a guidepost. Some of the uncertainties that were considered include:

- In residences, 90% of currently recyclable materials are already recycled, achieving the last 10% will be difficult.
- Without a feasibility study including statistical evidence, conservative goals are recommended.
- 17% of materials are not currently recyclable. Additional time is necessary for innovative technologies to be proven for hard to manage materials before the City could divert those problem materials.
- Extended producer responsibility policies, which are passed at the state level, can take time to implement.

Equity and Environmental Justice

It is proposed to include equity in the CAP 2.0 vision statement. Equity is when all individuals have access to the opportunities necessary to satisfy their essential needs, advance their well-being and achieve their full potential. We have a shared fate as individuals within a community and communities within society. All communities need the ability to shape their own present and future. Equity is both the means to healthy communities and an end that benefits us all.

Climate equity ensures the just distribution of the benefits of climate protection efforts and alleviates unequal burdens created by climate change. This requires intentional policies and projects that simultaneously address the effects of and the systems that perpetuate both climate change and inequity. Some of the results of structural inequity include a lack of low-carbon, safe transportation options, inefficient or unaffordable housing requiring a super-commute, and the inability to afford healthy food.

Some of the principles of climate equity are below for consideration:

- Create a Community Working Group made up of a diverse group of stakeholders from grassroots groups, business representatives, faith and spiritual communities, and neighborhoods.
- Include in the overall Climate Action Plan vision and vision statement to indicate its importance to consultants and public participants.
- Evaluate each of the strategies in the CAP on whether they help to uplift climate equity and reduce disparities.
- Develop Cupertino-specific climate equity metrics to help track the progress made on these actions and allow Cupertino to report on the targets.

Innovation, Flexibility, and Urgency

It is proposed to include statements of innovation in the CAP 2.0 vision statement. Innovation is a clear goal of the City. Education, innovation, and collaboration are the

hallmarks nourished by the City government, the community, and businesses. Innovation implies that the CAP 2.0 process will study leading-edge strategies and solutions to climate actions that can serve as case studies to advance these methods outside of the City boundaries.

Statements of flexibility and urgency in the vision statement give direction to seek out high-impact measures in the short term, understanding that certain policies will have an impact only over time and can avoid risks and higher costs later. Urgency is meant to link the CAP 2.0 process to the 2018 Climate Emergency Declaration which establishes a clear direction from the City Council to act with speed necessary to the challenge. Flexibility would also give direction to plan for a shorter time between CAP updates to allow for changes. A three-year action plan is the most reasonable time frame for budgeting and focusing on high-impact policy and re-evaluating the list of long-term measures at a regular interval to allow for flexibility to pivot or adapt.

Resilience and Adaptation

It is proposed to include resilience and quality of life in the CAP 2.0 vision statement as it is a key component in adaptation planning. Climate adaptation planning implies that Cupertino has recognized that risks to the City are already present from climate hazards, such as increased hot days and other extreme events such as drought and flood risk. A regional climate hazards analysis has been completed by the County of Santa Clara known as the Silicon Valley 2.0 tool.

Adaptation is defined in the field of practice broadly by fostering resilience to extreme hazards and changing seasonal patterns exacerbated by climate change, reducing long-term risk of damage/loss from an event, and developing robust emergency management plans and resources.

During the adaptation planning process, the City proposes to study which climate risks Cupertino is faced with and identify strategies to respond to these vulnerabilities and increase resilience. Adaptation planning requires collaboration with the City and County emergency operations professionals and requires a consideration of community safety in the context of climate challenges. Reduction of risk is a far more complex undertaking than reducing emissions as these challenges are interconnected with systems of economy, healthcare, education, transit, and others, as well as the structural inequities present in these systems. Ultimately, no one strategy will undo these challenges, but the implementation of multi-faceted strategies may set Cupertino on the right path.

Below are some proposed objectives of climate adaptation planning for consideration:

- Maintain low levels of heat-related illness and death.
- Reduce wildfire and smoke impacts.

- Maintain electricity reliability and affordability through energy conservation, efficiency, and independence.
- Maintain potable water reliability and affordability through water conservation, efficiency, and independence.
- Demonstrate sustainable resource leadership.
- Institutionalize climate adaptation as a citywide priority.
- Develop regional, state, national, and private climate adaptation partnerships.

Next Steps

The following timeline is proposed for the remainder of the CAP 2.0 and Zero Waste Planning process for consideration and input. The current Work Program item to create CAP 2.0 was split into two phases in order to accommodate budget uncertainties and a Phase 2 is included in the timeline.

Fall 2020	Winter 2020/21	Winter - Spring 2021	Summer - Fall 2021
Commission discussions on goals and vision	Develop 2019 GHG forecast and per-capita emissions rates	Public outreach and engagement events	Draft CAP document for public review
Contract with a consultant to support public engagement	Revisit targets and goals with CARB guidelines as needed	Select and prioritize strategies and measures for CAP 2.0	Council adopts CAP 2.0 and Zero Waste plan
Council study session on CAP goals and vision statement	Subcommittee approves public outreach plan and schedules community events	Present draft 3-year action plan to Sustainability Commission and Council	Begin incorporating into City long-range plans, e.g. updates to General Plan Safety Element
		Develop budget and resources request for phase two of CAP update	
		Develop vulnerability and climate hazard assessments	

Sustainability Impact

As described above, setting these targets would set a trajectory for significant carbon reduction activity in order to achieve carbon-neutrality by 2045. In addition, the zero waste goals will improve waste reduction.

Fiscal Impact

The specific fiscal impacts of these goals will be studied throughout the CAP 2.0 update process and will more fully understood once goals are established and measures to achieve those goals are outlined.

Prepared by: Andre Duurvoort, Sustainability Division Manager
Victoria Morin, Environmental Programs Outreach Coordinator

Reviewed by: Katy Nomura, Assistant to the City Manager
Dianne Thompson, Assistant City Manager

Attachments:

A – Carbon Neutrality, Interim Target, and Zero Waste Goals from Comparison Cities