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SUSTAINABILITY COMMISSION STAFF REPORT

Meeting: October 15, 2020

Subject

Climate Action Plan 2.0 initial draft goals and vision statement

Recommended Action

Make a recommendation to Council on Climate Action Plan 2.0 initial draft goals and vision statement and provide any feedback

Background

Cupertino's current Climate Action Plan (CAP) was adopted by City Council in 2015 and it 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 Aligning with these methods is consistent with the Paris Agreement. 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, educate residents about climate change, and work to advocate for a mass mobilization effort at the local, state, national, and global level.

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. To achieve this, the City will conduct a 5-step update process and are currently at Step 0, gaining leadership commitment through considering goals and a vision statement to guide the process.

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



Source: www.californiaseec.org

Discussion

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 of the greenhouse gas inventory and forecast is underway and may result in revised targets as the process unfolds. For example, the COVID-19 pandemic might cause changes in the underlying assumptions of population growth and economic activity which would require another look at targets to stay in alignment with state guidelines. Another example is if the City would like the CAP to provide a streamlined way for developers to comply with CEQA for their projects, in which case some legal review would be needed of the targets. However, while there are many uncertainties today, getting public and leadership input on these draft targets provides valuable input on direction, urgency, and approach.

The proposed goals and vision statement are outlined below:

Climate Action Plan 2.0: Draft Goals and Vision

1. Achieve city-wide carbon neutrality no later than the year 2045
2. Achieve negative net carbon emissions after the year 2045
3. Establish a mid-term 2030 carbon emissions target of 50% below a 2010 baseline
4. Establish a Zero Waste Community target date of 2035
5. Adopt the following vision to guide the update process:
 - a. Equity: Activate and celebrate the diversity of Cupertino. Take every effort to include traditionally under-represented voices in the planning and selection of strategies, as well as business, faith groups, neighborhoods, and schools. Create a plan that ensures the benefits and

opportunities are available to all, and that climate risks are not borne disproportionately by people of color.

- b. Innovation: Develop measures in the 3-year and long-term action plans that position Cupertino as a leader in climate innovation and technological development.
- c. Urgency and Flexibility: Establish a cadence of three-year 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 that keep Cupertino residents and businesses safe, productive, and happy while climate risks accelerate.

The following sections go into these approaches in greater detail that the Commission can consider when providing feedback and valuable local context to the guidance provided by the state.

Carbon Neutrality and Negative Net Emissions

The proposed goals #1 and #2 align with 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.

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

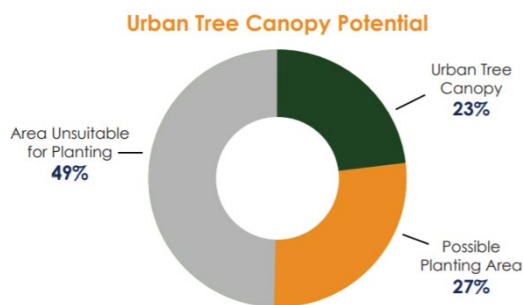
"Our findings give us confidence that this combination of negative emissions technologies and the state's existing ambitions put the finish line in reach for California. The report's findings also indicate we could become carbon neutral sooner than anticipated, at a cost less than expected, while boosting California's economy ... Important co-benefits to air quality and wildfire prevention also will bring welcome relief to our state." - Roger Aines, LLNL's Energy Program Chief Scientist

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

Acknowledging that some sources of GHG emissions will be difficult or impossible to decarbonize completely, California needs negative emissions, removal of CO₂ from the atmosphere, to achieve its goal of carbon neutrality by 2045. Existing methods include natural solutions, like plants to remove and store this CO₂ as biomass or machines to remove and concentrate CO₂ for underground storage.

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



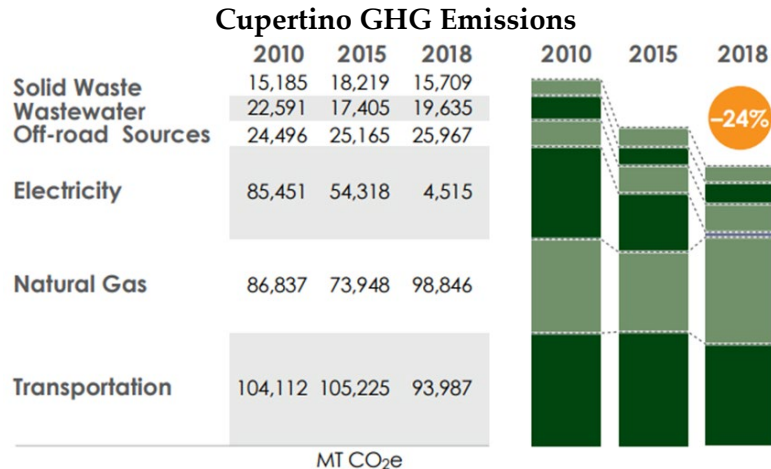
Mountain View and Menlo Park have established carbon-neutrality goals by 2045 and 2030 respectively. Palo Alto also has set a carbon-neutrality strategy which relies in part on purchasing carbon offsets for their natural gas supply. A table of comparison cities is included in Attachment A.

Reducing Greenhouse Gas Emissions

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. As of the 2018 GHG inventory, Cupertino has exceeded the 2020 goal with a 24% reduction, as shown in the following chart. The proposed CAP 2.0 goal #3 accelerates the existing timeline, by setting a new goal reducing emissions 50% by 2030, again noting that 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://iclei.usa.org/localizing-the-paris-agreement/>



The progress in reducing carbon emissions from 2010-2018 shows a run-rate of approximately 3% decrease in emissions each year. However, emissions reductions have not occurred steadily, but rather in large steps, closely correlated with the carbon content of the electricity grid. Further step changes in current technology and behavior will likely be necessary to achieve a carbon neutral city.

An interim target date for a 50% emissions reduction by 2030 is achievable in Cupertino with the existing run-rate of 3% emissions reductions each year. For comparison, the City of San Jose has targeted a 6.5% reduction in emissions each year until 2050, however has not set a carbon neutrality target date. In another example, Menlo Park in June 2020 adopted a carbon neutral goal by 2030, however complications due to COVID-19 pandemic caused the leadership to scale back the action plan to approximately 40% of the needed emissions reduction actions.⁵

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 for 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.

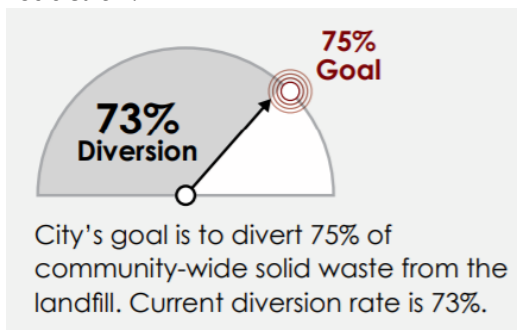
- Building Decarbonization Action Plan, from Silicon Valley Clean Energy (SVCE)
- Community-Wide Electrification Streamlining project, from SVCE
- State-wide and regional incentive programs for homeowners and business
- Cupertino's all-electric code for new construction
- Hydrogen and battery technology 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

⁵ <https://www.menlopark.org/ArchiveCenter/ViewFile/Item/11486>

- 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)

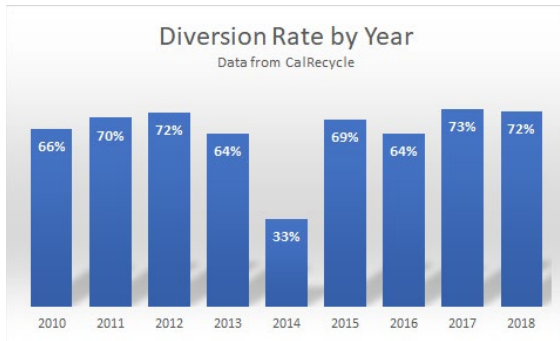
Zero Waste Communities

The proposed goal #4 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. The Cupertino City 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's Environmental Services team 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 reduce emissions. In 2018 and 2019, Environmental Services conducted a city-wide waste characterization study and found that nearly 80% food waste was not being diverted. The results indicated organic food waste is consistently the top material that is misplaced. The City is using the results of this study to adjust its programming and outreach efforts.

A recent study by Cascadia Consultants indicates 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 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 in reach of achieving the targets set out in the 2017 Zero Waste Policy and a 2035 goal for Zero Waste is a conservative target that will serve as a guidepost.

Some of the uncertainties of achieving a Zero Waste Cupertino 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 new technology to be invented and 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
- 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. 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 Sustainability Division proposes the following timeline for the remainder of the CAP 2.0 and Zero Waste Planning process for consideration and input:

Draft Timeline of Sustainability Plan Updates

| Autumn 2020 | Winter 2020/21 | Winter - Spring 2021 | Summer - Autumn 2021 |
|---|--|---|--|
| Form planning committee | Develop 2019 GHG inventory, forecast, and per-capita emissions rates | Public outreach and engagement events | Draft CAP document for public review |
| Provide feedback on goals and vision statement | Align targets with CARB guidelines as needed | Present draft 3-year action plan to commission | Council adopt CAP 2.0 and Zero Waste plan |
| Hire a consultant to support public engagement | Agree on public outreach plan and schedule community events | Develop budget and resources request for phase 2 of CAP update | Begin incorporating into City long-range plans, e.g. updates to General Plan or Safety Element |
| Council study session on CAP goals and vision statement | | Present vulnerability and climate hazard assessment draft results | |

Sustainability Impact

As described above, setting these targets would set a trajectory for significant carbon reductions 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.

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Attachments:

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