



COUNCIL SUSTAINABILITY COMMITTEE

AGENDA

NOTICE AND AGENDA

SPECIAL MEETING – WEDNESDAY, JUNE 22, 2022
VIRTUAL MEETING WITH NO PHYSICAL MEETING LOCATION
6:30 P.M.

During this declared State of Emergency, this meeting will be conducted in accordance with California Government Code Section 54953(e), as authorized by resolution of the City Council. Please contact city.clerk@mountainview.gov to obtain a copy of the applicable resolution. All members of the Council Sustainability Committee will participate in the meeting by video conference, with no physical meeting location. Members of the public wishing to observe the live meeting may do so at <https://mountainview.gov/meeting> or <https://mountainview.legistar.com>.

Members of the public wishing to comment on an item on the agenda may do so in the following ways:

1. Email comments to sustainability@mountainview.gov by 4:00 p.m. on the meeting date. Emails will be received directly by the Council Sustainability Committee. Please identify the Agenda Item number in the subject line of your email.
2. Provide oral public comments during the meeting.
 - Online: You may join the Zoom Webinar using this link: <https://mountainview.gov/meeting> and entering Webinar ID: 894 6337 7133. You may be asked to enter an email address and a name. Your email address will not be disclosed to the public.

When the Chair announces the item on which you wish to speak, click the “raise hand” feature in Zoom. Speakers will be notified of their turn shortly before they are called on to speak.

- By phone: Dial: 669-900-9128 and enter Webinar ID: 894 6337 7133. When the Chair announces the item on which you wish to speak, dial *9. Phone participants will be called on by the last two digits of their phone number. When the Chair calls your name to provide public comment, if you are participating via phone, please press *6 to unmute yourself.

For instructions on using the “raise hand” feature in Zoom, visit https://mountainview.gov/raise_hand. When called to speak, please limit your comments to the time allotted (up to three minutes, at the discretion of the Chair).

1. **CALL TO ORDER**

2. **ROLL CALL**

Committee members Margaret Abe-Koga, Pat Showalter, and Chair Alison Hicks.

3. **MINUTES APPROVAL**

Minutes for the April 19, 2022 meeting have been delivered to Committee members and copies posted on the City Hall bulletin board. If there are no corrections or additions, a motion is in order to approve these minutes.

4. **ORAL COMMUNICATIONS FROM THE PUBLIC**

This portion of the meeting is reserved for persons wishing to address the Committee on any matter not on the agenda. Speakers are limited to up to three minutes. State law prohibits the Committee from acting on nonagenda items.

5. **UNFINISHED BUSINESS—None.**

6. **NEW BUSINESS**

6.1 **POSTPANDEMIC TRAVEL PATTERNS AND OPPORTUNITIES**

Update on return to in-person work travel patterns and opportunities for making sustainable transportation options more attractive.

6.2 **SEA LEVEL RISE COLLABORATION**

Overview of opportunities to increase collaboration with neighboring public agencies on sea level rise resiliency.

6.3 **CARBON-NEUTRAL TARGET DATE**

Recommendation to further scope 2035 as the possible accelerated carbon neutrality target year for the City of Mountain View.

7. **COMMITTEE/STAFF COMMENTS, QUESTIONS, COMMITTEE REPORTS**

No action will be taken on any questions raised by the Committee at this time.

8. **ADJOURNMENT**

AGENDAS FOR BOARDS, COMMISSIONS, AND COMMITTEES

- The specific location of each meeting is noted on the notice and agenda for each meeting which is posted at least 72 hours in advance of the meeting. Special Meetings may be called as necessary by the Committee Chair and noticed at least 24 hours in advance of the meeting.
- Questions and comments regarding the agenda may be directed to the Sustainability Division of the City Manager’s Office at 650-903-6301.
- Interested persons may review the agenda and staff reports at the City Clerk’s Office before each regular meeting. A copy can be mailed to you upon request. Staff reports are also available during each meeting.
- **SPECIAL NOTICE—Reference: Americans with Disabilities Act, 1990**
Anyone who is planning to attend a meeting who is visually or hearing-impaired or has any disability that needs special assistance should call the City Manager’s Office at 650-903-6301 48 hours in advance of the meeting to arrange for assistance. Upon request by a person with a disability, agendas and writings distributed during the meeting that are public records will be made available in the appropriate alternative format.
- The Board, Commission, or Committee may take action on any matter noticed herein in any manner deemed appropriate by the Board, Commission, or Committee. Their consideration of the matters noticed herein is not limited by the recommendations indicated herein.
- **SPECIAL NOTICE—**Any writings or documents provided to a majority of the Council Sustainability Committee regarding any item on this agenda will be made available for public inspection in the City Clerk’s Office, located at 500 Castro Street, during normal business hours and at the meeting location noted on the agenda during the meeting.

ADDRESSING THE BOARD, COMMISSION, OR COMMITTEE

- Interested persons are entitled to speak on any item on the agenda and should make their interest known to the Chair.
- Anyone wishing to address the Board, Commission, or Committee on a nonagenda item may do so during the “Oral Communications” part of the agenda. Speakers are allowed to speak one time on any number of topics for up to three minutes.



COUNCIL SUSTAINABILITY COMMITTEE

MINUTES

SPECIAL MEETING—TUESDAY, APRIL 19, 2022
VIRTUAL MEETING WITH NO PHYSICAL MEETING LOCATION
6:30 P.M.

1. CALL TO ORDER

The meeting was called to order at 6:31 p.m. by Chair Hicks.

2. ROLL CALL

Present: Committee member Patricia Showalter and Chair Alison Hicks.

Absent: Committee member Margaret Abe-Koga (joined the meeting at 6:36 p.m.).

3. MINUTES APPROVAL

Motion—M/S Showalter/Hicks—Carried 2-0-1; Abe-Koga absent—To approve the minutes of the December 1, 2021 meeting.

4. ORAL COMMUNICATIONS FROM THE PUBLIC

Bruce England commented that the City is currently developing or updating three plans that impact sustainability: Active Transportation Plan, Community Tree Master Plan, and Parks and Open Space Plan. Staff should collaborate across the organization as these plans are developed/updated.

Committee Member Abe-Koga joined the meeting at 6:36 p.m.

Kevin Ma commented that the agenda and reports were posted just 24 hours before the meeting.

Hala Alshahwany congratulated the City for implementing the Environmental Sustainability Task Force 2 recommendation of hiring a Chief Sustainability and Resiliency Officer, and encouraged the City to increase tree canopy, preserve Heritage trees, and create a process for community participation as part of the Community Tree Master Plan update.

Bruce Naegel encouraged the Committee to hold regularly scheduled, more frequent meetings.

5. **UNFINISHED BUSINESS**—None.

6. **NEW BUSINESS**

6.1 **REACH CODES UPDATE**

Assistant City Manager/Community Development Director Aarti Shrivastava presented on the adoption and implementation of the 2020 Reach Codes, and the preparation currently under way for the 2023 State Building Code updates and 2023 Reach Code updates cycle. Aarti Shrivastava and Chief Building Official Nena Bizjak responded to the Committee's questions.

Speaking from the floor in support and/or with recommendations:

- Mary Dateo
- Bruce Naegel
- Hala Alshahwany
- Kevin Ma
- Bruce England
- Holger Isenberg
- James Kempf

6.2 **CARBON-NEUTRAL TARGET DATE**

Chief Sustainability and Resiliency Officer Danielle Lee presented on the opportunities, strategies, and implications of accelerating the City's target date for carbon neutrality from 2045 to an earlier date. Danielle Lee, Assistant City Manager/Chief Operating Officer Audrey Seymour Ramberg, and Sustainability Coordinator Steve Attinger responded to the Committee's questions.

Speaking from the floor in support and/or with recommendations:

- Bruce Karney
- Rebecca Young
- Hala Alshahwany
- Bruce Naegel
- Mary Dateo
- Kevin Ma
- Holger Isenberg

The Committee discussed this item.

7. **COMMITTEE/STAFF COMMENTS, QUESTIONS, COMMITTEE REPORTS**

Committee member Pat Showalter commented on the opportunity to participate in a Sister City program to collaborate on carbon offset projects.

8. **ADJOURNMENT**

The meeting was adjourned at 8:33 p.m.

DL/1/MGR

622-04-19-22mn

DATE: June 22, 2022

TO: Council Sustainability Committee

FROM: Danielle Lee, Chief Sustainability and Resiliency Officer
Lisa Au, Assistant Public Works Director

SUBJECT: **Sea Level Rise Collaboration**

PURPOSE

This memorandum presents an overview of efforts under way and opportunities for the City of Mountain View to increase coordination and collaboration with neighboring public agencies at the policy and staff level to enhance sea level rise resiliency.

RECOMMENDATION

Direct staff to continue development of collaboration with the Valley Water, County of Santa Clara, and neighboring jurisdictions to increase awareness of and preparedness, coordination, and resources for sea level rise.

BACKGROUND

The Bay Area is extremely vulnerable to rising seas. Although sea level rise has been gradual until now, by 2040, sea level rise is expected to accelerate. Over time, homes, jobs, habitats, and safety will be impacted. By 2060, the Bay Conservation and Development Commission (BCDC) projects the following could be impacted by flooding in the Bay Area: 28,000 socially vulnerable residents; 104,000 existing jobs and 85,000 new jobs; 20,000 acres of wetlands, lagoons, and tidal marsh habitat; 5 million daily highway vehicle trips; and 60,000 daily rail commuters.

The City of Mountain View is one of the communities impacted by sea level rise within the Bay Area. Mountain View is susceptible to fluvial (river or creek) flooding from watershed runoff and coastal flooding from high tide and waves from the San Francisco Bay. The projected climate change and sea level rise in the San Francisco Bay will increase the San Francisco Bay water level and coastal flood risk to the low-lying areas north of U.S. 101 in the North Bayshore Area. Based on the California Ocean Protection Council's 2018 projections, in June 2021, the City adopted the high sea level rise scenario for sea level rise adaptation planning purposes where the sea level is expected to rise 42" by year 2070.

DISCUSSION

Sea Level Rise Efforts in Mountain View

As reported to the Council Sustainability Committee on December 1, 2021, City staff prepared a Sea Level Rise Study Update in 2021 and recommended 14 capital projects to prepare the City to adapt to the future sea level rise. The cost estimate for the projects is \$122 million in year-of-construction dollars over the next 10 years. The following are updates to the sea level rise projects since December 2021:

1. **Sailing Lake Access Road Improvement**. This project is completed and made improvements to the Sailing Lake Access Road located between the Sailing Lake and the Coast-Casey Forebay. The project improved the safety and reliability of the Sailing Lake, provided reliable operations and maintenance access, and fortified the road to support the anticipated soil transport for the South Bay Salt Pond Restoration Project at Pond A1.
2. **South Bay Salt Pond Restoration Project**. This is a U.S. Fish and Wildlife Service and State of California State Coastal Commission project, which will restore Pond A1 and Pond A2W to tidal marshes and reestablish tidal flow connections with South San Francisco Bay by breaching segments of outboard levees. The proposed gently sloped Habitat Transition Zone will reduce erosion risk along the City shoreline, which is a vulnerability under anticipated sea level rise conditions. Soil hauling for Pond A2W started in spring 2022 and is ongoing.
3. **North Landfill Erosion Protection**. This project will use the habitat transition zone that will be established along Pond A2W and Pond A1, as part of the South Bay Salt Pond Restoration Project, as a base for the City to continue building up the levee north of the landfill for sea level rise protection. The City has hired a consultant to prepare the project design, and design work is under way.
4. **Lower Stevens Creek Levee Improvements**. With the updated sea level rise design criteria, the levee will require additional improvements to meet both the freeboard requirements and stability and seepage criteria. As defined by the Federal Emergency Management Agency (FEMA), "freeboard" is a factor of safety usually expressed in feet above a flood level. "Freeboard" compensates for the many unknown factors that could contribute to flood heights greater than the height calculated, such as wave action, bridge openings, and urbanization of the watershed. City staff has met with Valley Water staff to update them on the status of the project, which is currently at 30% design completion, and discuss how the two agencies may collaborate to complete the design and construction of the project.

Broader Collaborative Efforts

Although much of the responsibility to adapt to the rising bay falls to the individual cities that are impacted, local efforts alone will not be able to solve the problem. Coordination and collaboration with our neighboring cities to increase awareness, jointly plan, and advocate for regional, State, and Federal action and funding will allow us to address the varied impacts of climate change most effectively.

At the December 1, 2021 Council Sustainability Committee (CSC) meeting, an interest was expressed to explore ways to increase collaboration amongst agencies, including both staff and elected policy-makers, in support of a coordinated response to sea level rise. Since that time, staff has conducted research and outreach regarding existing and emerging collaborations seeking to identify options for strengthening the opportunities for sharing information, raising awareness, coordinating efforts, and advocating for State and Federal funding. At the April 19, 2022 CSC meeting, staff gave a brief verbal update on this effort and committed to bringing a full update back to the CSC at the next meeting.

Staff identified many examples of collaborative efforts addressing complex challenges, such as sea level rise across multiple jurisdictions, at a Countywide scale, and regionally. There are many forms of collaboration, including informal working groups, joint powers authorities, special districts, etc. Collaborative efforts can be structured differently in terms of participants, scope, governance structure, authority, resources, etc. The form of collaborative is often selected by determining how best to achieve the specific objectives in a manner that makes efficient use of existing funding, staff, and governance resources and builds on, rather than duplicating, existing efforts.

A few examples of existing and emerging sea level rise collaborations and other collaborative efforts include:

Multi-Jurisdictional Collaboration

- Moffett Community Quarterly Meetings. The Moffett Community Quarterly meetings have been conducted for at least 15 to 20 years to provide the cities of Mountain View and Sunnyvale, along with Moffett Federal Airfield stakeholders, with an opportunity to share information, discuss topics of mutual interest, and identify issues that require further collaboration. Agencies can then pursue these collaborations and report back to the group. Moffett Community stakeholders include Google, Planetary Ventures, NASA Ames Research Center, 63rd Readiness Division, 351st Civil Affairs Command, 129th Rescue Wing, and the Defense Innovation Unit. Additionally, City staff and NASA Ames representatives have recently reinitiated quarterly meetings to enhance collaboration and discuss infrastructure and development projects within the NASA Ames Research Park and the City's boundaries.

County-Level Collaboration

- Santa Clara County Climate Collaborative. The Santa Clara County Climate Collaborative (Collaborative) is a cross-sector network and community of practice for public agencies, academia, nonprofit, and community-based organizations, and business and community leaders to advance regional solutions to climate change through resource and expertise sharing, joint-funding opportunities, and partnership development. Funded through a grant from the National Fish and Wildlife Foundation, the Collaborative's initial focus is to develop a Santa Clara County Resiliency Strategy for Flooding and Sea Level Rise. The Resiliency Strategy will assess City and County-level priority assets at risk from sea level rise and riverine flooding; adaptation and resiliency strategies by asset type, which include natural and nature-based solutions; and a pipeline of prioritized infrastructure/policy/investment solutions. Mountain View staff has attended some of the preliminary meetings of the Collaborative.
- OneShoreline. On January 1, 2020, OneShoreline, the San Mateo County Flood and Sea Level Rise Resiliency District, was created. Formerly the San Mateo County Flood Control District, this expanded organization has a new mission to address sea level rise, flooding, coastal erosion, and regional stormwater infrastructure. OneShoreline works throughout San Mateo County on projects that protect the community from flooding and erosion, enhance the environment, and create recreational opportunities. It has partnerships with many governance structures, including new and previously established efforts involving cities and San Mateo County, and long-standing efforts related to flood zones, originally established through the creation of the San Mateo County Flood Control District, that are now the responsibility of OneShoreline.
- BayWAVE. BayWAVE is a County of Marin planning effort to coordinate with all of East Marin's cities and towns to provide an ongoing public process that helps local communities understand and prepare for sea level rise. BayWAVE's multi-jurisdictional coordination is critical as sea level rise crosses political boundaries to impact shared resources, utilities, and infrastructure. BayWAVE completed the Marin Shoreline Sea Level Rise Vulnerability Assessment and is now focused on outreach and education, building partnerships, and tracking sea level rise adaptation project across Marin County.

Regional Collaboration

- Bay Area Climate Adaptation Network (BayCAN). BayCAN is a collaborative network of local government staff and partnering organizations working to help the Bay Area respond effectively and equitably to the impacts of climate change on human health, infrastructure, and natural systems. BayCAN focuses on adaptation challenges in water supply, sea level rise, wastewater and stormwater management, wildfires, ecosystems, and public health.

- Bay Adapt. Bay Adapt is an initiative to establish regional agreement on the actions necessary to protect people and the natural and built environment from rising sea levels. Bay Adapt is convened by the San Francisco Bay Conservation and Development Commission (BCDC), in partnership with a broad range of Bay Area leaders. After extensive community engagement and guidance from a Leadership Advisory Group, the Bay Adapt Joint Platform was developed. The Joint Platform is a consensus-based strategy of actions and tasks that will protect people and the natural and built environment from rising sea levels. On January 25, 2022, the City Council adopted a resolution in support of the Bay Adapt Regional Strategy for a Rising Bay Platform.

Opportunities to Further Collaboration in Santa Clara County

While there are many regional efforts under way that are focused on sea level rise in the Bay Area, there remains an opportunity to increase awareness and collaboration on sea level rise at the local level in Santa Clara County. As staff reached out various agencies to learn about existing sea level rise efforts, two opportunities to enhance collaboration emerged:

- Valley Water Sea Level Rise Adaptation Working Group for Elected Officials: This proposed group would be convened by Valley Water and would focus on engaging leaders from NASA and local elected officials from bayside cities in Santa Clara County and from the County to come together to bring a heightened focus on sea level rise. The group would be initially informal in structure (similar to the Moffett Community Meetings) and focus on building awareness of sea level rise impacts in Santa Clara County and efforts under way to address sea level rise. Over time, the group could play a role in coordinating sea level rise efforts and collectively bring attention to the need to increase funding from the State or Federal government for sea level rise work across the county.
- Santa Clara County Climate Collaborative Sea Level Rise Working Group: This proposed group would be convened by the County of Santa Clara and would focus on engaging staff from local jurisdictions, public agencies, nonprofit and community organizations, as well as local community leaders to come together to share research and data, leverage resources, and coordinate implementation of strategies and projects to increase the County's resilience to sea level rise and fluvial flooding.

The Valley Water Sea Level Rise Adaptation Working Group for Elected Officials Group (Valley Water Group) and the Santa Clara County Climate Collaborative Sea Level Rise Working Group (Santa Clara County Group) are complementary to each other and would be undertaken with significant coordination between staff across both efforts. When combined, the two efforts could meet the need to bring attention to and increase collaboration on sea level rise work in the County. The Valley Water Group would enhance leadership and collaboration across jurisdictions through engagement of local elected leaders, while the Santa Clara County Group would provide community input and opportunities for staff from jurisdictions working on sea level rise and

flooding to coordinate on sea level rise projects under way. In tandem, these efforts would allow for enhanced coordination across all levels of the jurisdictions in Santa Clara County towards our common goal of sea level rise resilience in Santa Clara County. The joint efforts would also enable Santa Clara County jurisdictions to engage with regional efforts, such as BayCAN and Bay Adapt, in a more coordinated way, and, ultimately, could result in more effective advocacy for State and Federal funding of sea level rise resilience.

For the Santa Clara County Group, invitations to cities and community groups to join the Collaborative will be sent in the summer of 2022 and a Membership Commitment Letter signed by the City Manager will be requested. For the Valley Water Group, the proposed collaborative will be brought before the Valley Water Board of Directors' Committee on Climate Change on Wednesday, June 29, 2022 for formal action. Upon establishment of the working group, it is anticipated that invitations to participate will be sent to the City of Mountain View and other agencies in the summer of 2022. This will be an open invitation, with a request that jurisdictions identify the representative(s) from their respective governing bodies who will participate.

Mountain View's participation in the identified sea level rise collaborative opportunities do not require official action by the City Council, although the City would follow its established practice for appointing a Council representative to the Valley Water Sea Level Rise Adaptation Working Group for Elected Officials.

Next Steps

Staff requests that the Council Sustainability Committee support continued work at the staff level to develop both the Valley Water Sea Level Rise Adaptation Working Group for Elected Officials and the Santa Clara County Climate Collaborative Sea Level Rise Working Group. These discussions will help identify additional gaps and opportunities in sea level rise resilience efforts and focus efforts on the highest impact strategies to enhance collaboration given staff and resource constraints. As progress is made, staff will provide regular updates to the CSC and, ultimately, the City Council.

DL-LA/4/PWK

622-06-22-22M

DATE: June 22, 2022

TO: Council Sustainability Committee

FROM: Audrey Seymour Ramberg, Assistant City Manager/Chief Operating Officer

SUBJECT: **Carbon-Neutral Target Date**

RECOMMENDATION

Provide direction to staff to proceed with the scoping of a 2035 accelerated carbon-neutrality target and strategies.

BACKGROUND

On April 21, 2020, the City Council adopted a resolution for Mountain View to become a carbon-neutral city by 2045. At its November 9, 2021 meeting, the City Council referred to the Council Sustainability Committee (CSC) the question of accelerating the City's carbon-neutrality date to as early as 2030. This topic was discussed generally at the December 1, 2021 meeting of the CSC, at which staff was asked to return to the CSC with an assessment of the implications of moving up the City's carbon-neutrality target date.

At the April 19, 2022 CSC meeting, staff provided information regarding the:

- Latest climate research;
- State and local action to set accelerated carbon-neutrality dates;
- Need for broader legislative and financing efforts to support a wide-scale, rapid decrease in greenhouse gas emissions;
- General strategies for achieving significant reductions in emissions;
- Recognition of what the City has already accomplished and is positioned to accomplish; role of carbon dioxide removal and carbon offsets;

- Importance of community engagement with an equity lens; considerations regarding the limitations in City staffing capacity and funding; and
- Challenges and opportunities associated with various carbon-neutrality dates.

The April 19, 2022 CSC memo and its attachments are included as Attachment 1. During this meeting, the CSC provided direction regarding the approach to developing an accelerated carbon-neutrality target, including agreement on the following staff recommendations:

1. Direct staff to develop specific accelerated carbon neutrality goals and implementation recommendations for further discussion at the next CSC meeting.
2. Focus primarily on investing resources into strategies that reduce emissions balanced with a lesser amount of purchasing offsets.
3. Focus carbon-neutrality strategies on the electrification of buildings and transportation.
4. Consider equity implications in the identification of appropriate carbon-neutrality goals and strategies.

Overall, there was support for accelerating the City's carbon-neutrality goal balanced with a concern about the fiscal impacts of doing so. Specific measures to reduce emissions were discussed, including the use of reach codes and the upcoming California Building Standards Code adoption cycle for 2023. Additionally, various strategies to address residual emissions through offsets were also discussed.

DISCUSSION

There are a range of carbon-neutrality targets being adopted by organizations around the world. There is not a consensus on what the specific target should be but, rather, a general recognition that bold action is necessary and that global emissions must be drastically reduced immediately and eliminated by 2050. ICLEI Local Governments for Sustainability (ICLEI) has joined the United Nations Race to Zero campaign, encouraging cities, businesses, regions, and other stakeholders to achieve net-zero carbon emissions before 2050. In support of this goal, ICLEI is working to engage 1,000 cities to adopt carbon-neutrality goals of 2050 or sooner. ICLEI has also convened a working group of cities with accelerated carbon-neutrality goals, such as 2030 or 2035, to work through accelerated implementation.

Closer to home, there is a similar lack of consensus on what accelerated carbon-neutrality targets should be adopted, with cities and counties embracing a range of target years from 2030 to 2050 and the State taking a similarly varying approach. In July 2021, Governor Gavin Newsom directed State agencies to evaluate advancing the State's 2045 carbon neutrality target year to 2035. The

California Air Resources Board (CARB) recently released an advanced clean cars proposal for all new passenger vehicles sold in California to be zero-emission by 2035. However, CARB also released its draft Assembly Bill (AB) 32, Climate Change Scoping Plan Update for 2022, and is recommending achieving carbon neutrality no later than 2045. This Scoping Plan has not yet been adopted and is currently in the public comment period. A public hearing to consider the draft plan update is scheduled for June 23, 2022.

Proposed Scoping of a 2035 Carbon Neutrality Goal

Based on the local and global context, analysis, and discussions with City departments, neighboring jurisdictions, and other stakeholders, staff recommends further scoping 2035 as a proposed accelerated carbon-neutrality target. **A 2035 carbon-neutrality goal would offer balance between setting an ambitious, far-reaching goal and an achievable target that recognizes the scale of change that needs to be achieved to reach carbon neutrality.**

The resource requirements associated with a 2035 carbon-neutrality goal would need to be assessed prior to recommendation to the City Council. Scoping 2035 as a proposed carbon-neutrality target would include a cost and feasibility analysis. Additionally, staff would also explore financing strategies and partnerships (see brief discussion below) that could support the City's carbon-neutrality goal. The scoping and exploration of financing strategies and partnerships would ultimately inform final staff recommendations to the City Council for an accelerated carbon-neutrality goal.

Proposed Hybrid Pathway to Adoption

Of the municipalities that have adopted carbon-neutrality goals, a few developed plans to map out how they will achieve carbon neutrality by their target date prior to adoption while many others first set carbon-neutrality targets and then began the process of developing implementation plans. The latter is the approach Mountain View opted for in setting its original 2045 carbon neutrality target.

The approach the City utilized for the original carbon-neutrality goal-setting process was pragmatic; developing a full carbon-neutrality plan can take months to years to complete and would have resulted in significant delays in establishing a carbon-neutrality goal for the City. Additionally, the 25-year timeline associated with the 2045 goal allowed for a reasonable amount of planning time before the beginning of implementation.

A similar approach of adopting a new, earlier goal first and then developing an implementation plan would be challenging if applied to a significantly accelerated carbon-neutrality target date for the City. Adopting an accelerated goal without an implementation plan would not sufficiently demonstrate that the goal was achievable. Furthermore, the process would leave little time to

develop an implementation plan postadoption because of the accelerated timelines and pressure to begin implementation quickly.

Based on the constraints of the long lead time to develop a full carbon-neutrality plan and the need to demonstrate feasibility for an accelerated carbon-neutrality target, staff proposes a hybrid approach to accelerating the City's carbon-neutrality goal. A hybrid approach would entail quickly completing targeted analysis to develop a roadmap for carbon neutrality by 2035, including identification of the most impactful strategies as well as an estimate of the staff and fiscal resources needed to implement. This roadmap would be the basis for a carbon neutrality implementation plan, initially focusing specifically on quantification, timelines, and resource needs. By quantifying the emissions reductions that would result from implementation of the major strategies to achieve carbon neutrality and developing timelines for implementation, the roadmap would demonstrate feasibility of a 2035 goal (or lead to recommendation of a different target, if 2035 was found not to be feasible). The analysis would also incorporate the changing State and Federal context and quantify the emissions reductions expected as a result of new requirements and commitments being put forth by the State and Federal governments.

By conducting a targeted analysis, staff would balance the need to demonstrate feasibility with a desire to take quick action. Support to conduct this analysis could come from consultants or climate change organizations that Mountain View participates in, such as ICLEI. ICLEI offers consulting services to member agencies, such as creating carbon-neutrality roadmaps and conducting cost analysis of high-impact decarbonization measures on a fee basis. Funding for this analysis is available in unallocated funds in the Sustainability Capital Improvement Fund, which Council directed during the May 11, 2021 Sustainability Action Plan 4 (SAP-4) update, could be used on other expenses associated with SAP-4. SAP-4 includes the development of a carbon-neutrality plan. Work to request additional services from ICLEI or to hire a consultant could begin quickly and with a targeted scope, and it is estimated that it could be completed within six months.

Exploration of Financing Strategies and Partnerships

Concurrent to this targeted analysis and planning work, staff will continue to explore opportunities to build partnerships and leverage private financing as a strategy to bring sufficient resources and achieve scale in decarbonization in Mountain View while minimizing impacts to the City's budget. For example, preliminary discussions with several neighboring cities as well as regional partners are under way to explore opportunities to partner on efforts to support electrification of existing buildings. If successful, such partnerships could accelerate and make more cost-effective the work of electrifying buildings. Similar partnerships could be explored with regard to electrifying vehicles. Additionally, staff will explore financing opportunities, such as taxes, fees, bonds, or the \$100 million in private equity pledged in Ithaca, New York, to create a lending program providing low- or no-interest loans for energy efficiency and electrification of buildings.

Staff will also develop a proposed approach to addressing residual emissions that remain after the carbon-neutrality target year. This could be in the form of carbon offsets, local equity investments to achieve emissions reductions, or other sequestration efforts. As discussed at the April 2022 CSC meeting, offsets offer benefits in the global strategy to address climate change, yet they do not typically achieve sustained impact locally. Taking into account feedback provided at that meeting, staff will propose an approach that balances the policy goal of reducing emissions with the desire for accountability that strategies, such as the purchase of offsets, can offer.

Timeline and Next Steps

If the CSC approves the proposed pathway to Council adoption of a carbon-neutrality target, staff would engage consultant services and conduct the above-described work to build partnerships and leverage financing, and bring a recommended carbon-neutrality target to Council for consideration in the first quarter of 2023. In the meantime, SAP-4 would continue to be implemented in order to continue to achieve sustainability goals and the associated reductions in carbon emissions. The anticipated next steps are outlined below:

1. Concurrently continue progress on implementation of SAP-4.
2. Hire a consultant to develop a roadmap for carbon neutrality, including quantification and implementation of timelines for major decarbonization strategies.
3. Work to build partnerships to accelerate and achieve scale on decarbonization strategies.
4. Bring carbon-neutrality recommendations to Council in the first quarter of 2023.
5. Solicit feedback on the implementation approach of carbon-neutrality strategies from the community through engagement efforts.
6. Further develop a roadmap for carbon neutrality implementation plan and financing strategy for Council consideration in 2023.

DL/6/MGR

622-06-22-22M-1

Attachment: 1. April 19, 2022 CSC Memo

**MEMORANDUM**

City Manager's Office

DATE: April 19, 2022

TO: Council Sustainability Committee

FROM: Lauren Anderson, Sustainability Analyst II
Steve Attinger, Sustainability Coordinator
Danielle Lee, Chief Sustainability and Resiliency Officer

VIA: Audrey Seymour Ramberg, Assistant City Manager/Chief Operating Officer

SUBJECT: **Carbon-Neutral Target Date**

PURPOSE

This memorandum responds to Council Sustainability Committee guidance from the December 1, 2021 meeting to provide information regarding the implications for accelerating Mountain View's current adopted carbon neutrality target year of 2045.

RECOMMENDATION

Provide direction on staff questions regarding the approach to developing an accelerated carbon neutrality target and strategies.

BACKGROUND**Latest Climate Research**

The Intergovernmental Panel on Climate Change (IPCC) prepares Assessment Reports about the current research on climate change every few years. The IPCC has recently released three reports during its Sixth Assessment Report cycle, which will be completed in 2022, that underscores the urgency for limiting the impacts of climate change. In August 2021, the IPCC released the first report, *Climate Change 2021: the Physical Science Basis*. Compiling years of peer-reviewed scientific studies, the report is considered the most comprehensive assessment of climate science to date. The report included the following findings:

- The climate has already warmed by 1.1 degrees Celsius (about 2 degrees Fahrenheit) since 1850-1900, which is the hottest Earth has been in 100,000 years.
- A net 1.5 degrees Celsius warming is expected by 2040.

- Humans are the cause of this temperature increase, which is driven largely by the burning of fossil fuels.
- Irreversible tipping points are approaching.

In February 2022, the IPCC released the second report, *Climate Change 2022: Impacts, Adaptation and Vulnerability*, which establishes areas where the world is most vulnerable to climate change and highlights climate impacts and ways to adapt to them. Significant findings included the following:

- Our time to adapt to the impacts of climate change is running out.
- In many areas, climate impacts have already been greater than previously predicted.
- The most vulnerable populations are disproportionately impacted by climate change.
- We can prepare for worsening conditions by conserving at least one-third of the world's natural habitats.

In April 2022, the IPCC released the final report, *Climate Change 2022: Mitigation of Climate Change*, which explains developments in emission reduction efforts and evaluates the effectiveness of national climate pledges in relation to long-term emissions goals. The report finds:

- Without immediate and deep emissions reductions across all sectors, it will be impossible to limit global warming to 1.5 degrees Celsius.
- Urban infrastructure and activities are responsible for two-thirds of today's emissions.
- Cities and urban areas offer significant opportunities for emissions reductions.
- While funding to address climate change is much lower than needed to limit global warming, there is sufficient global capital and liquidity to close the investment gap.

Accelerated Carbon Neutrality—State- and Municipal-Level Action

In 2018, the State of California established a goal of achieving carbon neutrality by 2045. In July 2021, Governor Gavin Newsom directed State agencies to evaluate advancing this target year to 2035. The California Air Resources Board (CARB) and California Public Utilities Commission (CPUC) are currently assessing pathways for the state to be carbon-neutral by the

new 2035 target year. A detailed description of regional, State, and Federal initiatives that support climate action and carbon neutrality is included in Attachment 1.

Many municipalities across the U.S. have carbon neutrality goals, and some have begun the process of accelerating those goals. Several municipalities, including San Jose; Irvine; Menlo Park; Petaluma; Sacramento County; Ann Arbor, Michigan; Flagstaff, Arizona; Ithaca, New York; and Park City, Utah, have now committed to achieving carbon neutrality by 2030. Other cities such as San Diego, San Luis Obispo, and Santa Barbara have set carbon neutrality goals for 2035. A few of these municipalities have developed plans to map out how they will achieve carbon neutrality by their target date, while others have first set carbon neutrality targets and then developed implementation plans. This is the approach Mountain View opted for in setting its original 2045 carbon neutrality target, and it is likely the approach that staff would recommend if the Council ultimately decides to set an earlier date for carbon neutrality.

Mountain View Greenhouse Gas Reduction Targets and Carbon Neutrality Goal

On November 3, 2009, the City Council adopted voluntary greenhouse gas (GHG) reduction targets for the community, with initial targets for 2012, 2015, 2020, and 2050. These targets set an absolute reduction in total emissions below a baseline year of 2005. The targets were developed and adopted in response to the Global Warming Solutions Act of 2006 (Assembly Bill 32), which requires California to reduce Statewide GHG emissions. Subsequently, through the City's Climate Protection Road Map, the City Council adopted interim targets at five-year intervals between 2020 and 2050.

On December 3, 2019, the City Council adopted revised GHG reduction targets for the years 2025 to 2050. Table 1 below shows Mountain View's current communitywide GHG reduction targets.

Table 1: Community GHG Reduction Targets

Year	Reduction Target (below 2005 baseline level)
2025	33%
2030	47%
2035	59%
2040	68%
2045	75%
2050	80%

On April 21, 2020, the City Council passed a resolution for Mountain View to become a carbon-neutral city by 2045. To be carbon-neutral, a city must achieve net zero GHG emissions through a combination of emissions reductions and removal of GHGs from the atmosphere. This means

that in addition to achieving the adopted 2045 greenhouse gas (GHG) reduction target of 75% below 2005 levels, Mountain View would either need to exceed the adopted reduction target or balance any remaining GHG emissions with emission removal projects (such as planting trees or restoring wetlands) or carbon offsets.

Acceleration of Carbon Neutrality Goal

At its November 9, 2021 meeting, the City Council referred the topic of achieving carbon neutrality as early as 2030 to the Council Sustainability Committee (CSC). At the CSC meeting on December 1, 2021, the CSC directed staff to provide information regarding the implications of accelerating the City's communitywide carbon-neutral goal from 2045 to as early as 2030.

ANALYSIS

Wide-Scale Change: Legislation and Financing

To solve the problem of climate change, cities need to drastically reduce GHG emissions and ultimately achieve carbon neutrality. The science indicates that time is of the essence, and there are still pathways available that make this goal possible. Mountain View cannot arrive at carbon neutrality on its own. The City will need significant action from regional, State, and Federal governments to achieve the necessary GHG reductions. Additionally, the City will need access to the financial resources required to achieve the wide-scale change to bring about carbon neutrality.

Legislative Advocacy

Mountain View's carbon-neutral strategy should include efforts to advocate for legislation, programming, and funding at the regional, State, and Federal level to support cities in reducing GHG emissions. This could be pursued through the City's existing legislative advocacy resources at the State and regional level. Additional resources may be needed to advocate effectively at the Federal level. Intergovernmental relations and solutions will be particularly important in cases where the City does not have significant control over an emissions source (i.e., freight traffic, air travel, or consumption) or the infrastructure needed to reduce emissions (i.e., public transit services).

Establish Avenues for Private Financing

Toward an accelerated carbon neutrality goal, the City could explore opportunities to leverage private financing. For example, Ithaca, New York, is pioneering a program that has already secured \$100 million in private funds to pay for actions needed to achieve their 2030 carbon neutrality goal, and they are looking for an additional \$250 million to further their efforts. Their strategy "...is to not rely on government money, but to tap into private investors and combine it

with incentives from government which can reduce the cost of capital and interest rates for project finance.”¹ Mountain View could consider a similar approach to access to sufficient resources to achieve wide-scale decarbonization while minimizing impacts to the City’s budget.

Achieving Carbon Neutrality

To move the City’s carbon neutrality goal to as early as 2030, Mountain View would need to significantly accelerate emissions reductions and identify appropriate emission removal projects and/or carbon offsets. It is critically important for governmental agencies, private organizations, and individuals to take action to achieve carbon neutrality. However, technological and cost constraints, workforce availability, and the sheer volume of change that needs to be achieved all contribute to the scale of the challenge before the City. Furthermore, there are tradeoffs between investing resources in achieving long-term emissions reductions, a slower yet longer-lasting effort, and investing in costly, recurring carbon offsets which would make up the gap in emissions reductions to achieve carbon neutrality more quickly.

There are not many models for how to achieve carbon neutrality. Many of the cities with accelerated carbon neutrality targets have not yet developed their carbon neutrality action plans. Most pathways to carbon neutrality use a combination of policy (carbon neutrality goal-setting) and accountability (commitment to offsets) to achieve their goals. One approach is to set an accelerated carbon neutrality target that is aspirational, and either offset the remaining emissions—potentially at significant cost—or focus the policy goal on maximizing emissions without incorporating financial repercussions for not meeting that goal. Another approach is to set a carbon neutrality target that is measured and achievable and offset residual emissions, or not include offsets at all. A third approach the City could consider would be to develop a new model that blends an aspirational carbon neutrality goal with accountability measures through a reasonable but bounded commitment to offsets. This approach could incorporate rapid climate action and accountability, while keeping the investment of resources focused on achieving emissions reductions rather than purchasing offsets.

Staff proposes that the CSC direct staff to incorporate direction from this meeting, continue analysis and develop recommendations for an accelerated carbon neutrality target and strategies to achieve that goal in a way that is tailored to Mountain View and that builds on what the City has already achieved and is positioned to accomplish.

Question 1: Does the CSC agree with the recommendation to direct staff to develop specific accelerated carbon neutrality goals and implementation recommendations for further discussion at the next CSC meeting (anticipated in mid to late May)?

¹ [Ithaca Is First U.S. City to Begin 100% Decarbonization of Buildings \(cnbc.com\)](https://www.cnbc.com/2021/04/15/ithaca-is-first-u-s-city-to-begin-100-decarbonization-of-buildings.html)

Strategies to Reduce Emissions Toward Carbon Neutrality

Emissions reductions would likely include an initial focus on the transportation and energy sectors, which contributed about 90% of communitywide emissions in 2020; however, this would ultimately extend to all sectors. Staff reviewed carbon neutrality plans adopted by municipalities with carbon-neutral by 2030 goals, which are primarily aspirational, and identified some common strategies. Current progress and analysis of potential strategies that could be implemented in Mountain View are included below.

Building Energy

Achieving carbon neutrality by 2030 will require deep reductions in emissions from existing building energy use. In 2020, the energy sector contributed about 32% of communitywide GHG emissions, with natural gas use responsible for the majority of these emissions (76%). Building electrification and natural gas phase-out, switching to clean electricity, and energy efficiency are the primary strategies to decarbonize and eliminate emissions from buildings. These strategies are interrelated and must be pursued in tandem. For example, building electrification and natural gas phase-out only achieve emissions reductions if the resulting electricity use is based on clean electricity. Similarly, without energy efficiency to moderate demand on the grid, the increased electricity use resulting from natural gas phase-out could strain electricity supply.

Building Electrification and Natural Gas Phase-Out

The City has already taken significant action toward building electrification. On November 12, 2019, the City Council adopted a Building Electrification Reach Code requiring all newly constructed buildings to be all-electric. This also applied to all significant remodels (working on more than 50% of the home). Additionally, the City launched Electrify Mountain View and a Cool Block program to engage residents in electrification and other aspects of sustainability. Electrify Mountain View is an online platform to help educate and empower homeowners and renters to make informed decisions about switching to more cost-effective, lower carbon emission solutions in their homes and lifestyles. The Cool Block program helps neighbors come together to learn and take collaborative action on disaster preparation and resilience, sustainability, and community-building.

Notwithstanding this progress, attaining carbon neutrality will require the City to expedite its efforts to electrify existing buildings and greatly reduce natural gas use. The City could include the following types of actions to support further decarbonization of buildings:

- As the building code continues to be updated and model reach codes also stretch towards decarbonization of buildings, continue to adopt updated reach codes that accelerate the City's progress towards electrification and carbon neutrality.

- Support the electrification of existing buildings through outreach, financing, and incentives for fuel-switching and/or mandates (i.e., incorporate existing buildings into the Reach Codes to require electrification upon a lower renovation threshold or enact a “burn-out” ordinance requiring natural gas systems and appliances be replaced with electric alternatives upon their expiration).
- Select a certain date for an “end-of-flow” of natural gas in Mountain View.

As noted above, adopting a target date for phasing out natural gas and achieving end-of-flow to all gas customers in Mountain View is one potential strategy to reduce GHG emissions from buildings. This would establish a date by which community members would need to make any electrification updates to their homes for water heating, cooking, space heating, and swimming pool heating. **Although electrification and the eventual end of natural gas use in the community are critical steps to achieving carbon neutrality, staff also recognizes the wide-ranging impacts that such a commitment would have within the community**, including impacts to economically vulnerable homeowners and renters, the trades, and certain industries reliant on natural gas. Additionally, there can be significant cost and space challenges associated with retrofitting existing buildings with the technology available today.

A few cities have adopted or are currently considering end-of-flow target dates as part of their climate action plans, including Los Altos Hills, Menlo Park, and Half Moon Bay. Setting an end-of-flow date would create momentum for actions that would accelerate progress towards electrification and shift the market more quickly by signaling that electrification is coming by a set date.

As the City transitions away from natural gas, whether through an end of flow decision or through policies and incentives, it is essential that equity considerations be addressed. To aid the community with this transition and in recognition of the significant costs associated with building electrification, partnerships and advocacy at the regional and State level to provide funding and incentives and to enact State laws to phase out natural gas (for example, a law prohibiting the sale of natural gas appliances) will be essential. The City could supplement these incentives with:

- Workforce support to those transitioning to jobs in the electrification sector.
- Financing and incentives for electrical upgrades and fuel-switching.
- Implementing a bulk buying program for electric equipment such as water heaters, heat pump HVAC units, and induction stoves and cooktops.

Clean Electricity

Clean electricity makes building and transportation electrification effective at reducing emissions. **The City has already greatly decarbonized its electricity supply** by joining with Sunnyvale, Cupertino, and the County of Santa Clara to create Silicon Valley Clean Energy (SVCE), a community choice energy program that sources carbon-free power, mainly from renewables, such as solar and wind, and hydropower.

Mountain View could continue to support clean energy and communitywide renewable energy use through the following types of actions:

- Support the deployment of solar panels with battery storage to existing residential and commercial buildings.
- Support the increase in the percentage of renewable electricity use communitywide:
 - Promote SVCE's GreenPrime option (100% renewable energy generation service) to residents and businesses.
 - Support SVCE in pursuing 24/7 renewable energy (renewable energy supply at all times) to reduce overall market demand for fossil fuels.
 - Support non-SVCE customers (Direct Access and PG&E) in accessing renewable energy.

Energy Efficiency

Energy efficiency is foundational to electrifying buildings and decarbonizing electricity supply. If buildings need less energy, then less renewable energy is needed to supply them. To date, Mountain View's efforts have included running the successful, multi-year Energy Upgrade Mountain View program and partnering with the Bay Area Regional Network (BayREN) to host community energy efficiency workshops.

Pathways to carbon neutrality by 2030 would include promoting and expanding access to energy efficiency retrofits for residential and commercial buildings. Additional actions could involve:

- Providing incentives or financing.
- Conducting outreach and education.
- Implementing programs to encourage energy efficiency.

Transportation

Transportation accounted for 58% of communitywide emissions in 2020 with passenger vehicles responsible for the majority of these emissions (78%). To achieve carbon neutrality, Mountain View's approach to reducing transportation-related GHG emissions will focus on reducing vehicle dependence and electrifying transportation systems and the remaining vehicles on the road.

Reducing Vehicle Dependence

Prioritizing mode shift from vehicle use to active transportation, public transit, and electric micro-mobility solutions is an essential carbon neutrality strategy. Mode shift is encouraged by complete neighborhoods and transit-oriented development, where people can access all the things they need within walking distance and can access public transit for commuting if they are unable to telecommute. These strategies also improve safety for all road users, support the health of the community, improve air quality, and reduce congestion. **The City has already undertaken many initiatives to reduce transportation emissions**, such as hiring a Transportation Demand Manager, improving bicycle and pedestrian infrastructure, developing *AccessMV: Mountain View's Comprehensive Modal Plan*, expanding Mountain View Community Shuttle service, and adopting the North Bayshore and East Whisman Precise Plans, which promote complete neighborhoods and decrease vehicle miles traveled by addressing the jobs-housing imbalance. While these precise plans will result in a decrease in vehicle dependence, staff notes that many of these efforts will take 10 to 20 years to be built and realize reductions in vehicle dependence. In some cases, the precise plans will take even longer; for example, the North Bayshore Master Plan will take 20 to 30 years to build.

Mountain View could further reduce vehicle dependence through continuing to take a comprehensive approach to transportation. The strategies involved in reducing vehicle dependence are interrelated, and one cannot be successfully implemented without the other. For example, building transit-oriented development and encouraging more public transit use is most effective when there are also enhancements to public transit services to make them widely available as an alternative. Promoting active transportation is linked to projects that provide the infrastructure to walk and bike.

Taking this into account, **Mountain View could pursue a suite of actions that include:**

- Continue to encourage or require transit-oriented, mixed-use, and infill developments that allow people to live close to public transportation and other services and amenities.
- Increase density in residential neighborhoods through zoning where mixed-use retail and job areas are available nearby.

- Implement or expand Transportation Demand Management (TDM) programs, including developing a TDM ordinance to reduce or eliminate parking requirements Citywide.
- Support regional efforts to enhance public transportation services to Mountain View.
- Encourage active and public transportation use through outreach, incentives, and infrastructure.
- Prioritize projects within Mountain View's transportation plans (i.e., AccessMV, Bicycle Transportation Plan, Pedestrian Master Plan, etc.) that reduce vehicle miles traveled.

Vehicle Electrification

Achieving carbon neutrality will also rely on the electrification of vehicles. Due to the high percentage of renewable energy and other carbon-free sources in California's electricity mix, the annual emissions from electric vehicle (EV) usage are about 50% of the national average and only 17% of the annual GHG emissions from a similar gasoline powered vehicle. EVs charged in Mountain View and 12 other local jurisdictions in Santa Clara County can take advantage of carbon-free electricity provided by SVCE to further reduce GHG emissions.

The City has already made efforts to promote EV use in Mountain View. In November 2019, the City Council adopted an EV Charging Infrastructure Reach Code requiring most newly constructed buildings to install a prescribed quantity of EV chargers, and in 2022 staff plans to recommend expanding on this effort through the next cycle of Building Code updates. In December 2021, the City completed an Electric Vehicle Action Plan, which identifies strategies, policies, and programs to support electric vehicle adoption and deployment of EV charging infrastructure. In spring 2022, Mountain View will install 35 new EV chargers among its downtown parking structures at 850 California Street and 135 Bryant Street. Another 33 EV chargers are already installed among the 850 California Street and Civic Center parking structures and the Community Center. Additionally, the City is preparing to analyze how to electrify its own fleet and will start this work in 2022.

Although significant progress has been made in the electrification of passenger vehicles, challenges remain in fully electrifying transportation. At this time, the EV technology is still developing for medium/heavy-duty vehicles and is not yet proven for many emergency response vehicles. Electric buses and shuttles also present challenges in terms of finding options that have sufficient range to complete a full day of service without charging. The City will need to build on the progress that has been made and participate and support regional and State efforts to further electrification of more challenging sectors within transportation.

To achieve carbon neutrality, **the City can consider the following types of actions to further electrify transportation:**

- Support regional and State efforts to advance the electrification of public transit, freight, and other medium/heavy-duty vehicles, and provide the corresponding charging infrastructure needed to operate these vehicles.
- Promote community EV adoption through expanded outreach, incentives, bulk buys, outreach, and other policies and programs.
- Continue to expand access to EV charging through Electric Vehicle Infrastructure Reach Codes and installation of EV charging infrastructure in new and existing buildings (including multi-family and commercial) and public locations.
- Encourage the use of electric bikes and electric micro-mobility devices through charging infrastructure, outreach, and/or pilot programs.

Question 2: Does the CSC agree with the recommendation to focus carbon neutrality strategies on the electrification of buildings and transportation?

Other Actions

Sustainable Consumption and Waste Management

Mountain View will need to reduce emissions from solid waste and consumption to achieve carbon neutrality. While solid waste contributed about 3% of Mountain View's communitywide GHG emissions in 2020, reducing those emissions could avoid the need for additional offsets or emission removal efforts. Consumption-based emissions, or life-cycle emissions from food, air travel, and purchased goods and services, are not included in the City's annual GHG emission inventories but are a significant emissions source both locally and globally.² Efforts to reduce consumption-based emissions, therefore, will not count towards the City's carbon-neutral goal but remain important to the City's overall sustainability efforts.

Mountain View has already undertaken several actions to reduce waste-related emissions, such as implementing commercial and residential food scraps collection programs and adopting the Food Service Ware Ordinance to reduce single-use plastics. The City has adopted the California Green Building Code (CALGreen), which includes requirements for the recycling and salvage of construction and demolition debris. In addition, Mountain View continues to support a plant-rich diet through the City's Plant-Based Eating Program.

² For more information on consumption-based emissions, see the December 3, 2019 Council report entitled "[Community Greenhouse Gas Accounting, Reduction Targets, and Carbon Neutrality.](#)"

The following types of actions could be implemented to further reduce emissions from consumption and solid waste:

- Strengthen the City's requirements for construction and demolition debris handling to increase the amount of material diverted from landfills and recycled and/or repurposed.
- Implement zero-waste plans to expand efforts to comply with SB 1383 and divert organic materials from landfills.
- Continue supporting and expanding the City's compost and recycling programs to ensure the City's goal of diverting 90% of waste from the landfill by 2030 is met or exceeded.
- Expand reuse, repair, and tool sharing programs to ensure materials are recovered, reused, and recycled to their highest purpose.
- Enhance refrigerant recycling programs.
- Continue to support a plant-rich diet through the City's current Plant-Based Eating Program.

Local Tree Canopy and Biodiversity

Preserving and enhancing Mountain View's tree canopy will lead to both increased carbon sequestration and increased resiliency by mitigating urban heat island impacts. The City has made great strides to enhance Mountain View's tree canopy with efforts, including engaging with the nonprofit Canopy to help develop new educational opportunities for residents to learn about the importance of trees and working to increase tree and vegetation plantings on City property with specific species that provide added shade and biodiversity. Currently, the Community Services Department is working on a scheduled five-year update to the Community Tree Master Plan (CTMP). A tree canopy and land cover assessment summary report will be completed as part of the update. The summary report will include Mountain View's total canopy percentage, canopy health and historic changes to the canopy. In addition, it will help focus more tree plantings in areas of the City that may be vulnerable to climate impacts such as extreme heat and, therefore, in need of more tree canopy coverage. The update will also include a Story Map with interactive maps and a priority planting plan for a way to share the importance of preserving and growing the urban forest.

Through the development of the City's Strategic Roadmap, Council prioritized the development of a Biodiversity Strategy to assist with landscaping standards for City and private property. The strategy will help guide decisions related to species that will withstand climate change, increase local habitat, and aid in the preservation and rewilding of our urban forest for a more sustainable

environment. Staff has begun work with the San Francisco Estuary Institute, and it is anticipated that a consultant will be selected later this summer to start this project.

To further preserve and enhance Mountain View’s local tree canopy, the City could implement the following measures:

- Continue to increase the number of trees planted on City property and consider the specific species that will maintain the City’s biodiversity.
- Incentivize shade trees and vegetation planting for private projects.
- Emphasize more tree plantings in communities that could be more vulnerable to climate impacts such as extreme heat such as low-income communities and communities of color, that have historically had significantly less tree canopy.

Carbon Dioxide Removal and Carbon Offsets

Given the challenge of eliminating all emissions, there are two primary ways to offset remaining GHG emissions to achieve carbon neutrality. The first option is to remove emissions by implementing high-quality, quantifiable carbon dioxide removal (CDR) projects. CDR creates “negative emissions” by removing carbon dioxide from the atmosphere and storing it for long periods of time, typically in terrestrial, geological, or oceanic reservoirs.³ Examples of nature-based CDR projects include enhancing carbon sequestration in soil and vegetation through methods like regenerative agriculture, wetlands restoration, biochar, and reforestation. Other municipalities with carbon-neutral by 2030 goals like Flagstaff, Arizona, have opted to incorporate CDR projects in their carbon neutrality plans because they offer multiple co-benefits, including improved air quality, soil quality, habitat restoration, reduced wildfire risk, and public health benefits. Mountain View’s parks and open space, Shoreline region, community gardens, and tree canopy are some of the primary areas within the City with potential to implement these types of projects. This approach would require a substantial portfolio of CDR projects with quantifiable annual sequestration potential.

The second option for addressing the remaining emissions to achieve carbon neutrality is the purchase of carbon offsets. Carbon offsets do not reduce GHG emissions in Mountain View but, instead, “offset” local emissions by funding equivalent reductions elsewhere. These projects can include efforts such as installation of renewable energy, methane capture, or tree planting. To ensure a net decrease in GHG emissions, the reductions must:

- Be quantifiable and verifiable using a transparent calculation methodology.

³ <https://www.wri.org/initiatives/carbon-removal>

- Be new and “additional,” meaning the project would not have otherwise occurred (i.e., the project does not create reductions required by regulations).
- Not result in negative impacts, including “leakage” (increasing emissions outside the project boundary).
- Be permanent, meaning the reductions cannot be reversed.

There are several third-party organizations that verify whether carbon offsets meet these criteria and ensure there is no double-counting of emissions reduction measures (e.g., an offset project is not also being used to comply with a regulatory mechanism such as cap-and-trade, and multiple entities are not receiving credit for the same offset).

Staff surveyed several organizations that offer verified carbon offsets for purchase to determine potential costs. Additionally, staff calculated the cost of Palo Alto’s carbon offset program, which adds a per-therm surcharge on natural gas to purchase offsets, because this example illustrates likely costs for offsets procured through a public bidding process. While the funding mechanism used by Palo Alto is not available to Mountain View, the City could choose to purchase offsets through a similar process using a different funding source. The results are shown in Table 2.

Table 2: Sample Costs of Verified Carbon Offsets

Carbon Offset Source	Cost per MT CO_{2e}
Palo Alto Offset Program	\$0.00-\$18.80
Carbon Offsets to Alleviate Poverty (COTAP)	\$15.00
Native Energy	\$15.50
Carbon Fund	\$16.25
Terrapass	\$16.99

Staff used the information in Table 2 to calculate the estimated annual cost of offsetting the City’s emissions that are not eliminated prior to the carbon neutrality target year. The estimated costs were calculated using a range of \$15.00-\$18.80/MT CO_{2e}. The resulting cost ranges are shown in Table 3 below. It should be noted that this table reflects the current cost of offsets. As more offset projects become available on the market, increasing supply may drive down price, although this impact to prices is not predictable currently.

As an anchor to this information and to illustrate how much work remains in achieving carbon neutrality, for 2019 and 2020 emissions, the annual cost range to offset emissions would be \$9.0 million to \$11.4 million and \$6.7 million to \$8.4 million respectively.

Table 3: Cost of Carbon Offsets By % GHG Reduction

GHG Emissions As % of 2005 Levels	Remaining Emissions to be Offset (MT CO₂e)	Cost (\$) Per Year
30%	211,216	\$3.2M-\$4M
25%	176,014	\$2.6M-\$3.3M
20%	140,811	\$2.1M-\$2.6M
15%	105,608	\$1.6M-\$2.0M
10%	70,405	\$1.1M-\$1.3M
5%	35,203	\$0.5M-\$0.7M
0% (Carbon Neutrality)	0	\$0

As shown in Table 3, the recurring cost of offsets is substantial, especially before the City has achieved most of its anticipated emissions reductions. This liability is significant if the City accelerates its carbon neutrality goal and commits to offsetting all emissions, regardless of the levels. Although offsets offer benefits in the global strategy to address climate change, they do not typically achieve sustained impact locally. As discussed previously, if an accelerated carbon neutrality goal is adopted, staff would likely recommend an approach that balances policy and accountability, keeping a primary focus on reducing emissions with a secondary use of offsets.

Question 3: Does the CSC agree with the recommendation to focus primarily on investing resources into strategies that reduce emissions, balanced with a lesser amount of purchasing offsets to achieve carbon neutrality?

Community Engagement and Equity

Community engagement is the foundation of a sustainable future for Mountain View. It elevates sustainability as a community priority and fosters empowerment and ownership of our shared climate goals. Many of the actions required to achieve carbon neutrality will require robust community engagement with a particular focus on equity. Some examples of equity considerations were discussed previously in the electrification and natural gas section. Mountain View will need to engage the full community to identify additional equity considerations such as better understanding needs and obstacles; ensuring equitable access to resources; and promoting broad participation in sustainability programs offered by the City and other organizations. Outreach for these programs would include partnering with local leaders and trusted community organizations and developing outreach materials that are culturally and linguistically appropriate.

The Sustainability Division, the Communications and Outreach Division, and the Multicultural Engagement Program will need to collaborate with City departments, local businesses, nonprofits, and other organizations to engage the community in achieving carbon neutrality. Current programs such as Electrify Mountain View, Cool Block, educational events, and workshops will be promoted, and new efforts such as a sustainability grant program or other approaches to engage the community may also be initiated. The City may also consider collaborating with other municipalities with carbon-neutral by 2030 goals to offer new and innovative engagement programs. For example, Ann Arbor, Michigan, is implementing a “Sustainability Concierge” service where residents can receive free advice and assistance with enhancing energy efficiency, home electrification, solar, and other sustainability-related actions. Mountain View could partner with other local municipalities to launch a similar regional effort locally.

Question 4: Does the CSC agree with the recommendation to consider equity implications in the identification of appropriate carbon neutrality goals and strategies?

Operational Impacts

All of the functions within the City have a part to play in achieving an accelerated carbon neutrality of as soon as 2030. This effort will involve cross-departmental collaboration and planning as well as changes to municipal operations. Mountain View will need to expand incorporation of climate action into the budget process, procurement decisions, strategic planning, and facility management. The City already operates a manager-level Sustainability Working Group and department head-level Sustainability Governance Committee. These teams would need to convene more frequently and improve cross-functional communication and decision-making under an accelerated carbon neutral timeline.

Achieving carbon neutrality on an accelerated timeline would also require additional staff resources. Current staff across City departments, although committed to sustainability, are working at full capacity. This need was recognized in the most recent Sustainability Action Plan as well as the through the Environmental Sustainability Task Force 2.

Program and Staff Funding

Progress has been made to increase staffing and funding to support sustainability, including funding the addition of a Chief Sustainability and Resiliency Officer, electrification specialist, Deputy Building Official, and Transportation Demand Manager; however, under an extremely ambitious 2030 carbon neutrality scenario, the City would need to consider the financial and staffing implications that would be required to accelerate existing programs and develop new programs. At this time, staff is not able to quantify the potential funding needed for additional programs and staff but will develop these projections at the time of developing a Carbon Neutrality Plan for the City. Staff will also need to consider budgetary resources over the next

five-year forecast period as part of this analysis. Staff will return to Council with a request to fund a consultant to support this effort.

Carbon Neutrality Target Date Options

Mountain View has already taken many steps to reduce GHG emissions. We are on the right path. Significant planning has been undertaken to identify priority sustainability actions required and integration of these efforts across City operations is under way. (A detailed description of all sustainability plans is included in Attachment 2). However, to be carbon-neutral by as soon as 2030, the City would need to amplify and accelerate these efforts, particularly those focused on reducing emissions from transportation and buildings. While 2030 is an ambitious accelerated carbon-neutral target year and the year most responsive to climate scientist recommendations, the City could also choose a different target year, such as 2035 or 2040. Table 4 outlines high level considerations for adopting an accelerated carbon-neutral target year.

Table 4: Relative Cost and Effort by Carbon Neutrality Target Year

Programs	Policy Adoption	Staffing	Offsets	Comments
<p>Carbon Neutrality by 2030: Taking a leadership position on climate action could create an opportunity to leverage significant private financing. This would enable the City to accelerate progress on electrification of our buildings and transportation. It could also provide resources to address some of the equity considerations associated with carbon neutrality, specifically who bears the cost burden. Additionally, an ambitious carbon neutrality target would galvanize the community and enhance our legislative advocacy efforts by making a significant commitment to climate action. One consideration of a carbon neutrality by 2030 goal is the recognition that technological improvements may not meet this accelerated pace. Staff would recommend a balanced strategy related to emissions reductions and offsets where accountability is maintained but the focus would be on emissions reductions over offsets and resources would be invested accordingly.</p>				
+++	+++	+++	+++	<ul style="list-style-type: none"> • Deep, seamless integration across all City departments • Significant new programs and policies to accelerate electrification of transportation and buildings • Substantial funding for incentives and increased staffing • Broad policy changes and reach codes • Deep community engagement and equity lens fully integrated • Leverage private financing and regional, State, and Federal incentives
<p>Carbon Neutrality by 2035: A carbon neutrality by 2035 goal would represent a significant commitment to climate action, balanced with a recognition of the significant challenges involved in achieving carbon neutrality. The State as well as many municipalities are exploring a 2035 carbon neutrality goal, and there could be benefits to building momentum and aligning climate goals across the region. This goal, while still ambitious, could potentially be slightly less galvanizing to funders. Technological improvements may still not keep pace, making it challenging to be able to achieve wide-scale emissions reductions. Again, a strategic approach to balancing accountability with investing in local emissions reductions would need to be developed.</p>				
+++	++	+++	++	<ul style="list-style-type: none"> • Extensive integration across all City departments • Expanded new programs and policies to accelerate electrification of transportation and buildings • Funding for incentives and increased staffing • Policy changes and reach codes • Robust community engagement and equity lens integrated • Leverage private financing and regional, State, and Federal incentives
<p>Carbon Neutrality by 2040: The City's currently adopted carbon neutrality goal is 2045. An accelerated goal of 2040 would show commitment to climate action and a recognition of the urgency of reducing emissions even faster than is called for in the IPCC report. Technological advances could make this goal ambitious and achievable.</p>				
++	+	++	+	<ul style="list-style-type: none"> • Integration across target City departments • New programs and policies to support electrification of building and transportation • Funding for increased staffing • Policy changes and reach codes • Community engagement and equity lens included • Leverage regional, State, and Federal incentives; explore alternative financing models

+ Represents level of effort/funding required.

Staff recommends that the City continue to explore setting a target date that achieves carbon neutrality as quickly as possible, and requests input and feedback on the staff recommendations below. Committee feedback will be used to develop a recommended carbon neutrality target date and approach for CSC consideration.

Does the CSC agree with the following staff recommendations?

1. Direct staff to develop specific accelerated carbon neutrality goals and implementation recommendations, for further discussion at the next CSC meeting (tentatively scheduled for late May).
2. Focus primarily on investing resources into strategies that reduce emissions, balanced with a lesser amount of purchasing offsets.
3. Focus carbon neutrality strategies on the electrification of buildings and transportation.
4. Consider equity implications in the identification of appropriate carbon neutrality goals and strategies.

NEXT STEPS

1. Staff incorporate feedback and continue analysis to develop carbon neutrality goals and implementation recommendations for CSC consideration.
2. Hold CSC meeting in May or June to review staff carbon neutrality recommendations.
3. Bring the CSC carbon neutrality recommendations to Council in late summer or early fall.
4. Hire consultant to develop a carbon neutrality plan in Fiscal Year 2022-23.
5. Concurrently continue progress on emissions reductions towards carbon neutrality through implementation of sustainability priorities as identified in Sustainability Action Plan 4.

CONCLUSION

By establishing a carbon-neutral target year of 2045, Mountain View has already demonstrated its commitment to addressing climate change and reducing GHG emissions. Achieving carbon neutrality by as soon as 2030, or even 2035, would require the City to accelerate GHG reduction efforts, particularly those focused on electrifying buildings and transportation. Within the next

fiscal year, the City plans to hire a consultant to develop a Carbon Neutrality Plan, which would inform the specific actions needed to attain carbon neutrality by the adopted target year.

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- Attachments:
1. Federal, State, and Regional Climate Initiatives
 2. City Climate Sustainability Plans

FEDERAL, STATE, AND REGIONAL CLIMATE INITIATIVES

Federal Initiatives

In December 2021, President Biden issued Executive Order 14057, which sets a range of goals to reduce U.S. greenhouse gas (GHG) emission by 50% to 52% from 2005 levels by 2030 and limit global warming to 1.5 degrees Celsius.¹ Federal goals relevant to carbon neutrality include:

- 100% carbon-free electricity by 2030, including 50% on a 24/7 basis;
- 100% zero-emission vehicle (ZEV) acquisitions by 2035, including 100% light-duty acquisitions by 2027; and
- Net-zero emission buildings by 2045, including a 50% reduction by 2032.

State Initiatives

In October 2020, the California Air Resources Board (CARB) released a report, *Achieving Carbon Neutrality in California*, that evaluates scenarios to achieve carbon neutrality in California by 2045.² This report found that ambitious near-term actions focused on energy efficiency, transportation and building electrification, carbon-free electricity, and reductions in nonenergy, noncombustion GHG emissions were needed to achieve this goal. The report also highlighted the importance of scaling up the State's research, development, and deployment efforts around GHG removal strategies. In 2021, Governor Newsom directed State agencies to assess pathways for the State to achieve carbon neutrality by a more advanced target year of 2035.

Senate Bill (SB) 100, or the "100 Percent Clean Energy Act of 2018," requires 100% of electric retail sales to end-use customers to be supplied by renewable energy and carbon-free sources by 2045 and updates the State's Renewables Portfolio Standard to ensure that at least 60% of California's electricity is renewable by 2030. As required by this legislation, the California Energy Commission (CEC), California Public Utilities Commission (CPUC), and California Air Resources Board (CARB) prepared a report that found the State can achieve SB 100 through multiple pathways.³

The State has set goals for adoption of ZEVs, which include both electric vehicles (EV) and hydrogen fuel cell vehicles. California's ZEV Action Plan outlines the strategy to reach Statewide

¹ Office of the Federal Chief Sustainability Officer, *Federal Sustainability Plan*: <https://www.sustainability.gov/federalsustainabilityplan/index.html>.

² The California Air Resources Board, "Carbon Neutrality": <https://ww2.arb.ca.gov/our-work/programs/carbon-neutrality>.

³ The California Energy Commission, "California Releases Report Charting Path to 100 Percent Clean Energy": <https://www.energy.ca.gov/news/2021-03/california-releases-report-charting-path-100-percent-clean-electricity>.

goals for ZEV adoption: 1.5 million by 2025 and 5 million by 2030, established by Executive Orders B-16-12 and B-48-18, respectively. These Executive Orders also created targets for EV charging infrastructure: 250,000 EV charging stations Statewide, including 10,000 DC fast charging stations, by 2025. State agencies and utilities have developed incentive programs for both vehicles and charging infrastructure to support these ambitious goals. In September 2020, Governor Newsom signed Executive Order N-79-20, which establishes goals to phase out fossil fuel use in the transportation sector.⁴ This Order establishes the following goals for new vehicle sales in California:

- 100% of new passenger cars and trucks will be ZEVs by 2035;
- 100% of off-road vehicles and equipment will be zero-emission by 2035; and
- 100% of medium-duty and heavy-duty vehicles will be ZEVs by 2045 (for all feasible applications).

Efforts to promote building decarbonization are also under way at the State level. As directed by Assembly Bill 3232, the California Energy Commission (CEC) developed the California Building Decarbonization Assessment to evaluate the potential to reduce GHG emissions in residential and commercial buildings by at least 40% below 1990 levels by 2030.⁵ Published in August 2021, the report found that the State could achieve this goal by expanding the use of electric heat pumps, weatherizing and electrifying existing buildings, decreasing refrigerant leakage, promoting fuel switching from natural gas to electricity, and investing in clean energy workforce training. Per SB 1477, the CEC has launched the Building Initiative for Low-Emissions Development (BUILD) program, which provides technical assistance and financial incentives for new, low-income residential building projects using near-zero-emission building technologies.⁶

Regional Initiatives

Silicon Valley Clean Energy (SVCE) has a decarbonization strategy focused on procuring and maintaining a carbon-free power supply, electrifying the built environment and transportation, and promoting energy efficiency and successful grid integration.⁷ In 2019, SVCE adopted an EV Infrastructure Join Action Plan to assess EV charging needs across the service territory and identify new SVCE programs focused on charger deployment. These programs include a transportation electrification workgroup, regional EV leadership recognition programs,

⁴ California Air Resources Board, Governor Newsom’s Zero-Emission by 2035 Executive Order (N-79-20), January 19, 2021: <https://ww2.arb.ca.gov/resources/fact-sheets/governor-newsoms-zero-emission-2035-executive-order-n-79-20>.

⁵ The California Energy Commission, Building Decarbonization Assessment: <https://www.energy.ca.gov/data-reports/reports/building-decarbonization-assessment>.

⁶ The California Energy Commission, “The BUILD Program Guidelines”: <https://www.energy.ca.gov/publications/2022/building-initiative-low-emissions-development-build-program-guidelines-1st>.

⁷ Silicon Valley Clean Energy, Decarbonization Strategy and Programs Roadmap: <https://www.svcleanenergy.org/decarbonization/>.

incentives for DC fast-charging in SVCE-defined priority areas (multi-unit dwellings and corridor uses), technical assistance for multi-unit dwelling residential charging projects, workplace charging rebates, and fleet electrification grants.⁸ Adopted in 2020, SVCE's Building Decarbonization Joint Action Plan identifies strategies to decarbonize new and existing buildings. Strategies include more advanced reach codes for 2022, a feasibility assessment for natural gas phase-out by 2045, local policies to decarbonize existing buildings, the FutureFit Homes and Buildings program, accessible financing, and efforts to support market development.⁹

Santa Clara County is currently developing a Climate Roadmap 2030 to align existing GHG emission reduction efforts across the County and facilitate regional partnerships. The County is also considering a carbon-neutrality goal for the unincorporated areas of the County and has launched a County Climate Collaborative, which brings together staff from various cities, community-based organizations, and institutions across the County to collaborate on sustainability efforts.

⁸ Silicon Valley Clean Energy, EV Infrastructure Joint Action Plan: <https://www.svcleanenergy.org/decarbonization/#>.

⁹ Silicon Valley Clean Energy, Building Decarbonization Joint Action Plan: <https://www.svcleanenergy.org/decarbonization/#>.

CITY CLIMATE SUSTAINABILITY PLANS

Since 2008, Mountain View has developed four types of sustainability plans:

- **Sustainability Action Plans (SAPs):** In 2008, the City developed its first of four SAPs, with each including specific actions for implementation over a three-year time frame.
- **Greenhouse Gas Reduction Program (GGRP):** Developed in 2012, this plan mitigates the environmental impacts of the 2030 General Plan to comply with the California Environmental Quality Act (CEQA). Mandated by the Bay Area Air Quality Management District, the GGRP identifies five strategies and 20 measures to help the City achieve its GHG emissions reductions goals through 2030.
- **Climate Action Plans (CAPs):** In 2015, Mountain View developed CAPs for both the community (Climate Protection Roadmap) and municipal operations (Municipal Operations Climate Action Plan). Each plan identifies short- and long-term strategies and actions across multiple sectors to reduce emissions 80% (below the 2005 baseline) by 2050.
- **Sustainability Strategic Plan:** In 2018-19, the City assessed its own program and developed a strategic plan that mapped out four levels of impact and three levels of response to climate change (Foundational, Advanced, Innovative). This plan directly informed the City Council's significant commitment to sustainability in Sustainability Action Plan 4.

Furthermore, the City is committed to developing two additional sustainability plans:

- **Resilience and Adaptation Plan:** As part of adopting Sustainability Action Plan 4, the City committed to developing a plan that identifies the strategies and actions needed to adapt to the increasing effects of climate change, including how to be more resilient in the face of these impacts.
- **Carbon Neutrality Plan:** On April 21, 2020, the City Council adopted a resolution to become carbon-neutral by 2045 and directed staff to develop a plan by 2025 for how to achieve this goal.

With a need to update its CAPs and GGRP and develop a Resilience and Adaptation Plan and Carbon Neutrality Plan, staff anticipates hiring a consultant to develop an overarching plan that consolidates these plans. This consolidated sustainability framework would then inform the strategies and actions in Sustainability Action Plan 5.