

City Council Questions II

April 30, 2019 Council Meeting

ITEM 3.1 SUSTAINABILITY STRATEGIC PLAN

1. Are there opportunities to partner with major employers to secure funding for some of the positions identified in each of the levels?

There are some instances where corporate donations support City programs or projects. Such support is limited to limited period expenses, rather than ongoing positions. While staff has not, to date, engaged the City's major employers in this conversation, staff believes this could be a worthwhile area to explore, including both financial and in-kind contributions.

2. Just to clarify, are all proposed limited period positions funded for a minimum of 3 years?

Yes, all limited period positions are being proposed to be funded for three years.

3. Why were the benchmark cities successful in reducing greenhouse gas emissions?

The most common cited reasons for GHG reduction in the benchmark cities were reductions in electricity emissions. All of the cities with decreases in overall emissions benefited from lower emissions factors for electricity (whether through a Community Choice Energy program, through energy procurement policies, through REC purchases, through improving emissions factors for the grid, or a combination of these factors). Of these, only one city also cited a reduction in electricity usage. Some of the cities also reported a reduction in transportation emissions. While many of the benchmark cities highlight their transportation demand management achievements, only two of the cities (Boulder and Fort Collins) reported an absolute decrease in vehicle miles traveled (Berkeley, Evanston, and Santa Monica reported an increase, while Palo Alto and Somerville did not provide this information in their online GHG updates). On the vehicle efficiency side of transportation, fuel economy, alternative fuels, and electric vehicles have either helped reduce emissions or reduce growth in emissions. Palo Alto is purchasing carbon offsets for its natural gas usage. Several cities also reported substantial decreases in waste emissions, although waste emissions are typically a relatively small percentage of total emissions and therefore were not the primary contributor to the emissions reductions reported.

4. Rather than select one particular level, could we think of the levels as existing on a continuum and combine aspects of them?

While Council can fund the sustainability program at any level it chooses along the continuum, and could start at one level and progress to another, the positions, programs, and actions identified at each level were designed to work synergistically together, i.e. if only some of the resources are available at a given level, there could be gaps within the organization, reducing the effectiveness of the City's efforts. Staff would prefer Council to generally view the levels as broad "packages" to be funded and to authorize staff to make the most strategic hiring and program decisions based on available funding.

5. What has Palo Alto been doing to reduce their GHG emissions?

Palo Alto's major success in reducing GHG emissions to date has been from providing carbon neutral electricity and energy efficiency initiatives. In addition to their emissions reductions efforts, the city has more recently begun purchasing carbon offsets to mitigate the impact of their community-wide natural gas use. A more detailed outline of Palo Alto's climate action efforts, including links to their sustainability and climate action plan documents, can be found on pages 105-109 of Attachment 4: Case Studies of the 10 Benchmark Cities

6. P. 2. Given the IPCC's latest Special Report on the critical nature of what we do over the next 11 years (by 2030), have any cities adjusted their focus and made 2030 instead of 2050 goals or in addition to 2050 goals?

Cities commonly create interim targets for their GHG reduction goals and 2030 is a commonly used interim goal year. The IPCC Special Report appears to have had an impact by increasing the urgency felt by city policymakers and increasing ambition of the internal targets that cities are using. However, most cities have not yet implemented public processes to update their Climate Action Plan goals to include a revised target for 2030, as the public process for setting new targets requires significant engagement.

Many cities in California already had 2030 goals in addition to their 2050 targets, since California has statewide GHG emissions reduction targets for 2020, 2030, and 2050. The results of the Global Climate Action Summit last September included an Executive Order from California to pursue carbon neutrality by 2045. Some local cities, such as Redwood City, only have near-term 2030 targets because that is as far out as their planning horizon goes. Similarly, Palo Alto has a goal of reducing emissions 80% below 1990 levels by 2030, but they don't have a 2050 reduction target. While we are not aware of any cities that have explicitly revised their goals after the October 2018 IPCC Special Report, some cities have begun to consider the emissions reduction pathways necessary to limit global temperature rise to 2.0 degrees and 1.5 degrees as part of their climate action planning efforts. San José recently mapped out a 2 degree pathway in their climate action plan update, [Climate Smart San José](#). Many cities update their GHG emissions reduction goals as part of a climate action planning process, in order to chart out a concrete path to achieving these goals, which can be a lengthy process. It is possible that more cities may try to front-load their climate action efforts to achieve maximum reductions prior to 2030 without necessarily updating their near-term targets.

From discussions across national networks, it appears that cities are both shifting toward more ambitious timelines for renewable energy deployment and shifting from "80% reductions by 2050" targets to carbon neutrality targets. For instance, in January Boston came out with its Carbon Free Boston Report (which is to be followed later this year with a CAP update that will include carbon neutrality by 2050), and in April, New York City created its OneNYC 2050 Plan with a carbon neutrality target for 2050.

7. The City made a significant large step towards reducing its carbon footprint with Silicon Valley Clean Energy. Can you name one or two very large near-term steps we could take or programs we could set up next? Some staff has told me that incentives for using electric instead of gas cars, like group buy campaigns with an EV action plan, would likely be the biggest next step we could take. Do you think that is true?

There is no single program that could have as big an impact as SVCE, simply due to the scale of impact of shifting 97% of electricity customers to carbon-free electricity. However, launching a major rebate-based program (like a “group buy”) to encourage the community to (1) purchase EVs, and (2) install electric versions of common home appliances (e.g. water heaters, furnaces, and dryers) rather than natural gas versions, could have a large impact fairly quickly. EV and appliance purchases are relatively easy, can be completed quickly, and could generate the greatest GHG savings in the shortest amount of time in the two largest portions of the City’s emissions inventory, compared to other behavior changes or longer-term infrastructure projects.

It is important to note that the City would also want to concurrently invest in the infrastructure needed to encourage mode shift from vehicles to other forms of transportation over the long term, such as walking, bicycling, and transit. This would require a suite of coordinated, complementary programs to support large-scale, long-term transportation emissions reductions and would also help achieve the benefits of reduced traffic congestion and improved safety and mobility.

8. P. 27: Is the table saying we would put money into a Sustainability Reserve rather than CalPERS, SPAR, etc.?

Yes, Table 8 in the staff report identifies planned or proposed transfers to various reserves in the current and next fiscal year that could, instead, be used to establish a Sustainability Reserve

9. How would Measure P money fit into the budget?

The Business License Tax is an annual fee that businesses in Mountain View will pay each year effective January 1, 2020 for small businesses and between 2020 to 2022 for larger companies. When fully implemented, the tax is expected to generate approximately \$6 million per year, of which \$4.8 million (80%) is expected to be allocated to transportation projects. Some of these transportation projects could be chosen to help achieve sustainability goals. The Council could also choose to allocate Measure P funds to Sustainability

10. P. 12 of Cadmus Study: What are the most effective groups for ambitious regional cooperation? We Are Still In lists over 35 cities, businesses, investors, faith and educational institutions very near us and about 200 in the Bay Area. Would this be a good group to work with?

“We Are Still In” is primarily a network of cities and organizations that have pledged not to retreat from the Paris accord to reduce emissions. As such it does provide a useful

list of peer organizations that are committed and who may be good collaborators. It also provides resources for members. However it does not focus directly on regional collaborations through its platform. A list of many regional organizations in the Bay Area that are active in both climate change mitigation and climate change adaptation is provided in Appendix B of the Strategic Plan.

In addition, many of the “We Are Still In” signatories, including Mountain View, are part of “Climate Mayors,” a national effort to collaborate on projects to support emissions reductions. Further, most of the signatories in our region are active participants in other regional groups that are committed to knowledge-sharing and cooperation on climate action. City staff currently participates in monthly meetings of the Silicon Valley Clean Energy “Member Agency Working Group,” which coordinates regional efforts on building and transportation decarbonization. Staff also participates in Joint Venture Silicon Valley’s “Public Sector Climate Task Force,” which provides a quarterly forum for collaboration and knowledge-sharing on climate action efforts among public agencies in the region.

11. P. 12 of Cadmus Study: What is the most effective land sinks or advanced carbon capture technologies at this point?

Increasing the effectiveness of *local* land sinks is not likely to present a substantial GHG mitigation opportunity for the city, due to its very limited supply of undeveloped land. For instance, reforestation can contribute as a net land sink, but requires a substantial amount of forest growth to have substantial impact, much more than the amount of new trees called for in the 2015 Community Tree Master Plan. The most effective actions Mountain View can take in this area are continued support of wetland and habitat restoration along the shoreline and increased tree canopy cover. The City’s tree canopy goals and programs such as the habitat protection and restoration programs such as the Transfer of Development Program in North Bayshore support these efforts.

Regarding advanced carbon capture, the U.S. Department of Energy funds R&D on carbon capture technologies, and provides a summary [here](#). Currently, carbon capture requires a significant energy penalty and is not yet cost competitive for deployment at scale.

This is still a new area, with emerging research that is promising, but no practices or technologies that have become widely adopted. This is not an area of staff expertise, as it is generally something implemented at the State or national level. Carbon sequestration and carbon capture technologies are generally associated with natural and working lands or large-scale industry rather than the types of land uses in Mountain View, though urban forestry also provides local carbon sequestration potential on a much smaller scale. The State’s [2017 Climate Change Scoping Plan Update](#), a document that outlines a strategy to achieve California’s 2030 GHG target, discusses the State’s efforts to quantify carbon sequestered in natural and working lands (such as forests, grasslands, wetlands, rangeland, and even green space in urban areas) and to examine promising emerging strategies to maintain and improve carbon sequestration potential in these areas. Partnerships such as the [Marin Carbon Project](#) have demonstrated success locally in enhancing carbon sequestration in rangeland and agricultural land in Marin County.

The [West Coast Regional Carbon Sequestration Partnership](#) is a collaborative research partnership supported by the U.S. Department of Energy, California Energy Commission, and California Air Resources Board that identifies and assesses the best regional opportunities for carbon sequestration from major stationary sources of GHG emissions, such as power plants, oil refineries, and cement plants. The IPCC Special Report outlines the importance of immediate, direct GHG emissions reductions as quickly as possible to prevent additional GHG emissions from accumulating in the atmosphere and minimize the reliance on future carbon capture and sequestration technologies that have not yet been proven.

12. P. 12-13 of Cadmus Study: Can you sum up the Sea Level Rise Study, resulting projects and the Shoreline reserve fund to address this problem?

The City conducted a study of Sea Level Rise (SLR) in 2013. A link to the 2013 staff report can be found below. The SLR Study describes a list of eleven specific capital projects that could be done to protect Mountain View from sea level rise. Some of the projects require regional cooperation and significant regional funding contributions, while some are manageable by the City with the SRPC Fund as a funding source. One purpose of the SLR study was to determine the financial impact on the Shoreline Regional Park Community (SRPC) Fund. The City has a number of the SLR projects underway as part of our Capital Improvement Program.

<https://www.mountainview.gov/civicax/filebank/blobdload.aspx?BlobID=19818>

13. P. 18 of Cadmus Study: What sustainability-related collaborations has staff been managing with regional entities, neighboring cities and companies in Mountain View, particularly companies in Mountain View?

During the last 11 years, staff has participated in numerous collaborations with regional entities, including the Metropolitan Transportation Commission (MTC), the Association of Bay Area Governments (ABAG), the Bay Area Air Quality Management District (BAAQMD), and others in pursuit of grants and in support of these regional organizations' sustainability goals. Among other projects, Mountain View has collaborated with:

- Santa Clara County and almost 50 other Silicon Valley cities, towns, and counties, and Joint Venture Silicon Valley, to secure reduced-price solar PV systems through the 2007 Silicon Valley Renewable Energy Procurement (SV-REP) program
- Alameda County and 17 other Bay Area public agencies, and Joint Venture Silicon Valley, to secure reduced-price solar PV systems through the 2011 Regional Renewable Energy Program (R-REP) program.
- ABAG and representatives from cities in nine Bay Area counties on their Regional Residential Building Retrofit Program
- Santa Clara County and five other municipalities on the Multiple Jurisdiction Climate Action Planning Project that was funded by PG&E
- Santa Clara County and multiple other local cities and regional agencies to collaboratively develop a climate adaptation and resiliency decision-support tool and guidebook called "[Silicon Valley 2.0](#)"

- Six surrounding cities on an EV charging station grant through the 2015 Bay Area Charge Ahead Project
- Twelve other Santa Clara County government agencies to launch Silicon Valley Clean Energy (SVCE), with Mountain View serving as one of the four founding agencies
- Santa Clara County and five surrounding cities on the “Driving to Net Zero” EV readiness project through a Strategic Growth Council grant

In addition to these collaborations with other local governments and regional agencies, Mountain View has a history of working with technology companies operating in the City. In particular, collaboration with Google has led to the optimization of the process of developing the community-wide and municipal GHG inventories, and the development of a community stakeholder map. Google has also collaborated with Public Works, including contributions to the recycled water fund, discussion of implementing their own recycled water system, running microturbines to generate electricity using the City’s landfill gas, and funding a free community shuttle. Google has also been working on technology projects related to more sustainable concrete and tiny house design, which may provide future collaboration opportunities. The City sustainability office meets with Google quarterly; noting that they have a long list of ideas for collaboration but that there must be a match with Google’s interests as well.

In addition to Google, numerous other technology companies operate in Mountain View, participate in the Transportation Demand Management program, and could be approached for further collaboration. Such companies include a rapidly growing automotive technology sector, which holds promise for collaboration on local transportation sustainability, and many established technology companies including Google, Symantec, Synopsys, Intuit, Microsoft, LinkedIn, Samsung, and others. Some preliminary ideas for collaboration are listed in Appendix B of the Program Assessment, which is Attachment 3 to the Study Session staff memo.

14. P. 37 of Cadmus Study: What would it take to front load the curve in Figure 5?

Front loading emissions reductions would require a rapid acceleration of sustainability investments over the next several years in projects that are expected to have high returns for reducing GHG emissions. It is difficult to say *exactly* what portfolio of actions could result in the “constant percentage” emissions decline pathway without undertaking a climate action planning effort, as neither the City’s current climate action plan nor the actions laid out in the ESTF-2 report follow this emissions reduction pathway. Many emissions reduction actions take time to implement and achieve results, especially those that require behavior change (such as encouraging more bicycling and walking trips). However, given the amount of growth anticipated in the city, three big focus areas could have substantial impact if applied very quickly: (1) actions taken to reduce the GHG intensity of new development, (2) actions taken to ensure that new residents and workers in the city have lower vehicle miles traveled and transportation emissions (for instance, the suggested increase in Public Works staffing to accelerate the build-out of the high priority active transportation improvements in the city), and (3) a portfolio of actions aimed at reducing emissions in existing buildings and among existing transportation system users. A large, incentive-based “group buy” type of effort to

facilitate the adoption of EVs and electric-based home appliances could generate fairly significant GHG savings over a comparatively short period of time. Front loading the curve would likely require a decision to make investments that are described under the “Advanced” or “Innovative” options in the strategic plan, in the near future.

15. P. 40 of Cadmus Study: What is a regional carbon fund?

The concept of a regional carbon fund is that a system could be set up to provide a market for carbon offsets within the metropolitan region rather than purchasing offsets from other parts of the world where the City of Mountain View would not be as likely to see the direct impacts of its offsets. The City of Cambridge has been investigating a *local* carbon fund in which buildings that could not reduce their carbon footprint sufficiently could pay into a fund that would enable other projects in Cambridge to reduce their emissions. The Strategic Plan does not recommend implementing such a fund, but notes that it is one option to manage emissions more broadly across the Bay Area. Due to the California Cap and Trade system already in place, a regional carbon fund would need to be designed carefully to ensure that it had additional impact to the State’s program.

16. P. 61 of Cadmus Study: What percent of total City GHG emissions are from older buildings? What percent of total City GHG emissions are from new construction? Did I read currently something like 9% per year?

Existing buildings account for approximately 28% of total community-wide GHG emissions, according to the preliminary 2017 Community GHG inventory. Our GHG emissions data is not currently available broken out by the age of the building, although this analysis will be a part of the Building Decarbonization Study that SVCE is in the process of conducting. This will give us insight into which building types and ages contribute the most to GHG emissions, in order to better target our GHG reduction efforts in this sector. This will also allow us to compare the relative energy efficiency and total energy usage of newer construction compared to older buildings.

Off-road emissions related to new construction (which accounted for an estimated 9.3% of total community-wide GHG emissions in the 2017 preliminary inventory) are from the construction equipment, rather than the new buildings being constructed. These emissions occur only during the construction phase of new buildings, and will not continue once construction has finished. Once a new building is constructed, its emissions are captured in the energy sector through metered electricity and natural gas use.

It is difficult to quantify the exact GHG contribution expected from new construction, as the total amount of new development and impacts of future building code standards are unknown. Despite the significant amount of new development expected in Mountain View over the next decade, the GHG impact will be largely mitigated by significantly higher energy efficiency standards and SVCE’s carbon-free electricity, although natural gas use will continue to generate emissions until the City mandates all-electric buildings. It is likely that emissions from new construction will account for less than 5% of total community-wide GHG emissions by 2030 in a status quo scenario. Existing buildings that have already been constructed are likely to generate 5-6 times the total

GHG emissions as new construction. These numbers represent the status quo case that does not account for future emissions reduction actions. City programs to reduce GHG emissions from existing buildings and reduce energy use in new construction can reduce the predicted GHG emissions from these sources.

17. P. 91-92 of Cadmus Study: These pages talk about how densification can cut GHG emission by enabling transit use, etc. or increase GHG emission by displacing low-income households so that they drive much further to their jobs. Mountain View seems to be experiencing a great deal of displacement recently. Do our current metrics measure whether our densification and development is reducing GHG emission through reduced SOV use or increasing it through displacement and increased SOV use? If not, how can we get more accurate measurements?

Currently, we estimate our transportation emissions using the output of a travel model. The travel model estimates total citywide vehicle miles traveled based on land use (type of residential, commercial, or other development), the percentage of trips we believe are occurring via each type of transportation mode (car, transit, bicycles, walking, etc.), and certain key model factors such as the diversity and density of land uses, the design of streets that are more 'friendly' to pedestrians and key destinations. Planned increases in residential density, such as in the North Bayshore Precise Plan, are predicted to reduce per-capita vehicle miles traveled. While this travel model represents the best method we currently have to predict transportation impacts, it is not a model that allows for the discrete ability to capture the effects of displacement.

The net GHG impact of displacement can be very complex to quantify, as it depends on household-level knowledge of travel behavior for both households leaving Mountain View and those moving into Mountain View. This includes the trip length and travel mode for all trips, not just commute trips, before and after the move. Unfortunately, there are not currently good sources of data available to support this analysis. The amount of affordable housing included in new development, transportation demand management efforts, prior travel behavior of households moving into Mountain View, and whether or not displaced residents continue to work in Mountain View are all important factors in determining the net GHG impact.

Staff is working to identify alternative sources of data for GHG inventory purposes that may provide better insight into measured travel behavior to avoid the need to rely on predictive estimation methodologies that are not regularly updated. Staff has been consulting with Google in the development of their "[Environmental Insights Explorer](#)" tool, which once completed, may be able to provide a source of measured transportation data aggregated to the city level for all transportation modes. Other 'big data' sources are also available which may offer additional insights. Qualitative information that could be obtained from surveys could also provide insight into some of the effects of displacement, but it would be difficult to obtain the full set of data necessary for GHG emissions quantification through this method.

18. How can we include airplane use in our metrics as that's a BIG one?

GHG emissions from airplane travel are a component of a consumption-based emissions inventory (CBEI), which quantifies the “upstream” and “downstream” GHG impacts of decisions made at the household-level or individual level rather than at the City level. A CBEI provides a good complement to a standard Community GHG Inventory, but can be very time-intensive to produce due to the amount of data collection needed. Airplane travel is estimated to account for 5.3% of the total carbon footprint for the average Mountain View household, according to recent research by UC Berkeley's CoolClimate Network.

BAAQMD collaborated on the development of a regional CBEI with UC Berkeley's CoolClimate Network in 2016. An interactive map of average consumption-based emissions at the census tract level can be found [here](#). This CBEI gives an estimate of the amount of emissions from all sources, including air travel, for households in the Bay Area. Using the [Cool Climate calculator](#), which incorporates this data, households can answer questions about their consumption habits to compare their estimated carbon footprint to the average Mountain View household. One way to include the impact of these consumption-based emissions, including airline travel, in the City's efforts would be to leverage a CBEI as part of outreach to raise awareness of the GHG impact of consumption choices. However, CBEIs generally utilize regional, state, or national-level average purchasing and travel data by household income level to conduct these calculations, so they will not necessarily reflect the aggregate results of individual household-level changes in behavior in any area. For example, these types of inventories do not track actual airline travel by home address, but rather apply an average airline travel miles by household income level to the demographic profile of a given community. Therefore, outreach programs that encourage households to track, reduce, and report their GHG emissions reductions may be the best way to track the results of outreach efforts and whether they successfully change behavior to reduce GHG emissions.

19. I have heard that carbon offsets and cap and trade programming that were once largely a shell games have been refined to become highly effective. I have also heard that the best ones are now rated for effectiveness through programs like the Golden Standard and Green E Certification. Can you tell me more about that and how it might fit into more effective planning?

ESTF-2 Recommendation M1 is for the City to purchase offsets to balance its annual carbon budget and be “carbon neutral” each year. In years where the City does not meet its annual GHG reduction goals, Mountain View would invest in viable, third party-verified carbon offset projects to make up the difference. Offset projects would not likely be located in Mountain View, and therefore would not lower our in-city GHG emissions (as reflected in our GHG inventory), but such projects would lower global emissions, which is the ultimate goal. Examples of offset projects include tree planting, solar and wind energy generating systems, and landfill and dairy farm gas capture systems.

20. Obviously, I am concerned about the costs. How much conversation have we had with SVCE staff as to possible overlap, i.e. I believe SVCE is planning to do outreach on reach codes/building electrification, and they are currently formulating a plan for EV's. Could we leverage some of their work to streamline our work plan?

City staff works very closely with SVCE and other regional entities to coordinate on climate action efforts. We have been actively involved with SVCE as they develop their decarbonization programs, including building electrification and electric vehicle infrastructure incentives, and have considered these as we develop our sustainability work plans. Staff is careful to avoid duplication of effort in these work plans, and plans to leverage SVCE's programs, as well as other regional and state agency efforts, as much as possible. Even when leveraging the programs of a regional entity like SVCE, City staff capacity is required to ensure effective implementation and maximum benefit for the Mountain View community.

21. Are there other funding sources we could look at rather than using contributions to OPEB and PERS?

Other potential funding sources for a Sustainability Reserve could include planned transfers to the Capital Improvement Program in FYS 2018-19 and 2019-20, an allocation of future Measure P Business License Tax revenue, an allocation of any unallocated revenue from cannabis retail and short-term rentals, and grants. Unallocated General Fund operating balances in FY 2020-21 and beyond could be transferred to a Sustainability Reserve in those years, however, this is likely to lower transfers to the CIP, which funds major projects that would be needed to achieve our sustainability goals. In any given year, depending on the nexus, some costs could be charged to the Development Services Fund and the enterprise funds.