



Memorandum

TO: TRANSPORTATION AND
ENVIRONMENT COMMITTEE

FROM: Kerrie Romanow

SUBJECT: SEE BELOW

DATE: May 18, 2022

Approved

Date

5/27/22

**SUBJECT: CLIMATE SMART SAN JOSE: CARBON NEUTRAL SAN JOSE BY 2030
ACCELERATION STRATEGY**

RECOMMENDATION

Accept the strategy for acceleration of work in Climate Smart San José needed to put the City of San José on a path to achieve its carbon neutrality goal by 2030 and recommend this item for full Council consideration at the June 14, 2022 meeting.

OUTCOME

Council approval of the recommendation will establish strategies and supporting actions to accelerate communitywide progress towards meeting the goals of Climate Smart San José and the City's aspiration to be carbon neutral by 2030 and authorize community engagement to further define the supporting actions.

EXECUTIVE SUMMARY

The most recent and comprehensive climate science analysis continues to conclude that we must do more and faster to reduce greenhouse gas (GHG) emissions or risk missing the window to prevent global temperature increases beyond thresholds that could result in significant and irreversible negative impacts. The impacts of climate change already directly affect the quality of life of all residents in San José, and disadvantaged residents bear a disproportionate burden.

Council approved the Climate Smart San José plan ("Climate Smart") in February 2018, which includes milestones to significantly reduce GHG emissions by 2050 in alignment with the 2016 Paris Climate Agreement goals to prevent global temperatures from rising by more than 2°C (or 3.6°F). In 2019, the City declared a "climate emergency". In November 2021, Council adopted a

resolution to work towards community-wide carbon neutrality by 2030 and directed staff to return with acceleration strategies to move significantly toward that goal.

The *Pathway to Carbon Neutrality by 2030* (see Attachment) identifies four acceleration strategies within three key sectors – transportation, buildings, and power source – needed to move toward carbon neutrality by 2030:

- 1) move to zero-emission vehicles;
- 2) reduce the miles travelled in vehicles by at least 20 percent;
- 3) switch appliances from fossil fuel to electric; and
- 4) power the community with 100 percent carbon-neutral electricity.

The *Pathway to Carbon Neutrality by 2030* also includes initial supporting actions for the next two fiscal years, including actions for municipal operations so the City can lead by example. Next steps are to engage the community to refine the supporting City actions and to conduct further technical analysis as needed. These strategies are coupled with a vision of creating a better, stronger and more resilient community by accelerating climate action and moving to carbon neutrality by 2030 and guided by a commitment to engaging all of the community throughout the process.

BACKGROUND

In April 2022, the Intergovernmental Panel on Climate Change released its most recent installment of its Sixth Assessment Report¹, the most comprehensive assessment of climate science to date, concluding that the scientific evidence is unequivocal that climate change is a threat to human wellbeing and the health of the planet, and any further delay in concerted global action will miss a brief and rapidly closing window to secure a livable future.

In February 2018, City Council approved Climate Smart San José one of the first climate action plans in the U.S. setting targets for greenhouse gas (GHG) emissions reductions in line with the goals of the Paris Climate Agreement. Climate Smart focuses on three targeted climate action areas - mobility, energy, water – and the associated quality of life co-benefits (referred to as the Good Life 2.0 in Climate Smart). The Climate Smart plan includes indicators, metrics, and progress milestones for 2030, 2040, and 2050, which are tracked on the publicly accessible Climate Smart Data Dashboard.

In 2019, Council adopted a Resolution declaring a climate emergency to recommit the City to be a leader in climate action. In July 2021, Governor Newsom directed California state agencies to accelerate California's progress to its climate goals with a new 2035 carbon neutral goal. In November 2021, Council adopted a Resolution setting an aspirational goal to be carbon neutral community-wide by 2030. The Resolution defined a "carbon neutral city" as a city that has achieved and demonstrated, in a given year, that it has met net-zero GHG emissions from, at minimum, all the following: 1) fuel use in buildings, transport, and industry, 2) use of grid-

¹ <https://www.ipcc.ch/report/sixth-assessment-report-working-group-ii/>

supplied energy, and 3) treatment of waste generated within the city boundary. With this Resolution, Council directed staff to return to the Transportation and Environment Committee by June 2022 with a specific strategy for acceleration of work in Climate Smart San José needed to put the City firmly on a path to achieve a carbon neutral goal by 2030. This direction included to: 1) work in collaboration with the Mayor's Office to secure funding; 2) focus on transportation and provide estimates of the cost or quantity of needed infrastructure, such as for electric vehicle charging; 3) establish a program that incentivizes and works towards converting gas fueled water heaters to electric across the City; 4) develop a plan to fund the retrofit of existing buildings for energy efficiency and accelerate the electrification of existing homes and buildings; 5) develop a plan to accelerate the electric transition of the City vehicle fleet, for all departments; 6) develop design standards for all future development within the City to utilize roof space (i.e. solar panels, green roofs) to minimize carbon footprint; and 7) develop design standards for construction to reduce carbon costs of construction.

ANALYSIS

Addressing climate change within our remaining window of opportunity will require aggressive, sustained action by participants throughout the world. While San José represents a small piece of total global emissions, setting a goal and laying out acceleration strategies for reducing San José's communitywide GHG emissions will also set an example for others. California and its cities lead the world in climate action. As one of the largest cities in California and the country, San José can help accelerate climate action around the world, as well as within its own community.

San José's Carbon Neutrality Acceleration Strategies

In response to Council direction, staff developed the *Pathway to Carbon Neutrality by 2030*. City staff collected and analyzed available data related to San José's communitywide GHG emissions and identified the need to focus on three key sectors from within the Climate Smart plan - transportation, buildings, and power source - in order to address the vast majority of GHG emissions.

Based on the available data and research, the *Pathway to Carbon Neutrality by 2030* identifies four acceleration strategies within the three key sectors to put the City firmly on a path to achieve a carbon neutral goal by 2030: 1) move to zero-emission vehicles; 2) reduce the miles travelled in vehicles by at least 20 percent; 3) switch appliances from fossil fuel to electric; and 4) power the community with 100 percent carbon-neutral electricity.

Through the research on supportive state, regional, and local plans, policies, and programs and further data analysis, staff identified initial supporting actions for the next two fiscal years that could leverage existing resources and maximize City impact within each of the four key strategies (see Attachment, Appendix 2).

These strategies and supporting actions are coupled with a vision of creating a better, stronger and more resilient community by accelerating climate action and moving to carbon neutrality by 2030 and are guided by a commitment to engaging the community throughout the process. Yet, these supporting actions are just a starting point, many will require further community input and/or technical analysis, evaluating cost and GHG emissions reductions, to determine an appropriate approach.

Additional Follow-Up

In response to Council's November 2021 direction, staff is also providing the following updates and can continue to evaluate both, and vet with stakeholders if needed, as part of the City's building reach code update process (see Attachment, Appendix 2, Strategy 3, B2).

Carbon-cost of Construction

The production of building materials used to construct and retrofit buildings release a significant amount of carbon into the atmosphere. Concrete, steel, and aluminum account for 23 percent of global carbon dioxide (CO₂) emissions². These emissions are called "embodied carbon" because the GHG emissions from manufacturing the materials have occurred prior to construction. As buildings become more efficient, embodied carbon accounts for a larger chunk of their overall carbon footprint, upwards of 57 percent in a low-energy building and between 74-100 percent in net-zero buildings³. By using building materials that have a lower carbon footprint, GHG emissions from embodied carbon can be reduced.

Multiple initiatives across the country focused on embodied carbon policies, including statewide, regional, and citywide initiatives. For example, California and Minnesota both require the states to purchase materials that do not exceed the Global Warming Potential set by the Department of General Services. Additionally, a growing number of Bay Area jurisdictions are interested in embodied carbon and are exploring potential building code options. Marin County adopted an amendment to the model building code that includes pathways for compliance with either reduced cement levels or alternative lower-emission materials. In addition, Marin County prepared a *Code Amendment Toolkit* for jurisdictions interested in adopting a similar ordinance. Among others, the City of Dublin is working on a measure modeled after Marin County's Ordinance.

The City is already testing out low-carbon construction methods within its operations. The Department of Transportation (DOT) is now using concrete injected with CO₂ for the construction of curb ramps compliant with the Americans with Disabilities Act and estimates that with approximately 2,000 curb ramps constructed annually, using a more sustainable concrete mix would be equivalent to removing more than 200 cars from the road for one year.

² <https://architecture2030.org/why-the-building-sector/#:~:text=Just%20three%20materials%20%E2%80%93%20concrete%2C%20steel,%2C%20material%20selection%2C%20and%20specification>

³ <https://www.sciencedirect.com/science/article/pii/S1878029617301275>

Roof Space Design Standards to Minimize Carbon Footprint

The City's current building reach code, adopted in 2019, extended solar requirements from the residential projects, already covered in 2019 state building code, to non-residential projects. California's proposed 2022 Building Energy Efficiency Standards will require solar on non-residential new construction and has increased residential solar requirements from 2019.

Looking Ahead

Upon Council approval, City staff will continue with community engagement and technical analysis needed to further refine the supporting action in the *Pathway to Carbon Neutrality by 2030*. In addition, staff will integrate the carbon neutrality goal, including the accelerated strategies and associated costs (as well as the cost of doing nothing), in the next Climate Smart update.

City staff will continue to aggressively pursue external funding opportunities, leverage existing programs, and seek to coordinate and collaborate in order to reduce costs and support carbon neutral acceleration strategies. Staff will return to Council to request future budget actions as necessary to pair requests for additional resources with specific policy and program proposals.

Staff also expects to bring the following items, in support of the City's carbon neutrality strategies, to Council by the end of the 2022 calendar year:

- San José Moves and Transit First Policy (DOT, May 2022)
- Building Electrification Framework (ESD, June 2022)
- Transportation Demand Management and Parking Policy Update (PBCE/ DOT, June 2022)
- Climate Smart Request for Information (RFI) update (ESD, September 2022)
- Integrated Resource Plan (CED, October 2022)
- Building electrification replacement at burnout policy analysis and community engagement update (ESD, Fall 2022)
- Climate Smart Natural and Working Lands and Solid Waste Elements (ESD, Fall 2022)

San José is a leader in moving toward climate neutrality by 2030 but it is not alone in this endeavor. Other U.S. cities, including Watsonville, Menlo Park, Petaluma, Irvine, Burlington (Vermont), Ann Arbor (Michigan), Flagstaff (Arizona), Ithaca (New York), and Park City (Utah), and several leading companies, including Apple, Microsoft, IBM, LG, Siemens, General Electric, Formula 1, NetApp, Safeway, SAP, SoftBank, Western Digital, and Google, many of which do business in San José, have also made this commitment.

CONCLUSION

The City and the San José community should be proud of its achievements and efforts to address climate change, but also recognize the urgent need to do more.

The City identified the climate emergency and adopted the aspirational goal to be carbon neutral by 2030. Guided by a commitment to engaging all of its community throughout the process, the City can significantly accelerate its progress towards its community-wide carbon neutral by 2030 goal by moving forward with the strategies and supporting actions in the *Pathway to Carbon Neutrality by 2030* to address San José's transportation, buildings, and power source sectors. Moving forward with this Pathway, is an important step in an ongoing process and the City will continue to work with the community to explore, refine, and implement measures that are good for the community and climate.

Through the pursuit of these carbon neutral strategies and actions, the City inspires its community and communities throughout the world, keeps up its momentum in addressing climate change, and attracts funding to accelerate the City's Climate Smart carbon neutral initiatives.

EVALUATION AND FOLLOW-UP

Staff will provide progress updates to the Transportation and Environment Committee and City Council on Climate Smart San José activities on a semi-annual basis.

CLIMATE SMART SAN JOSE

The recommendation in this memo aligns with all Climate Smart San José energy, water, and mobility goals.

PUBLIC OUTREACH

This memorandum will be posted on the City's website for the June 6, 2022 Transportation and Environment Agenda as well as on the June 14, 2022 City Council's Agenda website.

COORDINATION

This memorandum has been coordinated with the City Attorney's Office, City Manager's Budget Office, Departments of Community Energy, Planning, Building and Code Enforcement, and Transportation.

COMMISSION RECOMMENDATION/INPUT

No commission recommendation or input is associated with this action.

FISCAL/POLICY ALIGNMENT

Climate Smart San José activities align with the Climate Smart San José strategies and the City's Envision 2040 General Plan approved by City Council.

CEQA

File No. PP18-009, Determination of Consistency with the Envision San José 2040 General Plan EIR (Resolution No. 76041), Supplemental EIR (Resolution No. 77617), and Addenda thereto.

/s/
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For questions, please contact Julie Benabente, Deputy Director, at (408) 975-2537.

Attachment: *Pathway to Carbon Neutrality by 2030*